TECHNICAL PAPER

10

# Landscape and visual impact assessment

**ALBURY TO ILLABO** ENVIRONMENTAL IMPACT STATEMENT

iris

# Inland Rail Albury to Illabo

## Landscape and visual impact assessment

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# Abbreviations

| Term | Definition |
|---|---|
| A2I | Albury to Illabo section of Inland Rail |
| Construction compound | Construction Environment Management Plan |
| Enhancement site | Critical State Significant Infrastructure |
| EP&A Act | *NSW Environmental Planning and Assessment Act 1979* |
| EPBC Act | Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* |
| EPL | Environment protection license |
| RMAR | Rail Maintenance Access Road |
| SSI | State Significant Infrastructure |

# Glossary

| Term | Definition |
|---|---|
| Active level crossing | At grade road crossing of the rail corridor which uses flashing lights and boom barriers for motorists, and automated gates for pedestrians. These devices are activated prior to and during the passage of a train through a level crossing. |
| Amenity | '*The pleasantness of a place as conveyed by desirable attributes including visual, noise, odour etc.*' (Australian Institute of Landscape Architects QLD 2018) |
| Construction compound | An area used as the base for construction activities, usually for the storage of plant, equipment and materials and/or construction site offices and worker facilities. |
| Construction environmental management plan | A site-specific plan developed for the construction phase of a project, to ensure that all contractors and sub-contractors comply with the environmental conditions of approval for the project and manage environmental risks properly. |
| Cumulative impacts | Impacts that, when considered together, have different and/or more substantial impacts |
| Enhancement site | Discrete sites within the proposal site that are proposed for infrastructure enhancement. |
| Existing rail corridor | The corridor within which existing rail infrastructure, subject to works as part of Inland Rail, are located. The existing rail corridor is defined by ARTC to mean everywhere within 15 metres of the outermost rails; or within the boundary fence where boundary fences are provided and are closer than 15 metres; or if the property boundary is less than 15 metres, the property boundary; or a permanent structure such as a fence, wall or level crossing separating the operating rail corridor from other land. |
| Gantry | An overhead metal structure with a frame supporting equipment such as a signals, lighting or cameras. |
| Glare | '*Condition of vision in which there is discomfort or a reduction in ability to see, or both, caused by an unsuitable distribution or range of luminance, or to extreme contrasts in the field of vision*.' (AS4282:2019) |
| Heritage listed | An item, building or place included on statutory heritage lists maintained by local, State and/or the Australian Government. |

| Term | Definition |
|---|---|
| Inland Rail program | The Inland Rail program comprises the design and construction of a new Inland Rail connection between Melbourne and Brisbane, via Wagga Wagga, Parkes, Moree, and Toowoomba. The route for Inland Rail is about 1,700 km in length. Inland Rail will involve a combination of upgrades of existing rail track and the provision of new track. |
| Landscape | '*All aspects of a tract of land, including landform, vegetation, buildings, villages, towns, cities and infrastructure*.' (Transport for NSW(TfNSW), 2020) |
| Landscape and visual study area | This assessment considers a wider 'landscape and visual study area' which includes both the potential visual catchment and landscape areas associated with the proposal. This area varies according to topography and land cover (vegetation and built form). |
| Landscape character | The … '*combined quality of built, natural and cultural aspects which make up an area and provide its unique sense of place*'. (TfNSW, 2020) |
| Landscape character zone (or area) | '*An area of landscape with similar properties or strongly defined spatial qualities, distinct from areas immediately nearby*.' (TfNSW, 2020) |
| Landscape feature | A component, part or feature of the landscape that is prominent or eye-catching, e.g. hills, buildings, vegetation. |
| Level crossing | A place where rail lines and a road cross at the same elevation. |
| Local road | Road used primarily to access properties located along the road. |
| Magnitude | Magnitude is the … '*measurement of the scale, form and character of a development proposal when compared to the existing condition. In the case of visual assessment this also relates to how far the proposal is from the viewer.*' (TfNSW, 2020) |
| Overbridge | A bridge over a railway or road. For the proposal, overbridges refer to those structures which allow a road to pass over the railway. |
| Pedestrian bridge | A bridge designed solely for pedestrians to cross a watercourse, rail corridor or road. |
| Possession | A period of time during which a rail line is blocked to trains to permit work to be carried out on or near the line. |
| Precinct | Groupings of enhancement sites in line with the LGAs including Albury, Greater Hume – Lockhart, Wagga Wagga and Junee. |
| Proposal | Proposed enhancement works to structures and sections of track along 185 kilometres of the existing operational standard gauge railway between Albury and Illabo for the purpose of meeting Inland Rail specifications. |
| Proposal site | The areas that enhancement works are required to operate the Albury to Illabo section of Inland Rail. It includes the location of construction worksites, operational rail infrastructure, new bridge structures, level crossings and other ancillary infrastructure. |
| Proposal study area | The study area is defined as the wider area including land surrounding the proposal site, with the potential to be directly or indirectly affected by the proposal (for example, by noise and vibration, visual or traffic impacts). The actual size and extent of the study area varies according to the nature and requirements of each impact assessment technical report. |
| Rail alignment | The exact positioning of the track, accurately defined both horizontally and vertically, along which the rail vehicles operate. |
| Rail corridor | The corridor within which the rail tracks and associated infrastructure are located. |
| Rail level | The theoretical level of the running surface of the rails. |
| Sense of place | The intangible qualities and character of a place, interpreted and valued by people. |
| Sensitive receivers | Land uses which are sensitive to potential noise, air and visual impacts, such as residential dwellings, schools and hospitals. |

| Term | Definition |
|---|---|
| Sensitivity | '*Susceptibility of a landscape or receptor to accommodate change without losing valued attributes*.' (Australian Institute of Landscape Architects 2018)<br>The sensitivity of a landscape character zone or view is '*its capacity to absorb change'*. (TfNSW, 2020) |
| Shared user | Descriptor of infrastructure or path designed to accommodate pedestrians and cyclists safely to cross a watercourse, rail corridor or road |
| Sky glow | *'The brightening of the night sky that results from radiation (visible and non-visible), scattered from the constituents of the atmosphere (gaseous, molecules, aerosols and particulate matter), in the direction of observation.'* It comprises Natural sky glow and artificial sky glow. (AS4282:2019) |
| Spill light | *'Light emitted by a lighting installation that falls outside of the design area. Spill light may or may not be obtrusive depending on what it affects'* (AS4282:2019) |
| Track | The structure consisting of the rails, fasteners, sleepers and ballast, which conveys trains. |
| Values | '*Any aspect of landscape or views people consider to be important. Landscape and visual values may be reflected in local, state or federal planning regulations, other published documents or be established through community consultation and engagement, or as professionally assessed*.' (Australian Institute of Landscape Architects 2018) |
| View | The visual experience from the viewer's perspective. *'Any sight, prospect or field of vision as seen from a place, and may be wide or narrow, partial or full, pleasant or unattractive, distinctive or nondescript, and may include background, mid ground and/or foreground elements or features.*' (Australian Institute of Landscape Architects 2018) |
| Viewpoint | '*The specific location of a view, typically used for assessment purposes.*' (Australian Institute of Landscape Architects 2018) |
| Visual absorption capacity | '*The potential for a landscape or scene to absorb a particular change without a noticeable loss of valued attributes*.' (Australian Institute of Landscape Architects 2018) |
| Visual amenity | The value of a particular area or view in terms of what is seen |
| Visual catchment | Extent of potential visibility to or from a specific area, feature or proposal. The visual catchment varies according to topography and land cover (vegetation and built form). |
| Visual impact | The impacts on the views from residences, workplaces and public places. This can be positive (i.e. benefit or an improvement) or negative (i.e. adverse or a detraction) |

# Executive summary

## This proposal

Australian Rail Track Corporation Ltd (ARTC) ('the proponent') is seeking approval to construct and operate the Albury to Illabo section of Inland Rail ('the proposal'). The proposal involves enhancement works to structures and sections of track along 185 kilometres of the existing operational standard gauge railway between Albury and Illabo. Enhancement works are required to provide the increased vertical and horizontal clearances required for double-stacked freight trains.

The proposal is Critical State Significant Infrastructure and is subject to approval by the NSW Minister for Planning under Division 5.2, Part 5 of the Environmental Planning and Assessment Act 1979 (EP&A Act).

This report has been prepared as part of the environmental impact statement (EIS) for the proposal. The purpose of this report is to assess the potential landscape and visual amenity impacts of the proposal.

## Approach to this landscape and visual impact assessment

This assessment responds to SEAR 7. Visual Amenity, which identifies the objective that 'The project minimises adverse impacts on the visual amenity of the built and natural environment (including public open space) and capitalises on opportunities to improve visual amenity.' This assessment identifies the potential for adverse visual impacts on views and vistas, streetscapes, key sites and buildings, heritage items including Aboriginal places and environmental heritage (where relevant), and private landowners and the local community through the preparation of a landscape and visual impact assessment undertaken generally in accordance with the *Guideline for landscape character and visual impact assessment: Environmental impact assessment practice note EIA-04* (TfNSW, 2020). This assessment considers the temporary and permanent impacts of the proposal including spoil mounds, rail formation, bridges and over or underpasses, ancillary infrastructure.

This report assesses the proposal from south to north, dividing it into four precincts (Albury, Hume/Lockhart, Wagga Wagga, Junee), containing smaller enhancement sites, which have been assessed from south to north. The assessment considers a landscape and visual study area which is unique to each enhancement site and extends beyond the construction impact zone to include areas where there would be views to the proposal or a related landscape area.

The landscape character assessment begins with the identification of landscape character areas relevant to each enhancement site. The landscape impact has been determined by identifying the sensitivity of each landscape area, and the likely magnitude of change expected as a result of the proposal, which are then combined to make an overall assessment of landscape impact during construction and operation.

The visual impacts have been identified using a representative viewpoint assessment. This assessment considers the temporary impacts during construction, and permanent impacts during operations, during the day and at night. Visual catchment mapping has been prepared where new bridge structure are proposed and for the potential visibility from the Bomen Axe Quarry Aboriginal Place. Photomontages have been prepared to illustrate the massing and scale of the proposed bridges and operation of double stacked trains within this proposal. The assessment considers the sensitivity of the viewpoint, magnitude of change and assigns a potential visual impact level.

## Landscape impact

The landscape and visual study area includes landscapes ranging from neighbourhood to regional landscape sensitivity. This includes a range of landscapes including the Murray River plains; several landscape character areas associated with rural townships including Culcairn, Henty, Yerong Creek, The Rock, Uranquinty and Illabo; Heritage character precincts at the Albury, Wagga Wagga and Junee Stations; leafy residential areas surrounding Albury, Wagga Wagga and Junee, and industrial areas on the outskirts of town including at the Billy Hughes bridge site in Albury, at the Pearson Street and Bomen enhancement

sites in Wagga Wagga. The existing rail corridor passes numerous open spaces along the route, including in the townships of Culcairn, Henty, Uranquinty and Illabo where there are open space facilities directly adjacent to the rail corridor. There are also open spaces adjacent to the existing rail corridor near the Cassidy Parade pedestrian bridge and in Junee at the Kemp Street bridge.

In the Albury Precinct there would be a **minor adverse landscape impact** during construction on the Murray River plains due to the minor works required in this location. There would also be **moderate adverse landscape impacts** during construction on the Albury Station heritage precinct and within the open space along the Hume Highway. These impacts would be related to the temporary closure of the existing footbridge and scale of the works within the sensitive heritage character station precinct. During operation of the proposal there would be a **minor adverse landscape impact** at the Murray River plains, and **moderate adverse landscape impacts** at the Albury Station heritage precinct due to the operations of more frequent, taller trains within the corridor altering the character of these areas. There would be a **minor beneficial landscape impact** at the open space alongside the Hume Highway, due to the improved accessibility outcome of the pedestrian bridge including the provision of ramps at the eastern side of the existing bridge.

In the Greater Hume – Lockhart precinct, there would be **minor adverse landscape impacts** during construction due to the scale of the works temporarily altering the character and functionality of adjacent areas of open space. During operation there would be **minor** to **moderate adverse landscape impacts** due to the proposal providing further division in each town centre when trains are passing, reducing the east west connectivity for residents and vehicles and reducing the amenity of adjacent areas of public realm and recreational facilities.

In the Wagga Wagga precinct, there would be **minor adverse landscape impacts** during construction in Uranquinty due to the scale of the works temporarily altering the character and functionality of adjacent areas of open space. At the Cassidy Parade and Brookong Avenue residential area and Edmondson Street bridge landscape there would be **moderate adverse landscape impacts** during construction due to the temporary bridge closures and closure of the small playground, and removal of vegetation within close proximity to a residential area and leafy school grounds. At the Wagga Wagga Station heritage landscape, there would be **high-moderate adverse landscape impact**. This would be due to the temporary closure of the footbridge, reducing local accessibility and permeability for residences, and the higher sensitivity of this regionally important landscape character area. During operations there would be **minor** and **moderate adverse landscape impacts** in these character areas due to the introduction of more frequent, taller trains passing through town and in close proximity to residential areas. At the Pearson Street and rail corridor and Bomen Special Activation Precinct landscapes, the impacts during construction and operations would be **negligible**.

In the Junee precinct, the landscape impacts during construction of the proposal would be **negligible** in the rural landscapes of Harefield and through Illabo, as well as in the Junee Station and town centre where the works would be relatively minor. There would, however, be a **moderate adverse landscape impact** at the Olympic Highway underbridge due to the scale of the works within proximity to residential areas. At the Kemp Street and south Junee landscape, there would be a **high-moderate adverse landscape impact**, due to the scale, intensity and proximity of construction activity in proximity to residences, large construction footprint required for the Kemp Street bridge enhancement site, vegetation removal, temporary loss of open space and reduction in local access and permeability for residents. During operations there would be **minor** and **moderate adverse landscape impacts** due to the introduction of more frequent, taller trains in passing through town and in close proximity to residential areas.

## Visual impact

Being located in an existing rail corridor, considering the length and scale of this proposal, the visual impacts are relatively low and have a relatively small influence on the broader landscape. Generally, the impacts during construction are relatively low as there are no greenfield rail corridor required for this proposal and the extent of tree removal is limited. There would, however, be greater visual impacts during operation due to the operation of more frequent, taller trains along the rail corridor. In the Albury precinct, the visual impacts during construction of the proposal would range from **negligible** to **minor adverse visual impact** in views to the Murray River bridge where the works are relatively minor and contained by existing vegetation associated with the River. There would be a greater visual impact in views to the Albury Station pedestrian bridge, due to the higher visual sensitivity of views within this heritage precinct and large scale bridge construction work expected. This would include a **moderate adverse visual impact** on views from the Albury Station platform and Railway Parade. There would also be a **high-moderate adverse visual impact** in views from the Harold Mair Bridge, where the works would be largely unobstructed. During operations the moderate adverse visual impact from views within the Albury Station and the view from the Harold Mair Bridge would continue to be **moderate** and **high-moderate adverse visual impacts** respectively due to the intensification of the rail activity with more frequent trains which are taller being seen from higher sensitivity viewing locations.

In the Greater Hume – Lockhart precinct there would be **negligible** to **minor adverse visual impacts** during construction in Culcairn, Henty and Yerong Creek due to the works being seen in close proximity to residences and parkland reserves along the rail corridor. These impacts would increase to **minor** and **moderate adverse visual impacts** during operations as there would be more frequent trains that would be taller, obstructing views across the rail corridor and being visually dominant and contrasting with the predominantly low-rise development scale in the rural town centres of Culcairn, Henty and Yerong Creek.

In Wagga Wagga, the visual impacts during construction would be **minor adverse** in Uranquinty due to the scale of the works seen in these views, increasing to a **moderate adverse** during operation. Again, this is due to the frequency and size of the additional trains obstructing views across the rail corridor. There would be **negligible visual impacts** during construction and operations at Pearson Street bridge, south of Wagga Wagga, and in Bomen, north of Wagga Wagga, due to the visual absorption capacity of the setting of these views which are in industrial settings. In Wagga Wagga, there would be **moderate adverse visual impacts**, due to the scale of construction works at the Cassidy Parade pedestrian bridge, and a **high-moderate adverse visual impact** at Edmondson Street bridge and Wagga Wagga Station pedestrian bridge. During operations, these visual impacts would range from **minor adverse visual impact** from Brookong Avenue where the new Cassidy Parade pedestrian bridge would be largely out of view, to a **moderate adverse visual impact** from Cassidy Parade where there would be a larger bridge structure and only some new tree planting accommodated within the rail corridor. There would be a **moderate** and **high-moderate adverse visual impact** in views to the Edmondson Street bridge due to the increased scale of the Edmondson Street bridge and more prominent retaining walls facing the adjacent school and residences along Little Best Street. At the Wagga Wagga Station there would be **high-moderate adverse visual impacts** due to the scale of the new pedestrian bridge and presence of more frequent, taller trains within the rail corridor.

The potential for a view from the Bomen Axe Quarry Aboriginal Place was considered in this visual assessment. However, there is only likely to be glimpses to this proposal from this location and **no visual impact** was identified.

In the Junee precinct, there would be **high-moderate**, **moderate** and **minor adverse visual impacts** in views to the Kemp Street bridge during construction. The **high-moderate adverse impact** on views east along Kemp Street where there would be the removal of some trees and construction works seen in Endeavour Park. During operations this impact would reduce to **moderate adverse** as the park would be restored around the realigned roads. There would also be **moderate adverse visual impacts** from areas surrounding the Kemp Street bridge due to the presence of more frequent, taller trains and the larger scale of this

bridge. There would be **moderate adverse visual impacts** in the Junee Station and surrounds where the works to remove the existing pedestrian footbridge would be seen within the station. These impacts would reduce to **minor adverse** during operation as while the infrastructure would be largely in character with the existing rail corridor, there would be more frequent, taller trains seen along the rail corridor.

The potential for a view from the Junee Post Office, a national heritage listed property, was considered in this visual assessment. However, the important view lines associated with this heritage item are views to the post office façade, which is oriented away from this proposal site. Due to intervening vegetation and the location of the works in this location **a visual impact was not identified** for this property.

North of Junee there would be a **moderate adverse visual impact** at the Olympic Highway underbridge and due to the scale of the works seen in close proximity to residential areas and replacing an area of open space temporarily. During operation there would be a **minor adverse visual impact** due to the increased presence of trains seen from open space and in close proximity to residential areas. There would be **negligible visual impacts** during construction in the Junee to Illabo section of this proposal due to the minor scale of the works and absorption capacity of the rural landscape. There would, however, be **moderate** and **minor adverse visual impacts** during operation due to the more frequent, larger trains that would obstruct views across the rail corridor and alter the character of these views.

## Views at night

In the Albury precinct there would be **negligible visual impacts** at night, in the vicinity of the Murray River bridge due to the minor scale of the proposed night works, and also at Albury Station and surrounds where there is an existing brightly lit setting and location of the works within the existing rail corridor where there is the has the capacity to absorb additional lighting. There would be a **moderate-minor adverse visual impact** during construction in the Billy Hughes bridge industrial and rural area which is a landscape of moderate sensitivity and low district brightness, and there would therefore be a greater visual contrast where additional lighting is required for construction works. During operations there would be **negligible visual impacts** in the Albury Precinct as the additional train headlights are not expected to directly spill onto neighbouring properties.

In the Greater Hume – Lockhart precinct there would be **minor** and **moderate-minor adverse visual impact** during construction of the proposal in Culcairn, Henty and Yerong Creek rural town centres which are landscapes of low district brightness and moderate visual sensitivity. This visual impact would be due to the introduction of additional lighting within these locations where there are lower prevailing light levels. The **minor** and **moderate-minor adverse visual impacts** would continue during operation of this proposal due to the additional train headlights seen passing through these townships.

In the Wagga Wagga precinct there would be a **moderate-minor adverse visual impact** during construction in the Uranquinty rural town centre. This township has low district brightness and is of moderate visual sensitivity at night due to additional lighting associated with night works. This impact would continue during operations due to the more frequent train headlights seen passing through town.

During construction, there would also be the potential for a **moderate-minor adverse visual impacts** from residences on the curve north of the rail corridor on Brookong Avenue and southeast of the Edmondson Street bridge on Erin Street at night. This is due to the proximity of construction activity to nearby residents. During operations these **moderate-minor adverse visual impacts** would continue due to the additional train headlights and elevated lighting on the bridge.

In Junee precinct, there would be **moderate-minor adverse visual impact** expected during the construction of the proposal in Harefield and at the Kemp Street bridge enhancement site in south Junee. At the Kemp Street bridge enhancement site this would be due to the works being seen in close proximity to surrounding dwellings. The works in Harefield would contrast with an area with low prevailing light levels. These **moderate-minor adverse** visual impacts would continue during operation of this proposal due to the frequent passing of train headlights, and elevated lighting associated with the Kemp Street bridge. There would not be a direct light spill expected due to this proposal through this area.

There would be a **moderate-minor adverse visual impact** expected at night during construction of this proposal at the Olympic Highway underbridge enhancement site in north Junee. This is due to the proximity of the works in an elevated location, adjacent to residential areas. During operation, the visual impact would reduce **minor adverse** as the additional train headlights would be directed along the track and set back from surrounding private property. In the Junee to Illabo enhancement site there would be a **moderate-minor adverse visual impact** during construction, where the works would contrast with the prevailing low level of lighting in the surrounding rural landscape. This impact would continue during operation of this proposal due to the additional train headlights seen travelling across the landscape.

## Cumulative landscape and visual impact

If approved, there is the potential for a cumulative landscape and visual impact associated with this proposal and several other projects during construction and operation.

Sources of cumulative landscape impacts include:

- The new infrastructure would collectively replace heritage character bridges with larger structures in multiple locations the route
- rail side open space would be impacted in multiple locations along the route, reducing the quality of open space across multiple locations
- east west connectivity would be reduced in rural towns as this proposal across multiple enhancement sites with at grade crossings, and also other Inland Rail projects reduces regional accessibility and connectivity
- improvements to cross corridor accessibility in the larger towns where new bridges would provide improved pedestrian and cycle facilities
- the removal of vegetation would be replaced with an increased number of trees and refreshed landscape areas.

Sources of cumulative visual impacts include:

- Inland Rail – Tottenham to Albury (Victoria) and Illabo to Stockinbingal proposals in the vicinity of the Murray River bridge enhancement site and Junee to Illabo clearances enhancement site
- Operation of the Inland Rail program, with additional freight rail viewed sequentially across the landscape which would combine to intensify the rail character and presence of this corridor in the broader regional landscape
- The Sandy Creek Solar Farm Construction, at the Uranquinty Yard clearances enhancement site
- The Thurgoona Link Road at the proposal at the Billy Hughes enhancement site
- The Wagga Wagga Special Activation Precinct and Bomen Solar Farm at the Bomen Yard clearances enhancement site, including the potential for a cumulative visual impact from the Bomen Axe Quarry Aboriginal Heritage Place, which has glimpses towards the proposal.
- The Grade separating road interfaces, Olympic Highway at Harris Gates, at the Junee to Illabo clearances site. In this location there would be a potential cumulative landscape and visual impact during operation.
- There would also be cumulative landscape and visual impacts where multiple enhancement sites along the route are experienced together or sequentially. This would particularly be experienced from the Hume Highway, between Albury and Wagga Wagga, and in the Wagga Wagga Station and surrounds in views from local schools and residential streets.

# 1. Introduction

## 1.1 Overview

The Australian Government has committed to delivering a significant piece of national transport infrastructure by constructing a high performance and direct interstate freight rail corridor between Melbourne and Brisbane, via central-west New South Wales (NSW) and Toowoomba in Queensland. Inland Rail is a major national project that would enhance Australia's existing national rail network and serve the interstate freight market.

The Inland Rail route, which is about 1,700 kilometres long, would involve:

- using the existing interstate rail line through Victoria and southern NSW
- upgrading about 400 kilometres of existing track, mainly in western NSW
- providing about 600 kilometres of new track in northern NSW and south-east Queensland.

Inland Rail has been divided into 13 projects, seven of which are located in NSW. Each of these projects can be delivered and operated independently with tie-in points on the existing railway.

Australian Rail Track Corporation Ltd (ARTC) ('the proponent') is seeking approval to construct and operate the Albury to Illabo section of Inland Rail ('the proposal').

The proposal is Critical State Significant Infrastructure (CSSI) and is subject to approval by the NSW Minister for Planning under Division 5.2, Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). This report has been prepared as part of the Environmental Impact Statement (EIS) for the proposal. The EIS has been prepared to support the application for approval of the proposal, and address the environmental assessment requirements of the Secretary of the then NSW Department of Planning, Industry and Environment (now the Department of Planning and Environment), dated 14 October 2020.

## 1.2 The proposal

The proposal involves enhancement works to structures and sections of track along 185 kilometres of the existing operational standard gauge railway between Albury and Illabo. Enhancement works are required to provide the increased vertical and horizontal clearances required for double-stacked freight trains.

### 1.2.1 Location

The proposal is generally within the existing active rail corridor between the town of Albury on the Victorian-NSW border and around three kilometres to the north-east of Illabo. The alignment passes through two major regional towns, Albury and Wagga Wagga, NSW, and several smaller regional towns. Works are proposed at 24 locations along the 'Main South Line' corridor, described as 'enhancement sites'.

The enhancement sites have been broken down into four precincts which align with the local government areas (LGA) of Albury, Greater Hume – Lockhart, Wagga Wagga and Junee, as identified in Table 1-1 and shown in Figure 1-1.

TABLE 1-1 ENHANCEMENT SITES

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

### 1.2.2 Key features

The key features of the proposal include:

- adjustments to approximately 43 kilometres of track across 14 enhancement sites to accommodate the vertical and horizontal clearances according to Inland Rail clearance specifications, comprising:
    - realignment of track within the rail corridor
    - lowering of track up to 1.6 metres at three enhancement sites
- changes to bridges and culverts at enhancement sites to accommodate vertical clearances and track realignment as follows:
    - replacement of two road bridges and adjustments to adjoining intersections
    - replacement of three pedestrian bridges
    - removal of two redundant pedestrian bridges
    - modifications to four rail bridges
- ancillary works, including modifications to nine level crossings, modifications to drainage and road infrastructure, signalling infrastructure, fencing, signage, and services and utilities.

No additional works would be required outside the enhancement sites identified in Figure 1-1 as they meet the clearance requirement for the Inland Rail program.

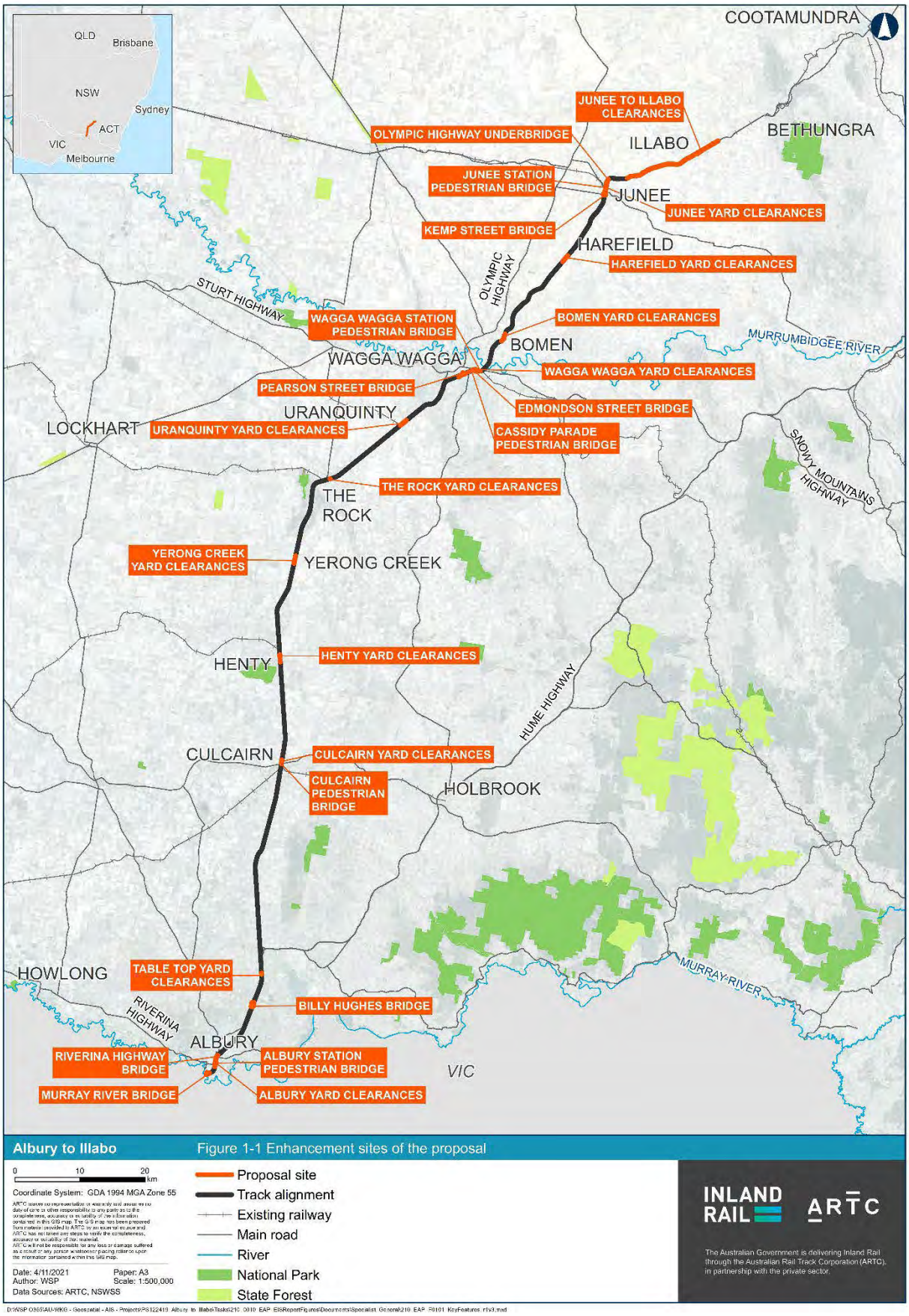


FIGURE 1-1 LOCATION AND KEY FEATURES OF THE PROPOSAL

### 1.2.3 Timing

Subject to approval, further design and procurement, construction of the proposal is planned to start in early 2024 and is expected to take about 16 months. The proposal would be fully operational in 2025 with enhancement sites progressively commissioned on completion of construction. Inland Rail as a whole would be operational once all 13 sections are complete, which is estimated to be in 2027.

### 1.2.4 Construction

An indicative construction methodology has been developed based on the current design to be used as a basis for the environmental assessment process. Overall, the construction strategy is based on an approach of dividing the proposal into four construction packages which align with the precincts: Albury, Greater Hume-Lockhart, Wagga Wagga and Junee.

Construction of the proposal would require:

- construction compounds, laydown areas and other areas needed to facilitate construction works
- temporary changes to the road network, including roads closures to undertake works on road bridges and level crossings
- other ancillary works.

Construction within each precinct would generally involve the site establishment and enabling works, main construction works as relevant to the enhancement site and finishing works as outlined in Table 1-2

Further information on the construction of the proposal is provided in Chapter 8 of the EIS.

TABLE 1-2 INDICATIVE CONSTRUCTION ACTIVITIES

| Construction stages | Indicative activities |
|---|---|
| Site establishment and enabling works | - Establishment of key construction infrastructure, work areas, access points and other construction facilities<br>- Installation of environmental controls, fencing and site services<br>- Preliminary activities including clearing/trimming of vegetation |
| Main construction works | - Track works<br>- Rail bridge works<br>- Road bridge replacement<br>- Pedestrian bridge works<br>- Associated infrastructure works on level crossings, culverts and signalling |
| Finishing works | - Testing and commissioning of the new and modified infrastructure<br>- Demobilisation and removal of construction compounds and other construction infrastructure<br>- Restoration of disturbed areas, as required, including revegetation and landscaping, where required |

### 1.2.5 Operation

The proposal would form part of the rail network managed and maintained by ARTC. Train services would be provided by a variety of operators.

The proposal would enable the use of double stacked trains along its entire length. Inland Rail would operate 24 hours per day and would initially accommodate double-stacked freight trains up to 6.5 metres high and up to 1,800 metres in length. The possible future use of the railway between Albury and Illabo by freight trains up to 3,600 metres long would be subject to separate assessment. Freight train speeds would range from 60 to 115 kilometres per hour, which is consistent with current train speeds.

The average number of freight trains movements between Albury and Illabo would increase from a current average of up to 12 per day in 2021 to 18 per day in 2025, further increasing to about 20 per day in 2040.

ARTC would continue to maintain the Main South Line. This would typically involve minor maintenance works, such as bridge and culvert inspections, rail grinding and track tamping, through to major maintenance, such as reconditioning of track and topping up of ballast as required. Maintenance works and schedule are not proposed to change as a result of the proposal.

Further information on the operation of the proposal is in Chapter 7 of the EIS.

## 1.3 Purpose and scope of this report

The purpose of this report is to assess the potential landscape and visual amenity impacts of the proposal.

This Landscape and Visual Impact Assessment report addresses the relevant Secretary's Environmental Assessment Requirements (SEARs) issued by the Secretary of the then NSW Department of Planning Industry and Environment (now the Department of Planning and Environment) for the proposal on 14 October 2020. The SEARs relevant to this technical paper are presented in Table 1.3.

TABLE 1-3 SECRETARY'S ENVIRONMENTAL ASSESSMENT REQUIREMENTS RELEVANT TO VISUAL AMENITY

| KEY ISSUE | ASSESSMENT REQUIREMENT | REPORT REFERENCE |
|---|---|---|
| 7. Visual Amenity | | |
| The project minimises adverse impacts on the visual amenity of the built and natural environment (including public open space) and capitalises on opportunities to improve visual amenity. | 1. Assess the visual impact of the project (including temporary and permanent spoil mounds, rail formation, bridges, and over or underpasses) and any ancillary infrastructure on: | Chapter 5 |
| | (a) Views and vistas; | Chapter 5 |
| | (b) Streetscapes, key sites and buildings; | Chapter 5 |
| | (c) Heritage items including Aboriginal places and environmental heritage; and | Chapter 5<br>Refer also Technical Paper Technical paper 2 – Aboriginal cultural heritage assessment report, and Technical Paper 3 – Non-Aboriginal heritage |
| | (d) Private landowners and the local community | Chapter 5 |
| | 2. Provide artist impressions and perspective drawings of the project to illustrate how the project has responded to the visual impact through urban design and landscaping. | Chapter 5<br>Note: This assessment is supported by photomontages which provide a higher level of accuracy than artists impressions for the structures, and with indicative urban design and landscaping outcomes shown. |

## 1.4 Structure of this Report

The structure of the report is as follows:

- **Chapter 1 – Introduction** (this chapter) – Introduces the report;
- **Chapter 2 – Legislative and policy context** – Describes the legislative and policy context for the assessment and relevant guidelines;
- **Chapter 3 – Assessment methodology -** Describes the methodology used for the undertaking of the landscape and visual assessment;
- **Chapter 4 – Existing environment -** Broadly describes the existing environment associated with the project area as a whole, informed by research and field investigation;
- **Chapter 5 – Impact assessment –** Describes the features of the proposal and potential landscape and visual impacts during construction and operation, day and night at each enhancement site;
- **Chapter 6 – Cumulative impact** – Describes the potential effect of the proposal in conjunction with other transport infrastructure in the vicinity of the proposal;
- **Chapter 7 – Mitigation and management measures** – Details recommended mitigation and management measures to minimise landscape and visual amenity impacts; and

Within Chapter 5, Impact assessment, this technical paper assesses the proposal from south to north, dividing it into four precincts, and assessing each enhancement site or group of enhancement sites at each precinct.

# 2. Legislation and policy context

The following chapter includes a brief review of the Commonwealth, State and regional planning policy which provide guidance for the management of landscape character and visual amenity values of the study area. Any local planning policy requirements have been provided in the relevant precinct assessment for Albury, Greater Hume – Lockhart, Wagga Wagga and Junee as appropriate. (Refer to Chapter 5 of this technical paper). These documents provide a background to the assessment and will be used to inform the assessment of impact (Chapter 5 of this technical paper) and considered in determining mitigation measures (Chapter 7 of this technical paper).

## 2.1 Commonwealth legislation

### 2.1.1 Environment Protection and Biodiversity Conservation Act 1999

Under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), proposed 'actions' that have the potential to significantly impact on matters of national environmental significance, the environment of Commonwealth land, or that are being carried out by an Australian Government agency, must be referred to the Australian Minister for the Environment for assessment. There would be a controlled action if there was an impact on a significant view from a heritage listed item. As identified in Technical Paper 3 – Non-Aboriginal heritage, the Junee Post Office is listed on the Commonwealth Heritage List. The proposal would not alter a view to this aesthetically significant building or a significant view from this property (refer to assessment in section 5.5.4.2 of this technical paper) and therefore there are no controlled actions relevant to this assessment.

Preliminary environmental investigations identified threatened species under the EPBC Act which have the potential to be impacted by the proposal. As a result of the potential for impacts on protected matters, the proposal was referred to the (then) Australian Minister for the Environment in 2 June 2020 (EPBC Referral No 2020/8670). On 29 June2020, the Australian Government Department of Agriculture, Water and the Environment (DAWE) notified that the proposal is a not controlled action, and hence approval under the EPBC Act is not required.

## 2.2 State legislation, policies and guidelines

### 2.2.1 Environmental Planning and Assessment Act 1979

The *Environmental Planning and Assessment Act 1979* (NSW) (EP&A Act) and Environmental Planning and Assessment Regulation 2021 (EP&A Regulation) establish a framework for the assessment and approval of developments in NSW.

The proposal has been declared as Critical State Significant Infrastructure (CSSI) and is subject to approval by the Minister for Planning under Division 5.2, Part 5 of the EP&A Act. An EIS has been prepared for the proposal to assess the impacts of the proposal in accordance with the SEARs. This technical paper supports the EIS.

### 2.2.2 Beyond the Pavement: Urban design approach and procedures for road and maritime infrastructure planning, design and construction

*Beyond the Pavement: Urban design approach and procedures for road and maritime infrastructure planning, design and construction* (TfNSW, Centre for Urban Design, 2020) advocates the integration of urban design into the process of planning, developing, delivering and

managing transport assets. It is not directly relevant to rail projects but offers some guidance for urban design.

Section 3 of this document provides a set of nine urban design principles '*that should be incorporated into infrastructure projects'*, to ensure '*high quality*' outcomes. These include:

1. *Contributing to urban structure, urban quality and the economy*
2. *Fitting with the built fabric*
3. *Connecting modes and communities and promoting active transport*
4. *Fitting with the landform*
5. *Contributing to green infrastructure and responding to natural systems*
6. *Connecting to Country and Incorporating heritage and cultural contexts*
7. *Designing an experience in movement*
8. *Designing self explaining roads that respond to their role and context*
9. *Achieving integrated and minimal maintenance design.*

These principles will be considered in this assessment where relevant, particularly during the impact assessment (refer to Chapter 5 of this report).

In Section 3.2.3, avoiding '*adverse visual impacts when planning and designing transport projects'* is identified as a priority for principle 2, including use of '*mounding and false cuttings to help screen intrusive elements behind landform*', '*allowing space for screen planting'* and consideration of '*off-site planting'* to manage visual impacts.

In Appendix C, this document also refers to landscape character and visual impact assessment as a 'design tool' to develop a full understanding of the character and functioning of a place, and inform the vision and objectives for transport projects.

### 2.2.3 Guideline for Landscape Character and Visual Impact Assessment: Environmental impact assessment practice note EIA-N04

The *Guideline for Landscape Character and Visual Impact Assessment: Environmental impact assessment practice note EIA-N04 (GLCVIA EIA-N04), Transport for NSW (TfNSW) Centre for Urban Design, 2020* supersedes the *Guideline for Landscape Character and Visual Impact Assessment: Environmental impact assessment practice note EIA-04* (2018, Roads and Maritime Services) referred to in the SEARs. Whilst not considered directly, the superseded document contains the same approach to landscape character and visual impact assessment as the updated version. The current version of the GLCVIA EIA-NO4 will be used for this assessment.

The GLCVIA EIA-N04 is intended to '*guide the preparation of landscape character and visual impact assessments for road and maritime work in accordance with Beyond the Pavement*'. It relates to broader planning and design exercises and environmental assessment investigations which are undertaken iteratively to inform project teams about the effects of a proposal and it informs environmental approval processes defined by the Environmental Planning and Assessment Act 1979 (EP&A Act).

This document provides strategic guidance for rail, rather than prescribe a methodology. The landscape and visual assessment for this proposal has used this guideline as a basis for the assessment method, as described further in Chapter 3 of this Technical Paper.

### 2.2.4 Bridge Aesthetics: Design guidelines to improve the appearance of bridges in NSW

The purpose of *Bridge Aesthetics: Design guidelines to improve the appearance of bridges in NSW* (TfNSW, 2019) is to help design teams produce bridges of '*aesthetic value'*. In Section 1.3, it draws on the high level urban design principles in *Beyond the Pavement* (TfNSW, Centre for Urban Design, 2020), to form an overarching framework for Bridge Aesthetics, including consideration of the relationship to the surrounding natural and built landscape, form, proportions and scale, and use of texture, colour and lighting in .

In Section 2.1.2, it identifies the '*visibility of the bridge'* as an '*important contextual factor'*. It further states in Section 2.1.2 and 2.1.7: '*a bridge which is looked on by the community needs to be carefully considered in terms of its visual impact on residents and road users' ,* due to the potential for bridges to '*affect the visual quality and sense of place'*. In Section 3.1.3, it also advocates the design '*complexity of a bridge should be minimised in a rural setting'*, including preference for a simple bridge profile '*to allow the landscape setting to dominate the view and be appreciated from all viewpoints'*.

These principles have been considered generally in this assessment.

### 2.2.5 NSW Sustainable Design Guidelines, Version 4.0

The *NSW Sustainable Design Guidelines, Version 4.0* (TfNSW, 2017) seeks to deliver sustainable development practices by embedding sustainability initiatives into the planning, design, construction, operations and maintenance of transport infrastructure projects. This is a strategic document that provides context for this assessment.

### 2.2.6 Technical guideline for Urban Green Cover in NSW

The *Technical Guidelines for Urban Green Cover in NSW* (OEH, 2015) offers built environment professionals working in State and local government and the private sector practical information and typical details to encourage best practice applications of green cover, so as to minimise urban heat impacts across NSW. It provides information for planning and implementing green cover into the urban environment, to minimise local temperatures while improving community amenity, through the integration of vegetation with permeable and reflective surfaces.

Although the proposal is mostly located in a rural area, limiting the applicability of these guidelines, the principles outlined will be considered where the alignment passes through urban areas such as Albury and Wagga Wagga.

### 2.2.7 AS4282: 2019 Control of the obtrusive effects of outdoor lighting

*AS4282:2019 Control of the obtrusive effects of outdoor lighting* (AS4282:2019) supersedes the AS4282:1997 standard referred to in the SEARs.

This standard specifies the requirements for the control of the obtrusive effects of outdoor lighting in the public realm. It defines environmental settings based on land use and development density as the basis for these standards. These settings have been used in the impact assessment to describe the night time sensitivity of the landscape and also will be used to ensure the detailed design minimises any obtrusive effects of lighting.

### 2.2.8 Urban Design for Regional NSW

*Urban Design for Regional NSW* (NSW Government Architect, 2020) acknowledges the unique conditions in regional NSW and provides '*urban design advice to guide the development of healthy built environments in regional areas'*. Section 3.2 focuses on the implementation of urban design strategies within the context of '*Town centres and main streets'* in regional areas. Three of the seven urban design strategies most relevant to this assessment, and have been considered when undertaking this assessment, these are:

***(1) Engage with the history and culture of places:***

- *Enhance the role, visibility, and value of historic buildings and landscapes by:*
  - *retaining and restoring buildings, landscapes, and elements of local value, incorporating them within new development*
- *Ensure that new development is sensitive to its immediate context by:*
  - *analysing and understanding the local character of the main street or town centre, including how it has been created, and which elements contribute to maintaining it*
  - *determining building heights, setbacks, footprints, and details which are appropriate for neighbouring historic and cultural assets and their characteristics*

***(2) Integrate with the natural environment and landscape:***

- *Relate main streets and town centres to surrounding natural features by:*
  - *facilitating physical and visual linkages to significant landscape features, increasing awareness and enjoyment through new views and access*
  - *using local species of trees to foster a local streetscape character*
- *Continue green infrastructure networks through main streets and town centres to improve urban amenity, build local character and support biodiversity by:*
  - *planting street trees and integrating other forms of landscaping into the street design to create continuous green connections between open spaces and to outer areas.*

***(3) Revitalise main streets and town centres:***

- *Enhance the public realm to encourage people to spend time in streets and public spaces by:*
  - *upgrading streetscapes and public spaces through improvements to landscaping, pavements, street furniture, and lighting, shade, shelter, seating and play spaces*
  - *making new or improved pedestrian connections through spaces such as laneways and car parks*
  - *using public art to create places which are distinctive, and which reflect local identity*.

## 2.3 Regional planning policy

### 2.3.1 Riverina Murray Regional Plan 2036

*Riverina Murray Regional Plan 2036* (NSW Department of Planning, Industry and Environment (DPIE), 2017)is intended to guide the NSW Government's land use planning priorities and decisions over the next 20 years and will be considered in Section 5 of this report. The proposal is located in the eastern part of the Riverina Murray Region. The region is '*one of the most productive and diverse agricultural regions in Australia*', giving rise to its claim as being the food

bowl of Australia. In Goal 1, Direction 1, the protection of the region's important agricultural land identified from '*land use conflict and fragmentation'* is identified as a priority.

The diversity and richness of the Riverina Murray environment is highly valued by residents, a major attraction for visitors, and the foundation for the region's productive natural resources. The protection, management and restoration of the region's environmental assets, including major rivers, waterways and wetlands, '*for the ongoing enjoyment of residents and visitors'* is identified as a priority in the regional vision. The region contains areas of potential *'High Environmental Value'*, including the Murray and Murrumbidgee River corridors, wetlands and lagoons, and native vegetation which are of high conservation value. Protecting the '*aesthetic values of the Murray River*' is identified as a priority for the Greater Hume Shire.

In Goal 3 recognises the region's heavy reliance on '*transport infrastructure to efficiently move products, including commodities, such as beef, grain, manufactured food and paper, to market'*. Inland Rail is identified as an important project for the region, with finalisation of the planning and design listed as a key action under Goal 3, Direction 20,.

### 2.3.2 Riverina Murray Destination Management Plan

*Riverina Murray Destination Management Plan* (Destination River Murray NSW, 2018) was established by the NSW Government in 2017 as one of six Destination Networks responsible for '*driving the growth of the region's visitor economy*'.

The proposal is located in the Albury-Hume and Eastern Riverina sub-regions, which attract the largest number of visitors in the Riverina Murray Region. The major tourist experiences in the Albury-Hume sub-region '*are related to the town's settler history and many museums*'. The Eastern Riverina sub-region is described as a '*typical south eastern Australian landscape, dominated by rolling hills with broad scale agriculture including sheep and cattle grazing and cropping*'. The region is characterised by a '*series of archetypal Australian rural towns, with largely intact 19th century streetscapes, surrounded by rolling hills and farms'*. Towns such as Lockhart and Junee '*provide opportunities for touring through the Eastern Riverina'*. The Junee Liquorice and Chocolate Factory is listed as '*one of the iconic attractions in the Eastern Riverina'*.

As the '*vast majority of visitors to the Riverina Murray access the region by private vehicle'*, *'major touring routes'* is one of nine Strategic Development Themes developed to respond to the issues and opportunities for the region. The major touring routes identified in the study area are the:

- Olympic Highway
- Sydney to Melbourne Heritage Drive (an inland route between Sydney and Melbourne which includes part of the Hume Highway)
- Canola Trail (via Coolamon, Junee, Temora).

This document also recognises the importance of preserving and enhancing the regional centres and historic towns, as well as the region's '*food bowl'* and '*natural assets*' such as the Murray and Murrumbidgee rivers, for the long-term viability of tourism in the Riverina Murray region.

# 3. Assessment methodology

## 3.1 Guidance for landscape and visual impact assessment

A range of guidance is available for the assessment of landscape and visual impact. The following documents have been used to guide the methodology for this assessment:

- Guideline for Landscape Character and Visual Impact Assessment EIA-N04 (GLCVIA EIA-N04), Transport for NSW (TfNSW), 2020, and
- The Guidance Note for Landscape and Visual Assessment (GNLVA), Australian Institute of Landscape Architects Queensland, 2018.

These documents provide strategic guidance, rather than prescribe a methodology. The assessment methodology for this assessment has been tailored to meet the SEARs (refer to Section 1.3 and Table 1.3 of this report), which refers to several design and assessment guidelines. The approach and method used for this assessment is described in Section 3.4 and 3.5 of this report.

## 3.2 Study area

The study area used for this assessment includes the potential visual catchment of each enhancement site and areas beyond this which have a landscape character or functional relationship with the enhancement site. This area was determined based on the interpretation of aerial photograph and verified by field investigations. Each enhancement site has a unique study area.

## 3.3 Field investigations and site photography

Field investigations were undertaken during April of 2021. Photographs of key features on the site and surrounding landscape were taken including views to the site from publicly accessible areas surrounding the site including from residential streets, parks, commercial and public realm areas. A selection of these photographs have been used to illustrate the existing landscape character and in the representative viewpoint assessment (refer to Section 5 of this technical paper).

## 3.4 Landscape character assessment methodology

The landscape character assessment begins with the identification of landscape character areas relevant to each enhancement site. A landscape character area is *'An area of landscape with similar properties or strongly defined spatial qualities, distinct from areas immediately nearby*.' (TfNSW, 2020). The landscape character areas were determined by a desktop review and field analysis of landform; vegetation cover and type; built form scale, style, materials; the presence of heritage buildings, gardens and community places; linear infrastructure such as roads, rail and transmission lines; land use and patterns of activity; spatial relationships between these elements and overall sense of place and local identity. These character areas were grouped at a scale that reflected the scale of this proposal and the enhancement sites.

The landscape impact was then determined by identifying the sensitivity of each landscape character area, the likely magnitude of change expected as a result of the proposal, which are then combined to make an overall assessment of landscape impact.

### 3.4.1 Landscape sensitivity

Landscape sensitivity refers to the value placed on a landscape and its susceptibility to change. The sensitivity of a landscape may reflect the frequency and volume of users but it may also reflect valued characteristics such as rarity, tranquillity, scenic amenity and its contribution to sense of place. The value of landscapes can be described in Commonwealth, State and local government masterplans and planning documents and protected by legislation. These protections reflect the importance of landscape resources to the local, regional and state-wide community.

Landscape sensitivity in this assessment is therefore considered in the broadest possible context, from those landscapes of national importance through to those considered to be landscapes of importance locally.

Table 3-1 lists the landscape sensitivity levels that applies to this assessment.

TABLE 3-1: LANDSCAPE SENSITIVITY LEVELS

| Landscape sensitivity | Description |
|---|---|
| National | - Landscape feature or place protected under Commonwealth legislation or international policy e.g. the Red Top Lookout at the World Heritage Listed Mungo National Park, or Anzac Parade, Canberra.<br>- These landscapes are generally unique and uncommon nationally. |
| State | - Landscape feature or place that is heavily used and/or is iconic to the State, e.g. Recreational trails and lookouts in Kosciuszko National Park.<br>- These landscapes are generally unique to or uncommon within the state. |
| Regional | - Landscape feature or place that is heavily used and valued by residents of a major portion of a city or a non-metropolitan region and / or<br>- Places with regionally important scenic value or to landscape features e.g. The Rock Nature Reserve, Albury and Wagga Wagga Stations and heritage conservation areas.<br>- These places are generally unique or uncommon within the region. |
| Local | - Landscape feature valued and experienced by groups of residents and/or local recreational users and / or<br>- Places of local scenic value or local landscape features e.g. Monument Hill Parklands and Dean Street conservation area in Albury.<br>- These places are likely to be somewhat common within the landscape. |
| Neighbourhood | - Places without any particular scenic values or local landscape features<br>- These places are likely to be common within the landscape. |

### 3.4.2 Magnitude of change to the landscape

The changes to the landscape that would occur as a result of the proposal are assigned a magnitude of change level. This considers direct impacts on the landscape such as the removal of trees and vegetation, open space, footpaths and public realm areas, as well as indirect impacts, such as changes to landscape character, amenity or the function of an area of open space or the public realm. The magnitude of change can result in adverse or beneficial effects.

Table 3-2 lists the magnitude of change levels that have been used in this assessment.

TABLE 3-2: LANDSCAPE MAGNITUDE OF CHANGE LEVELS

| Magnitude of change | Description |
|---|---|
| High | - The landscape is altered such that the proposal dominates and / or transforms its character, amenity and / or function in an adverse or beneficial way. |
| Moderate | - The proposal substantially changes and / or transforms the character, amenity, and function of the landscape in an adverse or beneficial way.<br>- This would result in an extensive change in landscape values. |
| Low | - The proposal somewhat changes the character, amenity, and function of the landscape in an adverse or beneficial way.<br>- This would result in a noticeable change in landscape values. |
| Negligible | - The proposal would not change the character, amenity and/ or function of the landscape.<br>- If there is a change, it would not be perceived as altering the landscape values. |

### 3.4.3 Assigning landscape impact levels

An assessment of landscape impact has been made by combining the landscape sensitivity and magnitude of change levels for each landscape character area and assigning an impact level (refer to Table 3-3).

TABLE 3-3: LANDSCAPE IMPACT LEVELS

| | | Sensitivity | | | | |
|---|---|---|---|---|---|---|
| | | National | State | Regional | Local | Neighbourhood |
| Magnitude of change | High | Very high | Very high | High | High-moderate | Moderate |
| | Moderate | Very high | High | High-moderate | Moderate | Minor |
| | Low | High | High-moderate | Moderate | Minor | Negligible |
| | Negligible | Negligible | Negligible | Negligible | Negligible | Negligible |

## 3.5 Visual impact assessment methodology

The assessment of visual impact uses a representative viewpoint assessment approach. Representative viewpoints have been selected from the potential visual catchment of the proposal, at each enhancement site. Each view has then been assessed by identifying the magnitude of change level created by the proposal, and the sensitivity of the viewer. Combined, these characteristics of the view are then used to assign a level of potential visual impact. This methodology is explained more fully in the following sections.

It is noted that the SEARs require an assessment of views and vistas. A vista is a type of view, and not a term defined in the relevant guidance documents. A 'vista' can refer to an attractive view, and is generally a long view framed by trees. All types of views, be they vistas, panoramas, or another composition, would be considered in a representative viewpoint assessment methodology where they are encountered.

### 3.5.1 Existing visual conditions and visual catchment of the proposal

The existing views and potential visual catchment of the proposal has been described. This includes the identification of any significant viewpoints and vistas identified in the review of relevant planning instruments and masterplans, and from field observations.

A map has been prepared to illustrate the potential visual catchment of key structures (area that would see the structure). This visibility analysis is prepared using a digital surface model (DSM) derived from point cloud data using points at a 1 metre interval sourced from LiDAR data (2020). The DSM includes landform and all surface features including built form and vegetation and is most useful in urban settings. The visual catchment was then modelled from a future known location and height (e.g. on the top of proposed bridge structure) to identify the areas from which views to the proposal may be seen.

A viewshed diagram (views from a point) has also been prepared to illustrate the theoretical viewshed from locations where access was not possible (e.g. the Bomen Axe Quarry Aboriginal Place) to assist with the assessment of potential visual impact. This viewshed diagram was prepared using a digital terrain model (DTM). A DTM includes landform only (excludes the screening effect of trees and other built features) and therefore shows a worst-case scenario for the potential viewshed of an identified location. This approach is particularly useful in rural settings where the filtering effect of trees would not be accurately reflected in the LiDAR data.

### 3.5.2 Representative viewpoint assessment

Views representative of the site have been selected, they include views from areas where the largest number of viewers are likely to congregate, such as lookouts, major roads and scenic routes, as well as locations in sensitive recreational and natural areas. While these views do not capture all vantage points, they have been selected to highlight the key potential visual impacts.

Photomontages have been prepared for some of these viewpoints to support the assessment of impact. These views illustrate locations where the proposal would be seen from higher sensitivity locations (Refer 3.5.6 for further details). In accordance with the GLCVIA EIA-N04 (TfNSW, Centre for Urban Design, 2020), the potential visual impact of the proposal on groups of private residences where appropriate, and where a location is not publicly available, such as from a residence, … '*a view from the nearest accessible point should be taken*' will be assessed generally and using views from publicly accessible locations within local streets and parks.

### 3.5.3 Visual sensitivity

Visual sensitivity refers to the nature and duration of views. Locations from which a view would potentially be seen for a longer duration, where there are higher numbers of potential viewers and where visual amenity is important to viewers can be regarded as having a higher visual sensitivity.

To ensure the impacts are attributed fairly, the sensitivity of each viewpoint is considered in the broadest context of possible views, a range of negligible through to very high will be used to allow for the assessment of views ranging from neighbourhood importance through to those of national importance. The following terminology has been used to describe the level of visual sensitivity, see Table 3-4.

TABLE 3-4: VISUAL SENSITIVITY TABLE

| Visual sensitivity | Description |
|---|---|
| National | - Heavily experienced view to a national icon, e.g. view to Sydney Opera House from Circular Quay or Lady Macquarie's Chair, view along Anzac Parade to Parliament house, Canberra, and / or<br>- Views to areas with a scenic value of national importance or to landscape features of the State, and / or<br>- Identified view lines from World Heritage Listed Places.<br>- These views are generally unique and uncommon nationally. |
| State | - Heavily experienced view to a feature or landscape that is iconic to the State, e.g. views from Kosciuszko lookout in Kosciuszko National Park, and / or<br>- Views to areas with a scenic value recognised by the State.<br>- These views are generally unique or uncommon within the State. |
| Regional | - Heavily experienced view to a feature or landscape that is iconic to a major portion of a city or a non-metropolitan region, an important view from an area of regional open space. e.g. views from the lookout at The Rock Scenic Reserve and / or<br>- Views to / from areas of regionally important scenic or landscape value or to landscape features of the region e.g. view along Dean Street to Monument Hill, Albury; view from the Bomen Axe Quarry Aboriginal Place to Kengal (The Rock).<br>- These views are generally unique or uncommon within the region. |
| Local | - High quality view experienced by concentrations of residents and/or local recreational users, and/or large numbers of road or rail users, and / or<br>- Views to areas of local scenic value or to local landscape features e.g. views from heritage conservation areas, railway stations and local parks.<br>- These views are somewhat common within the landscape. |
| Neighbourhood | - Views where visual amenity is not particularly important to the wider community, such as lower quality views briefly glimpsed from roads.<br>- These views are likely to be common within the landscape. |

### 3.5.4 Magnitude of change

The magnitude of change refers to the change to the landscape that would occur as a result of development from a given viewpoint. This includes what has changed, and how it has changed. The magnitude of change describes the extent of change and identifies elements which are removed or added, changed in colour and texture, and compatibility of new elements with the existing landscape. This change can result in an improvement or reduction in visual amenity.

A high magnitude of change will result if the development contrasts strongly with the existing landscape. Whereas a low magnitude of change occurs if there is minimal visual contrast and a high level of integration of form, line, shape, pattern, colour or texture values between the development and the environment in which it sits. In this situation, the development may be noticeable but does not markedly contrast with the existing modified landscape.

Table 3-5 lists the terminology used to describe the magnitude of change.

TABLE 3-5: MAGNITUDE OF CHANGE

| Magnitude of change | Description |
|---|---|
| High | - The view is altered such that the proposal visually alters and transforms the character of the view in an adverse or beneficial way.<br>- It would result in a substantial change in the amenity of the view. |
| Moderate | - The proposal is visually prominent and would result in a considerable change in the amenity of the view, in an adverse or beneficial way. |
| Low | - The proposal is somewhat prominent and would result in a noticeable change in the amenity of the view, in an adverse or beneficial way. |
| Negligible | - The proposal is not visible, is not visually prominent in the view and / or is compatible with the character of the view.<br>- It would result in no perceived change in the amenity of the view. |

There are some general principles regarding the relationship between the proposal and the landscape which determine the magnitude of change level. These principles, or assumptions, relate to how well the proposal can be absorbed into the landscape and what is considered to be more or less visually harmonious. These principles will be applied generally to the viewpoint assessment, and include:

- Scale - the larger the scale of a development, the more visually prominent it is likely to be;
- Form - the shape and style of a development can assist in the absorption of the proposal into a view e.g. a bridge design which reflects the shapes and style of adjacent buildings may be difficult to differentiate in a view compared to a shape and style that is not; or a light weight bridge structure may be less prominent in some settings;
- Distance - the greater the distance, the smaller the portion of the view that will be affected, and the less prominent the proposal is likely to be;
- Landform - landform can intervene and provide natural screening of a proposed development, or allow greater visibility if the proposal elements are located on flat or higher ground;
- Vegetation - taller trees, and more dense vegetation may screen and reduce visibility;
- Development context and character - the presence of other existing development of a similar character can increase the compatibility of development within a view;
- Colour and texture – the use of colours that complement or blend with the surrounding landscape and built form can reduce visual contrast, whereas contrasting colours can increase the visual prominence of proposal elements; and
- Line and alignment, simple lines and an alignment reflecting the patterns of the existing landscape can reduce visual contrast, whereas intersecting lines and discordant alignments can increase the visual prominence of proposal elements.

These principles have been applied generally to the viewpoint assessment.

### 3.5.5 Assigning visual impact levels

An assessment of visual impact has been made by combining the visual sensitivity and magnitude of change levels for each representative viewpoint and assigning an impact level (refer to Table 3-6).

TABLE 3-6: VISUAL IMPACT LEVELS

| | | Sensitivity | | | | |
|---|---|---|---|---|---|---|
| | | National | State | Regional | Local | Neighbourhood |
| Magnitude of change | High | Very high | Very high | High | High-moderate | Moderate |
| | Moderate | Very high | High | High-moderate | Moderate | Minor |
| | Low | High | High-moderate | Moderate | Minor | Negligible |
| | Negligible | Negligible | Negligible | Negligible | Negligible | Negligible |

### 3.5.6 Photomontages

Photomontages have been prepared to illustrate the expected changes to views as a result of the proposal. While the SEARs request 'artists impressions and perspective sketches' it is noted that photomontages, provide a more accurate representation of the massing and scale of the proposal and are suitable for the purposes of demonstrating potential visual impact. As such, several photomontages have been prepared to support this visual impact assessment.

These photomontages provided in this assessment have been created using a combination of 3D modelling and photo editing techniques.

The process used to prepare these images was as follows:

- GPS coordinates and details of the camera was recorded
- A digital surface model was prepared using 2020 LiDAR data with points at 1 metre intervals
- The rail alignment and associated infrastructure were modelled in 3D and materials assigned to the model.
- The camera was positioned in the model using the photograph GPS data for each image
- A minimum of three points were identified in the digital surface model, and used to align the 3D model in the photograph, and
- The photograph and modelled elements are combined and edited in photoshop.

The photomontages used in this assessment represent the operational view to the proposal. Photomontages of construction activity or construction camps have not been prepared as these are temporary activities which would change throughout the construction process.

The viewpoints selected for photomontages were chosen to represent a range of viewing locations along the rail corridor, from a distance and orientation where the proposal would be most visible. The photomontage locations were also chosen to illustrate views from areas with the greatest visual sensitivity and where the most viewers would be located.

Photomontages have been prepared to illustrate the new road and pedestrian bridges in Albury, Wagga Wagga and Junee as these present the greatest visual change and have the largest potential number of receivers. A photomontage has also been prepared at Culcairn to illustrate the scale of double stacked freight trains during operation in a location typical of townships in this area of the project. Distant views were not selected for photomontages as the as the extent of

change that would be shown in the photograph would be less discernible and the potential visual impacts are generally lower.

### 3.5.7 Assessment of night-time visual impact

An assessment of the potential visual impacts of the proposal at night has been undertaken for each of the enhancement sites. This assessment will consider any proposed permanent lighting as well as the headlights from the trains operating at these locations.

The assessment of night-time impact has been carried out with a similar methodology to the daytime assessment. However, the assessment also draws upon the guidance contained within AS4282 *Control of the obtrusive effects of outdoor lighting* (2019).

AS4282 identifies four main potential effects of lighting, which are, the effects on residents, transport system users, transport signalling systems and astronomical observations. Of relevance to this assessment is the effects of lighting on the visual amenity of residents and transport system users (such as adjacent road users). Consideration of the potential effect of lighting on astronomical observations is not relevant to the study area as the study area is not located within a dark sky park such as the Warrumbungle National Park Dark Sky Park.

AS4282 identifies environmental zones which are useful for categorising night-time landscape settings. The following assessment will use these environmental zones to describe the existing night-time visual condition and assign a sensitivity to these sites. The sensitivity levels describe the night-time visual conditions generally, without calculating or identifying the number of receptors. The assessment will describe the potential visual impact at night generally, by site.

### 3.5.8 Night-time visual sensitivity

The environmental zone (defined in AS4282) which best describes the existing night-time visual condition of the site has been selected. These zones are typical night-time settings and reflect the predominant light level of each enhancement site. Each environmental zone is assigned a level of sensitivity as described in Table 3-7.

TABLE 3-7: ENVIRONMENTAL ZONE SENSITIVITY – NIGHT-TIME

| | Environmental Zones (AS4282:2019) | |
|---|---|---|
| **Sensitivity level** | **Description** | **Examples** |
| Very high | A0: Intrinsically dark | The United Nations Educational, Scientific and Cultural Organisation (UNESCO) Starlight Reserve, International DarkSky Association (IDA) Dark Sky Parks<br>Major optical observatories<br>No road lighting – unless specifically required by the road controlling authority |
| High | A1: Dark | Relatively uninhabited rural areas<br>No road lighting – unless specifically required by the road controlling authority |
| Moderate | A2: Low district brightness | Sparsely inhabited rural and semi-rural areas |
| Low | A3: Medium district brightness | Suburban areas in towns and cities |
| Very low | A4: High district brightness areas | Town and city centres and other commercial areas, residential areas abutting commercial areas |

### 3.5.9 Night-time magnitude of change

The magnitude of change at night that would result from the proposed lighting of the proposal at night is then identified. These changes are described, as relevant, in terms of:

- Sky glow – which is the brightening of the night sky
- Glare – condition of vision in which there is discomfort or a reduction in ability to see
- Light spill – light emitted by a lighting installation that falls outside of the design area.

Table 3-8 lists the categories used to describe the visual magnitude of change at night.

TABLE 3-8: VISUAL MAGNITUDE OF CHANGE LEVELS – NIGHT-TIME

| Magnitude of change | Description |
|---|---|
| High | - Substantial change to the level of skyglow, glare or light spill expected, and / or<br>- The lighting of the proposal would transform the character of the surrounding setting at night, and / or<br>- The effect of lighting would be experienced over a large area |
| Moderate | - Considerable change to the level of skyglow, glare or light spill and / or<br>- The lighting of the proposal would noticeably contrast with the surrounding landscape at night and / or<br>- The effect of lighting would be experienced across a medium portion of the landscape. |
| Low | - Alteration to the level of skyglow, glare or light spill would be expected, and / or<br>- The lighting of the proposal would not contrast substantially with the surrounding landscape at night, and or<br>- The effect of lighting would be experienced across a small portion of the landscape. |
| Negligible | - Either the level of skyglow, glare and light spill is unchanged or<br>- If it is altered, the change is generally unlikely to be perceived by viewers or compatible with the existing or intended future use of the area. |

### 3.5.10 Night time visual impact levels

An assessment of night-time visual impact has been made by combining the visual sensitivity of the environmental zone with the night-time visual magnitude of change for each area generally and assigning an impact level (refer to Table 3-9).

TABLE 3-9: VISUAL IMPACT LEVELS – NIGHT TIME

| | | Sensitivity (AS4282:2019 Environmental Zone) | | | | |
|---|---|---|---|---|---|---|
| | | Very high (A0 Intrinsically dark) | High (A1 Dark) | Moderate (A2 Low district brightness) | Low (A3 Medium district brightness) | Very low (A4 High district brightness) |
| Magnitude of change | High | Very high | High | High-moderate | Moderate | Moderate-minor |
| | Moderate | High | High-moderate | Moderate | Moderate-minor | Minor |
| | Low | High-moderate | Moderate | Moderate-minor | Minor | Negligible |
| | Negligible | Negligible | Negligible | Negligible | Negligible | Negligible |

## 3.6 Mitigation measures

For those areas identified as likely to result in a visual impact, as a result of the proposal, methods for reducing these impacts have been considered and specific mitigation approaches recommended. These mitigation measures include landscape, urban design and rehabilitation treatments. At some locations they include adjustments in the location of proposed structure(s) for example. Objectives for the future design development have been developed to support these measures.

## 3.7 Cumulative and interactive effects

Incorporating cumulative effects into the impact assessment widens the assessment to include not only direct effects, but also collective effects.

Cumulative effects of projects can indicate that the combination of effects created by multiple projects may be greater than the sum of the individual effects. Cumulative impacts between projects will be addressed based on assumptions about the likely implementation of proposed projects within neighbouring areas. These assumptions are described in Chapter 27 of the EIS.

When considering cumulative landscape impacts, some relevant factors are the:

- Similarity of the type of landscape impacts with other proposals
- Likelihood of sequential use or availability of alternative open space, footpaths etc.
- Likelihood of there being a combined changes to local accessibility and permeability.

When considering cumulative visual impacts, some relevant factors are the:

- Similarity to the proposal in scale and form
- Likelihood of there being a combined visibility and / or the
- Likelihood of sequential visibility.

The cumulative impact of the identified projects have been generally described in section 6 of this technical paper.

# 4. Existing environment

The proposal generally follows the existing Main South line that runs between Albury and Sydney, through the Riverina region of NSW. This includes enhancement sites between the Murray River bridge in Albury to the Billabong Creek north-east of Illabo, passing through the Albury, Greater Hume, Lockhart, Wagga Wagga and Junee local government areas (LGAs).

The Riverina region of NSW is generally an agricultural area, characterised by flat, low-lying rural plains associated with the catchments of the Murray and Murrumbidgee rivers and their tributaries including Sandy Creek and Billabong creeks.

The proposal is located in the southern part of the NSW South Western Slopes bioregion, a broad area with natural features and large-scale geophysical patterns including an extensive area of foothills and isolated ranges of Great Dividing Range. The South Western Slopes bioregion extends between Cowra, southern NSW and into western Victoria. Within this broad bioregion, the proposal is located at the boundary of the 'upper slopes' and 'lower slopes' subregions. The upper slopes subregion is characterised by steep, hilly and undulating ranges and granite basins, with open forests and woodlands, located generally in the vicinity of Albury, The Rock, Uranquinty, Wagga Wagga and Junee. The lower slopes subregion is characterised by undulating and hilly ranges and isolated peaks set in wide valleys at the apices of the Riverina alluvial fans, generally located in the vicinity of Culcairn, Henty and Yerong Creek, as well as between Bomen and Harefield.

The proposal would be located within and along the existing rail corridor. The Main South line operates single stacked freight trains about 1,800 metres long, up to two services a day in each direction between Sydney and Melbourne. The proposal site is located within the regional cities of Albury and Wagga Wagga, and several regional towns including Culcairn, Henty, Yerong Creek, The Rock, Uranquinty, Bomen, Junee and Illabo. The existing rail corridor has been in operation since the late nineteenth century, and many of the existing stations are heritage listed, including Albury, Culcairn, Henty, The Rock, Wagga Wagga, Bomen and Junee stations. The stations at Yerong Creek, Bomen, Harefield and Illabo stations are no longer used for passenger services.

There are several major highways in the study area including the Hume, Riverina, Olympic and Sturt highways. The existing rail alignment is aligned generally parallel to the Hume Highway between Albury and the intersection with Olympic Highway, north of Table Top, the Olympic Highway to Wagga Wagga, Byrnes Road between Bomen and Junee, and the Olympic Highway between Junee and Illabo. The existing rail alignment intersects the road network in numerous locations, including rail bridges, underpasses and level crossings, various highways, public roads and private roads.

The existing rail corridor has a locally modified landform and is largely cleared of native vegetation. The corridor landscape is generally grassland with a few scattered trees and some groups of trees on adjacent properties. The proposal does not pass through or near to any National Parks or State forests. However, there are recreational areas at The Rock Nature Reserve, south-west of The Rock, which includes trails and a scenic lookout, and at the Doodle Comer Swamp Nature Reserve, southwest of Henty, which includes swamp and wetland areas, which includes trails and waterbird watching facilities.

# 5. Impact assessment

## 5.1 Potential sources of landscape and visual impact

There would be a range of typical activities and built elements that would be required to construct and operate the proposal. The main activities and built elements likely to cause a landscape or visual impact are described in the following section.

### 5.1.1 Construction

Construction in each area would generally involve the following activities:

- Site establishment and enabling works
  - Vegetation clearing and earthworks
  - Temporary site fencing and / or hoarding
  - Construction support infrastructure such as site offices, compounds and workshops
  - Utility relocation works
  - Delivery and temporary stockpiling of bulk materials
- Transportation of equipment and materials
- Rail line construction works (track slewing, lowering and new track construction)
  - Earthworks and drainage works (including culvert modification or replacement)
  - Temporary stockpiles and spoil mounds
  - Track formation works, including placement of ballast, sleepers and rail tracks and tamping
  - Installation of signalling and communication infrastructure
- Station precinct works and pedestrian bridges
  - Transportation and installation of pre-cast elements
  - Construction of the new bridges foundation, retaining walls, bridge deck, barriers and safety screens, and finishing works
  - Construction of road bridges, roadworks and level crossings, and associated traffic management and temporary traffic diversions where required
  - Demolition or removal of existing structures and redundant infrastructure
  - Lay and compact base course layers and pavements
  - Construction of new structures, including earthworks, footings and assembly of precast concrete elements
  - Construction of new road pavements, line-marking, installation of road furniture and street lights (where required)
  - Install active crossing equipment, road signs, road markings, fencing as required
- Testing and commissioning of the rail line and communications/signalling systems

- Finishing works
    - Demobilise or relocate construction compounds and facilities
    - Remove all temporary spoil, materials, waste and redundant structures from the construction footprint
    - Decommission all temporary work site signs
    - Remove temporary fencing
    - Establish permanent fencing
    - Decommission site access roads that are no longer required, including reinstatement of topsoil and vegetation, where required
    - Restoration of disturbed areas, as required, including revegetation and landscaping, where required.

The proposal would include the use of large machinery and equipment such as excavators, graders, cranes, piling rigs and scaffolding. Construction compounds would also be established, including site offices and amenities, and storage of construction plant and equipment.

It has been assumed that all vegetation within the construction footprint would be removed.

Construction would generally occur during the following times:

- Monday to Friday: 6:00am to 6:00pm;
- Saturday: 6:00am to 6:00pm (concluding at 1pm every second weekend); and
- Sundays: 6:00am to 6:00pm (not occurring on every second Sunday)
- Public holidays: no work.

Works that would be undertaken outside of the above hours or during 24-hour rail possessions include delivery of oversized plant or structures where required, emergency work, large concrete pours for new bridges, girder/bridge deck installation at selected locations, and utility works (such as connections) to minimise disruption. Some works associated with connections/interactions with existing rail lines may also be carried out during scheduled rail corridor possession periods, for example, connecting tracks, abutment/pier works and some finishing works.

Work undertaken outside of the Interim Construction Noise Guideline (DECC, 2009) standard hours (7:00am to 6:00pm Mondays to Fridays, inclusive; 8:00am to 1:00pm Saturdays; and at no time on Sundays or public holidays) would be undertaken in accordance with the Inland Rail NSW Construction Noise and Vibration Management Framework.

### 5.1.2 Operations

The key components of the proposal during operation would include:

- Operation of freight trains up to 1,800 metres in length, carrying double-stacked containers up to 6.5 metres high, operating 24 hours per day, up to 20 trains per day by 2040
- Permanent way including ballast corridor and tracks
- Trackside structures including signal gantries
- Embankments and abutments
- Retaining walls and potential noise wall treatments (to be confirmed during detailed design)
- Bridges, including road over rail bridges, rail over road bridges, and shared pedestrian bridges

- River and creek bridges
- Culverts and drainage infrastructure
- Level crossings, including passive or active controls
- Fencing
- Lighting infrastructure, including at level crossings and bridges
- Vegetation and rehabilitation to stabilise areas within the construction footprint.

While there would be landscape and urban design and rehabilitation works developed, this assessment has assumed basic landscape treatments rather than the full suite of urban design and landscape opportunities that exist for the project. As such, this assessment has not relied upon new vegetation for screening and improvements to the visual character of the proposal.

Any proposed vegetation would take time to establish and any effect on visibility and landscape character would occur over time and vary with local climatic conditions. Further development of the landscape, urban design and rehabilitation strategies is provided in section 7 of this technical paper.

## 5.2 Albury

This section assesses the proposal in the Albury precinct, including a review of the local planning context for the Albury City Council area, key features of the proposal at each enhancement site, and potential landscape and visual impacts associated with the proposal during construction and operation, day and night. The assessment has been organised, from south to north as follows:

- Murray River bridge
- Albury Station and surrounds, including:
  - Albury Station pedestrian bridge
  - Albury Yard clearances
  - Riverina Highway bridge
- Billy Hughes bridge
- Tabletop Yard clearances.

A summary of the landscape and visual impacts is provided at the end of this section (refer section 5.2.6).

### 5.2.1 Local Planning Context

The Albury precinct is located in the Albury City Council local government area. The following local planning instruments and strategies provide relevant landscape character and visual amenity policy and guidance for this area.

- Albury City Local Strategic Planning Statement, 2020
- Albury Local Environmental Plan 2010
- Albury Development Control Plan 2010
- Albury CBD Master Plan, 2009
- Borella Road and Riverina Highway Corridor Strategy, 2020
- Murray River Experience Master Plan, 2007
- NEXUS Industrial Precinct structure plan, 2010.

These documents have been summarised in the following sections.

#### *Albury City Local Strategic Planning Statement*

Albury City Local Strategic Planning Statement (LSPS) (Albury City Council, 2020) is intended to guide the growth of Albury over the next 20 years. It sets the land use framework for Albury, identifying planning priorities and future strategic planning activities, in the form of studies and strategies, to guide future development. This includes a review of planning controls '*to ensure they protect and enhance the values and characteristics that matter most to our community*'.

The proposed enhancement sites are located in the urban area of Albury, including at the Murray River and town centre (refer Figure 5-1). Planning priorities that relate to the enhancement site locations include:

- *Priority 6: Vibrant CBDs and strong local centres:*
  - *6.10 Work with Transport for NSW on implementing the Movement and Place Framework for our CBDs, recognising the important 'place' role streets have in the life, economy and enjoyment of our City.*

- *6.12 Consider efficient local freight and loading access in our CBDs whilst protecting urban amenity.*

- *Priority 8: Respond to our unique landscape setting:*
  - *8.2 Maintain Albury's rural city character through suitable relationships and interface with nature, farmland, Lake Hume and the Murray River and generally limiting development on hilltops.*
  - *8.3 Respect and maintain key views, vistas, vantage points and aesthetics afforded by our landscape.*
  - *8.6 Capitalise on opportunities through the Murray River Experience project to better connect the CBD and Murray River and provide unique riverside open space experiences.*

The Billy Hughes bridge site is located in the '*Nexus Industrial Precinct'* (refer Figure 5-1), a 450 hectare industrial zone 10 kilometres north of the Albury CBD, '*strategically located adjacent to the Melbourne-Sydney railway and the Hume Freeway corridor'*, supporting '*major development opportunities in various sectors such as transport and logistics and manufacturing'*. The Table Top Yard site is located within the existing rail corridor, beside the 'rural living / urban fringe' zone, west of the Hume Highway (refer to Figure 5-1).

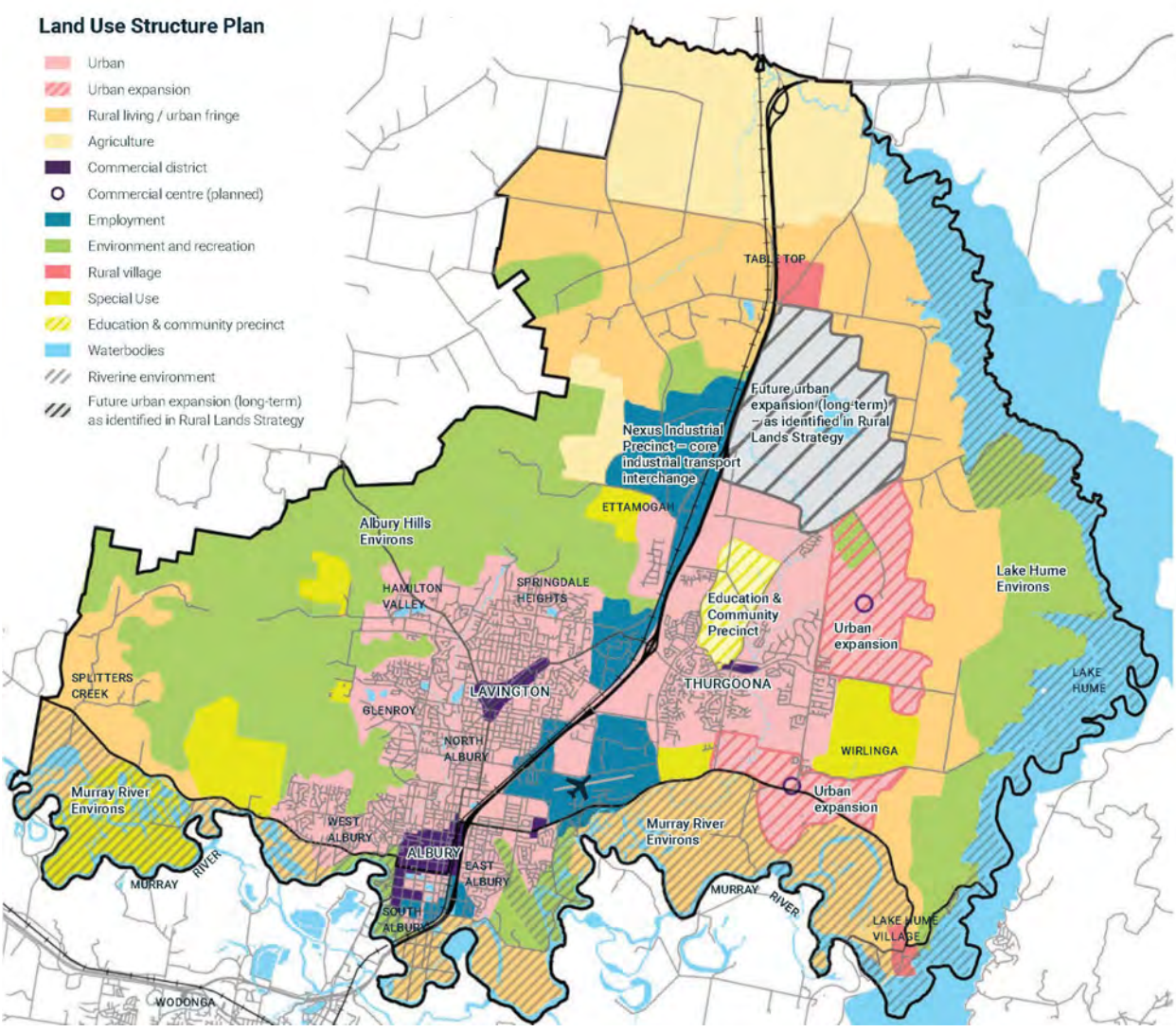


FIGURE 5-1 ALBURY LAND USE STRUCTURE PLAN

### *Albury Local Environmental Plan 2010*

The Albury Local Environmental Plan (LEP) aims to '*promote sustainable urban development'*, ensuring to '*promote a city for the people, with a high level of social and physical amenity*' (Clause 1.2.2, Albury City Council, 2010b).

The enhancement sites are located mostly within the SP2 Infrastructure zone, which aims to '*provide for infrastructure and related uses'* (Land Use Table, SP2). The northern side of the Murray River bridge enhancement site is zoned RE1 Public Recreation and RU2 Rural Landscape, which aim to '*provide public access to the foreshore of the Murray River'* (Land Use Table, RE1) and '*maintain the rural landscape character of the land*' (Land Use Table, RU2). The western side of the Albury Station Yard clearances and the Riverina Highway bridge enhancement sites contain land zoned B4 Mixed Use.

LEP heritage items and heritage conservation areas within or near the enhancement sites include (south to north):

- Albury rail bridge over Murray River (local and State heritage register item)
- Albury Railway Heritage Conservation Area (local)
- Albury Railway Station (local and State heritage register item), including the station platform buildings, Station Master's residence, signal box, footbridge, transhipment shed, railway workers hut, railway turntable
- Kenilworth Street Heritage Conservation Area (local)
- Dean Street Conservation Area (local)
- South Albury Heritage Conservation Area (local), south west of the station
- Bunge Flour Mill at 570 Young Street (demolished)
- Houses at 532–540 Young Street
- Hanel Street Heritage Conservation Area (local).

The LEP aims to conserve the heritage significance of heritage items, including their '*settings and views*' (Clause 5.10).

The LEP does not have a code or development standard relating to rail infrastructure.

### *Albury Development Control Plan 2010*

Albury Development Control Plan (DCP) supports the Albury LEP by providing additional objectives and controls for administering specific types of development.

Part 5 refers to the preservation of trees, as they contribute *'to the character and scenic values of streetscapes, landscapes or urban and rural environments'* (City of Albury Council, 2010a, Section 5.1). An objective of Part 5 is to '*conserve and enhance the existing aesthetic character and public amenity of Albury'* (Section 5.1). The protection of native vegetation along the Murray River is also identified as a priority (Section 5.5).

Part 7 (Heritage Conservation) considers Albury to be an '*exceptionally attractive city'*, with a '*very beautiful natural setting'* of the Murray River surrounded by hills and low mountain ranges (Section 7.1). The Albury Station and Riverina Highway bridge enhancement sites are within the Albury Railway Heritage Conservation Area. '*Two prominent features of the precinct are the tower of the Railway Station and the silos of Bunge Mill'* (Section 7.5.13).

The relevant objectives for this area include:

- *'To conserve and enhance the existing built forms by ensuring any new development is in scale and character with adjacent heritage items.*
- *To retain and enhance the vista and streetscape values of the Railway Station by restricting future development between that building and the former highway road reserve'* (Section 7.5.13).

The eastern end of the Albury Station footbridge also overlaps with the Kenilworth Street Heritage Conservation Area, which is valued '*for its landscape values and for the group of houses (347-381) located on the south side of the street'* (Section 7.5.9). Relevant objectives for this area include:

- '*To conserve and enhance the existing residential streetscapes by ensuring new development respects the existing low scale domestic character and complements architectural features of adjoining buildings.*
- *To minimise the impact of future proposed road works on the remainder of the area'* (Section 7.5.9).

Part 11, Development in the Commercial Zones, including Development in the B4 Mixed use Zones aims to '*encourage and promote a consistent streetscape in terms of building bulk, height, setbacks, street furniture, signage and building'* (Section 11.7.12), and refer to the Albury CBD Master Plan for further detail.

### *Albury CBD Master Plan*

The Albury CBD Master Plan (Allen Jack + Cottier, 2009) sets out the vision and characteristics of the CBD, providing specific planning controls and guidelines for future development.

The Albury Station is located in the 'Railway Precinct' (refer to Figure 5-2), which is comprised of two parts:

1. Railway Precinct South - Tourist Centre, relevant objectives include:

- *'Create a new entry point into this precinct from Atkins Street for tourists exiting from the freeway*
- *Connect the new entry point to the extension of Smollett Street connecting this precinct to the CBD. This new street will also provide an address to the former Station Masters House'*
- New *'landmark or 'gateway' building…permitted to have a maximum building height of 12 storeys at the corner of Hume Street and Young Street* (Section 3.7).

2. Railway Precinct North - Mill Park, Business Park, relevant objectives include:

- *'Create new streets to increase the permeability of the Railway Precinct and connect the Railway Precinct to the CBD. These new streets will also provide street frontage and address to new buildings.*
- *Screen on grade parking areas with trees*
- *Maintain the vista from the pedestrian footbridge to Dean Street'* (Section 3.7).

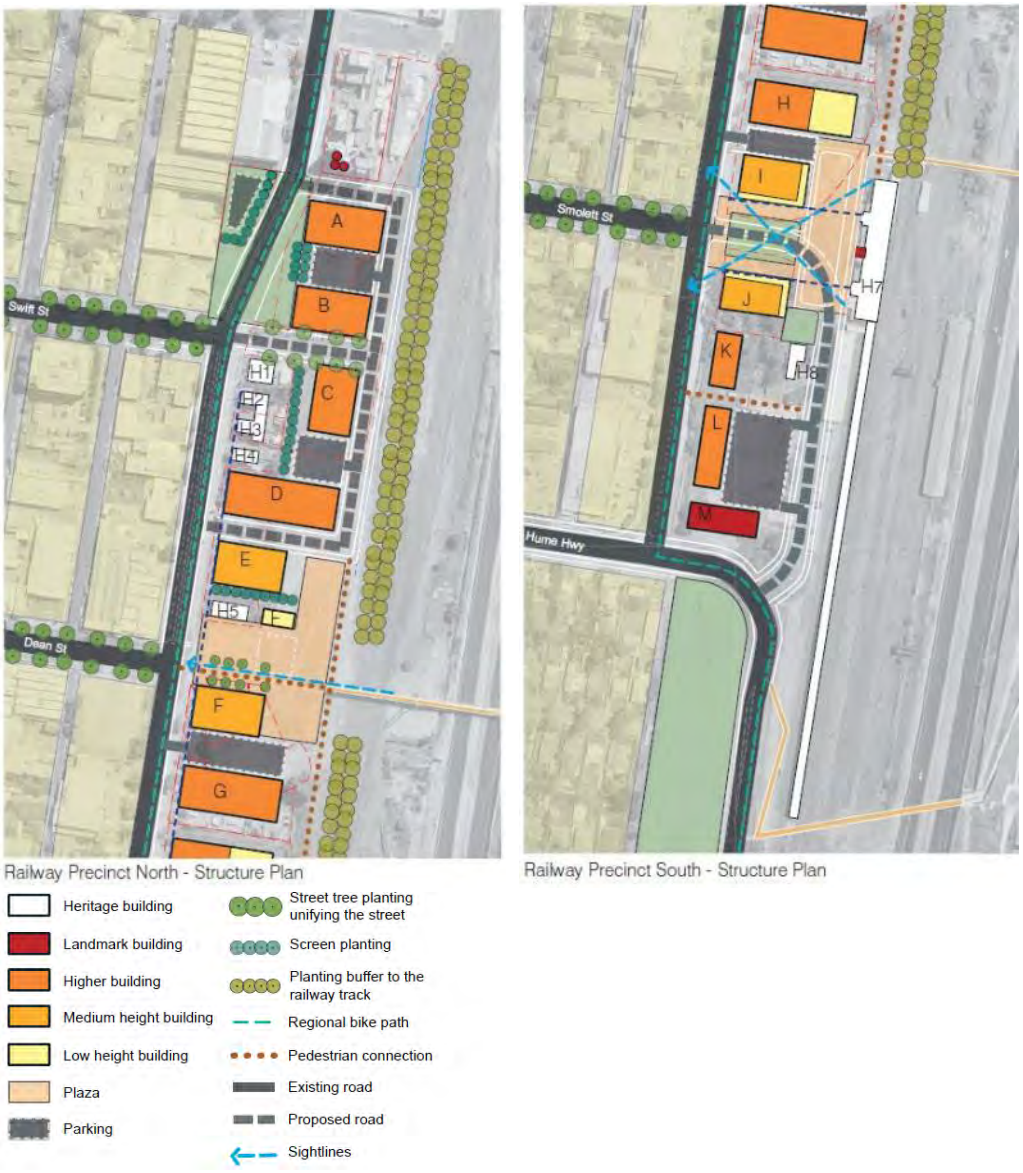


FIGURE 5-2 RAILWAY PRECINCT –STRUCTURE PLAN FOR NORTH AND SOUTH AREAS (SOURCE: CITY OF ALBURY COUNCIL, 2010A, PART 11, FIGURE 11.2)

### *Murray River Experience Master Plan*

*Murray River Experience Master Plan* (Urban Initiatives, 2007) provides a comprehensive framework for the future development of open space areas along the Murray River. The Murray River is identified as '*the City's most outstanding attribute, but one that has not always been appreciated or integrated into the town planning and way of life of the City's residents*'. This document aims facilitate the improvement of Albury's relationship with the river setting over the next 25 years.

Protecting and improving '*viewing points to and from the Murray'* is identified as one of the key objectives. The document also provides detailed recommendations for existing parks managed by Albury City Council, including Central Albury Riverside Parks such as Hovell Tree Park to the west of the proposal, and Doctors Point Picnic Area, to the east of the proposal. Although the proposal and adjacent (privately owned) land is not located in the master plan area, the area north west of the Murray River bridge site is identified for '*potential pocket park development at the Albury highway entrance*' (refer to Figure 5-3).

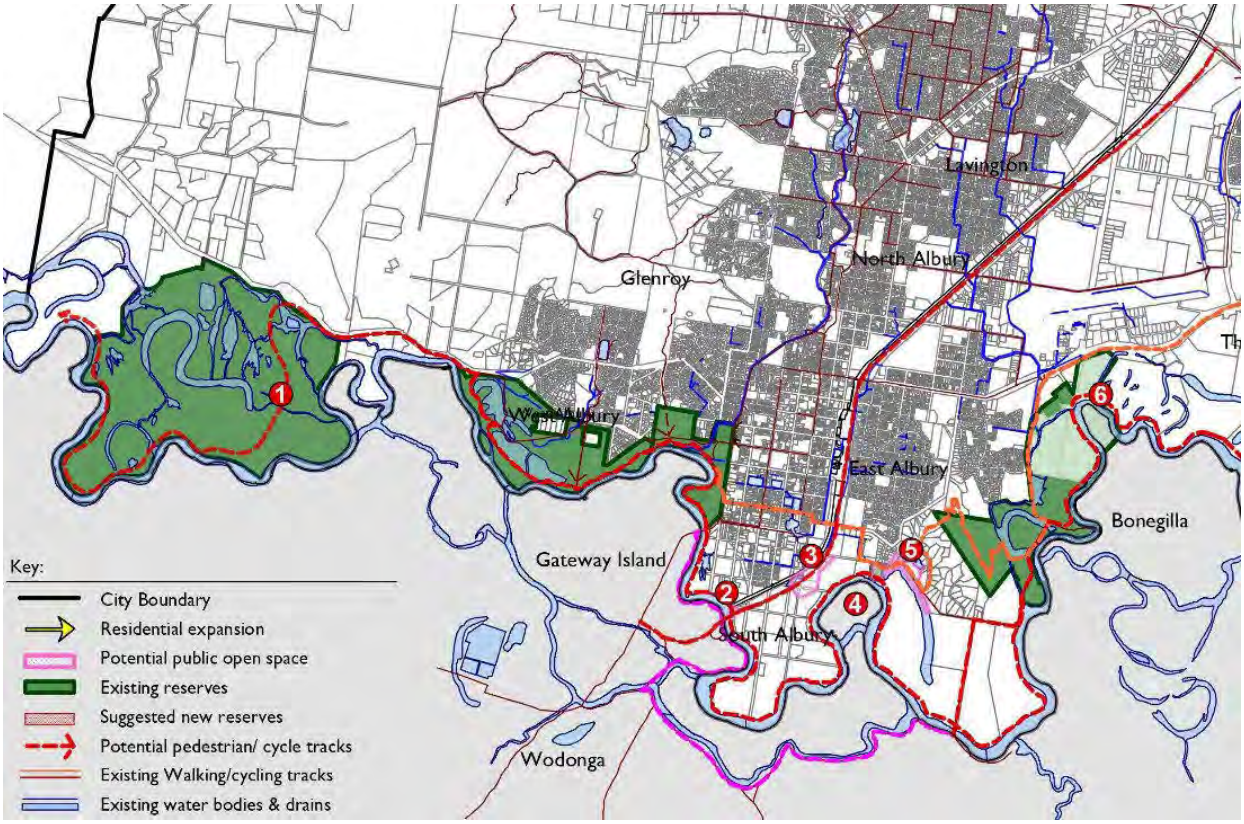


FIGURE 5-3 MURRAY RIVER EXPERIENCE MASTER PLAN – KEY OPPORTUNITIES FOR NEW PUBLIC OPEN SPACE AND PEDESTRIAN/CYCLE PATHS (SOURCE: CITY OF ALBURY 2007)

### *NEXUS Industrial Precinct*

NEXUS is a 450ha site located 10 km north of Albury's CBD, zoned to support large or heavy industrial development. Spanning the Hume Freeway and the main Melbourne-Sydney rail corridor and incorporating an intermodal hub (including Ettamogah Rail Hub), NEXUS is attracting development of premises that require transport infrastructure, including road and rail freight services. The Billy Hughes bridge enhancement site is located on the eastern edge of this precinct, where the rail corridor passes under the bridge.

## 5.2.2 Murray River bridge

### 5.2.2.1 Description of the proposal

The proposal would be located within the existing rail corridor and include modifications to the existing Murray River bridge, including:

- Raising the height of the existing arches (sway braces) by about two metres to accommodate taller trains
- Reinforcing the existing bridge using similar materials and style as the existing arches
- Installation of a walkway with handrail along bridge for maintenance purposes.

The bridge design would be of similar materials and style as the existing arches.

During construction there would be:

- Temporary compounds and laydown in the rail corridor
- A temporary works platform
- Construction access via Townsend Street and Olive Street.

Further details of construction are contained in Chapter 8 and operational elements in Chapter 9 of the EIS.

#### 5.2.2.2 Assessment of landscape impact

The following is an assessment of the landscape impact of the proposal on the Murray River plains landscape character area, which includes the Murray River bridge site and surrounding areas.

*Murray River plains*

Existing landscape character: This character of this area is associated with the Murray River floodplain, south of Albury. This landscape is generally flat along the Murray River, rising slightly to the north east towards the suburban area of South Albury. The land either side of the Murray River has historically been cleared and modified for pastoral farming purposes, and nearing Albury, properties and lot sizes become smaller in size, with small acreage properties and rural lifestyle blocks overlooking the Murray River. The vegetation alongside the Murray River contains a mixture of mature tree and shrub species, with patches of River Red Gum in places. The Murray River in this location has two major bridge crossings, including the dual carriageway bridge crossing at the Hume Highway and the adjacent rail corridor, consisting of a State heritage listed wrought iron lattice railway bridge, that would be subject to works as a part of this proposal. This bridge has a limited contribution to the character of this area, being largely out of view from surrounding areas. The vegetation along the creek provides some amenity to the surrounding area, however, public access to and the visual connection with Murray River in this area is limited.

Landscape sensitivity: This landscape includes the riverfront areas of the Murray River, which are identified as having scenic and recreational values in the Albury LEP 2010 (Clause W2 and RE1 zones). While this area does not include any open space or public access to the Murray River, this landscape would be appreciated by larger numbers of people travelling along the Hume Highway including tourists and visitors to the region. Overall, this landscape character area is of **local landscape sensitivity**.

Landscape impact during construction: The proposal would be constructed within the existing rail corridor. While there would be some trimming of trees, the work would not require the removal of the mature trees and shrubs alongside the Murray River. Heavy vehicle access to the rail corridor would occur near the Olive Street, near several residences. There would be some light grading of Townsend Street which may result in minor disruptions to property access and the amenity for adjoining residential properties and road users in this location for a short duration. While the construction activity would alter the character of a localised part of this landscape, there would be a low magnitude of change and a **minor adverse landscape impact**.

Landscape impact during operation: Murray River bridge would be reinstated with new top bracing arches in a similar style and materials to the existing, and raised to a higher level to accommodate double stacked freight trains. While the height and frequency of freight trains would increase along the rail corridor, the changes would be generally in character with the existing rail corridor and not alter the use or visual amenity of the landscape. Overall, there would be a low magnitude of change to this landscape, and **minor adverse landscape impact** during operation.

FIGURE 5-4 MURRAY RIVER PLAINS CHARACTER IMAGES

#### 5.2.2.3 Assessment of daytime visual assessment

*Visual catchment of the proposal*

The visual catchment of the proposal is limited by the dense existing vegetation along the Murray River, and surrounding the site, which enclose views to the southwest and north. The site is located below the level of the Hume Highway, which further obstructs views to the southeast. There are some residences to the north, set back from the bridge, and set within larger properties with mature trees and gardens, west of Townsend Street. There are also residential properties to the north in the vicinity of Abercorn Street, with rear fences and gardens that screen views to the existing rail corridor and highway beyond.

*Representative viewpoint assessment*

The following viewing location was selected as representative of the range of views to the proposal:

- Viewpoint 1: Views south from Townsend Street
- Viewpoint 2: Views south west from the Hume Highway

Figure 5-5 identifies the location of these viewpoints.


FIGURE 5-5 VIEWPOINT LOCATION PLAN – MURRAY RIVER BRIDGE ENHANCEMENT SITE

The following section summarises the daytime visual impact identified in the representative viewpoint assessment.

Viewpoint 1: Views south from Townsend Street

FIGURE 5-6 VIEWPOINT 1A: VIEW SOUTH FROM TOWNSEND STREET, NEAR THE HIGHWAY

FIGURE 5-7 VIEWPOINT 1B: VIEW SOUTH FROM TOWNSEND STREET, NEAR RESIDENTIAL PROPERTY

Existing view: This section of Townsend Street includes a narrow, unsealed road, providing access between Abercorn Street and the rail corridor, in South Albury. The Murray River bridge is visible in close range views amongst the dense vegetation associated with the Murray River. The bridge is heritage listed on the State Heritage Register (SHR), the Albury LEP 2010 and Section 170 heritage register. It is an attractive bridge with iron bracing and arches, however, it is not prominent in views from this area. The rail corridor is slightly elevated on structure in this view. There is chainmesh fencing and gates along the rail corridor. Vehicles travelling along the Hume Highway can be glimpsed in the background of view.

The view to the Murray River bridge and rail corridor reduces as the distance increases and there is intervening vegetation. From Townsend Street and the nearest residential property, the rail corridor and existing bridge are screened from view.

Visual sensitivity: This view would be seen from a small number of vehicles travelling along a local access road, beyond the entry to the residential property. The Murray River bridge is a local visual feature with an attractive heritage character; however, the character of its setting is influenced by the character of the existing rail uses and adjacent highway. Overall, these views are of **neighbourhood visual sensitivity.**

Visual impact during construction: Construction work would occur within the existing rail corridor, in the middle to background of this view. The removal of ground cover vegetation and trimming of trees overhanging the rail corridor may be seen in this view. Townsend Street would be used for light vehicle access to the site, requiring minor grading works. A construction laydown area and rail access maintenance access road would be installed within the rail corridor along the north western side of the track and would be seen through the trees in the middle ground of the view from the southern end of Townsend Street. Works to modify the Murray River bridge would also be visible, including works to remove and replace the top bracing arches using large construction equipment such as cranes. Due to the limited visibility of works at this site and screening effect of the existing vegetation along the river and rail corridor, there would be a low magnitude of change. This would result in a **negligible visual impact** during construction.

Visual impact during operation: The existing bridge would be modified to achieve sufficient vertical clearance for the taller freight trains, raising the truss height by about two metres. New top bracing arches would be placed on raised stanchions and sensitively replaced in a similar style, colour and material, to complement the existing heritage listed elements. The existing trees would be retained and the general appearance of the bridge structure would be consistent in character with the current view. The presence of trains would be increased in this view with additional freight trains seen travelling along the rail corridor and across the bridge. These trains would be taller, so that they would be more prominent in the view from the southern end of Townsend Street. These trains would be seen amongst the existing vegetation and in the context of the highway. Overall, there would be a low magnitude of change during operation, and a **negligible visual impact** during operation.

Viewpoint 2: Views south west from the Hume Highway

FIGURE 5-8 VIEWPOINT 2: VIEW SOUTH WEST FROM THE HUME HIGHWAY

Existing view: In this view from the southbound lane of the Hume Highway, the upper portion of the arch can be seen, glimpsed rising above the level of the adjacent highway and amongst the trees. In this sequence of views, there the bridge is not prominent in the view, located below the canopy of the adjacent trees and with only a part of the bridge seen at any time. The Murray River bridge is heritage listed on the SHR, the Albury LEP 2010 and Section 170 heritage register. While this bridge is described as having '*an imposing structure'* in this landscape (OEH, 2013), it is not prominent in views from the highway. From this location there would be trains seen intermittently aligned parallel to the highway and at a level below the road, so that only the upper portion of these trains would be visible.

Visual sensitivity: This view is glimpsed from a large number of vehicles travelling at high speed along the Hume Highway. The Murray River bridge is not a prominent visual feature due to its limited visibility from the highway. The bridge has an attractive heritage character; however, the character of its setting is influenced by the character of the existing rail uses and adjacent highway. Overall, these views are of **local visual sensitivity.**

Visual impact during construction: Work to modify the Murray River bridge would be seen in the middle ground of this view, including works to remove and replace the top bracing arches using large construction equipment such as cranes. The work would be located on a lower level so that the ground level work would be screened by the highway. The upper portion of the works including cranes and taller construction equipment would be visible rising above the site but would not rise prominently above the backdrop of existing vegetation. Due to the limited visibility of works, there would be a low magnitude of change in this view and a **minor adverse visual impact** during construction.

Visual impact during operation: The existing bridge structure would be modified with the arches raised about two metres higher than the existing structure. The new top bracing arches would be placed on raised stanchions and replaced with structures of a similar heritage style, colour and material, to complement the existing heritage listed elements. The existing trees would be retained and the general appearance of the bridge structure would be consistent in character

with the current view. There would be additional freight trains seen travelling along the rail corridor and across the bridge. These trains would be taller, and therefore more prominent in this view. These trains would be seen amongst the existing vegetation, in the context of the highway with large numbers of fast moving vehicles in the foreground. The portion of the trains visible above the highway would be increased but these trains would not rise above the canopy of the surrounding vegetation. Overall, there would be a low magnitude of change during operation, and a **minor adverse visual impact** during operation.

#### 5.2.2.4 Assessment of night-time visual impact

Existing night time conditions and visual sensitivity at night: At night, the areas in the vicinity of Murray River bridge would have multiple light sources associated with residential and light industrial areas surrounding the rail corridor. The headlights from vehicles travelling along the Hume Highway, and the headlights from trains travelling along the existing rail corridor at night, create a more intensely lit area through this area. The vegetation between the rail corridor and the adjacent residential areas would screen these direct light sources. There would be a general sky glow above the highway and surrounding suburban areas of Albury and northern Wodonga. Overall, this landscape is an area of medium district brightness (A3) and has a **low visual sensitivity** at night.

Night time visual impact during construction: There would be night construction activity during rail possessions and during extended construction hours at this site. This work would include task lighting, construction vehicle headlights and lighting associated with site offices, storage and laydown areas. Any such lighting would be seen within the brightly lit setting of the Hume Highway and would be absorbed into the character of this area. There would not be any direct light spill on private properties, which are set back the proposed construction site. Overall, there would be a negligible magnitude of change to an area of low sensitivity at night, and a **negligible visual impact**.

Night time visual impact during operation: During operation, there would not be any permanent lighting along the rail corridor. However, the frequency of freight trains would increase, resulting in additional train headlights. As the rail corridor is aligned generally parallel to the Abercorn Street and the nearest residential properties there would be very low potential for these headlights to be directed into private residences. Any view towards the rail corridor and these additional train headlights would be seen in the context of the existing brightly lit highway with frequent moving vehicle headlights. Overall, there would be a negligible magnitude of change and a **negligible visual impact** expected at night.

### 5.2.3 Albury Station and surrounds

#### 5.2.3.1 Description of the proposal

The following enhancement sites are located within the Albury Station and surrounds:

- Albury Station pedestrian bridge
- Albury Station Yard clearances
- Riverina Highway bridge

The proposal would be located within the existing rail corridor and include the following elements:

- Albury Station pedestrian bridge – a new pedestrian bridge over the rail corridor (connecting to the existing Hume Highway bridge) including anti-throw screens and accessible ramps on both eastern and western side to Kenilworth Street and Railway Place
- Albury Station Yard clearances - Realignment of mainline and loop, gantry replacement and relocation at Albury Station
- Riverina Highway bridge - Track lowering of about 230 metres of the mainline under the Riverina Highway by up to 1.5 metres including retaining structures and associated drainage infrastructure.

The Albury Station pedestrian bridge design would aim to minimise the visual bulk of the structure and use colours that are sympathetic to the adjacent heritage listed buildings.

During construction there would be:

- Temporary compounds in the rail corridor and within parking areas (staff and customer)
- There would be crane pads within the rail corridor and adjacent car parking areas
- Construction access via Young Street, Atkins Street and Railway Parade.

Further details of construction are contained in Chapter 8 and operational elements in Chapter 9 of the EIS.

#### 5.2.3.2 Assessment of landscape impact

The study area in the vicinity of the Albury Station pedestrian bridge, Albury Station Yard clearances and Riverina Highway bridge enhancement sites includes following landscape character areas which may be impacted by this proposal:

- Albury Station heritage precinct
- The Scots School and adjacent commercial areas
- Hume Highway corridor.

The location of these areas is shown on Figure 5-9.

The following section includes an assessment of the landscape impact of the proposal on each of these character areas.

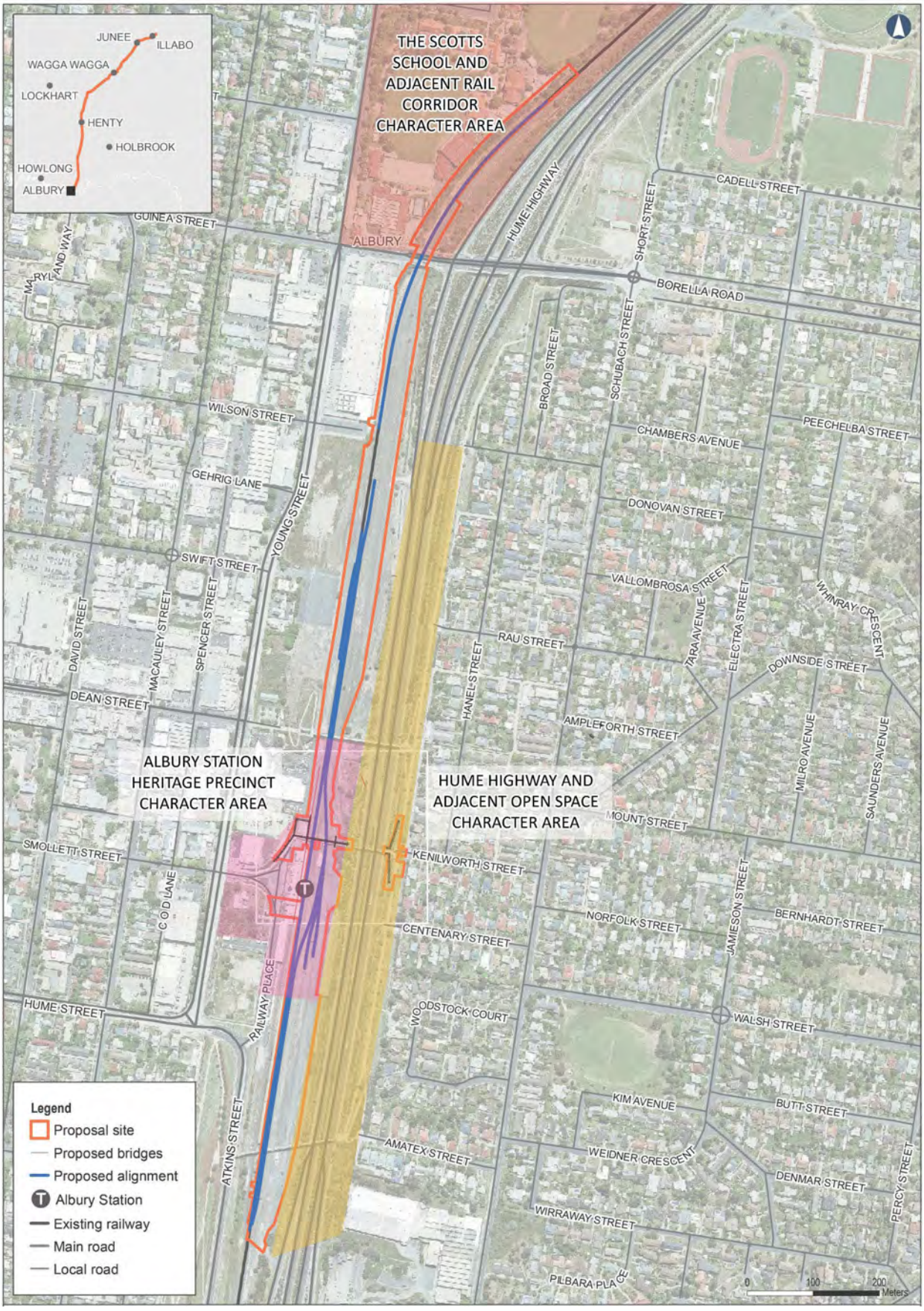


FIGURE 5-9 ALBURY STATION AND SURROUNDS LANDSCAPE CHARACTER AREAS

### *Albury Station heritage precinct*

Existing conditions: This landscape character area is centred on Albury Railway Station and includes the existing rail corridor and station buildings. Collectively, the built form in this precinct is of State heritage significance (also part of a heritage conservation area in Albury LEP 2010) and includes '*one of the most prominent station buildings in NSW*', with its '*landmark tower'* which provides a '*prominent element within the Albury townscape'* (OEH, 2008). The former Station Master's residence, railway barracks and 1885 signal box also have varying levels of aesthetic significance and '*contribute to the setting of the place'* (OEH, 2008). The '*vista from the pedestrian footbridge to Dean Street*' is an important feature in this precinct (Section 3.7, Allen Jack + Cottier, 2009).

Landscape sensitivity: This landscape character area has a concentration of heritage character buildings, landscape features. There are large numbers of people who transit through this precinct, with this area playing an important role as an entry to Albury. This is an area of **regional landscape sensitivity**.

Landscape impact during construction: Much of the construction activity would be located within the existing rail corridor. The prominence of the built features that are particularly distinctive, including the station buildings would continue to be prominent and their role in defining the character of this area undiminished. The existing pedestrian bridge, north of the station platforms and west of the Hume Highway would be demolished. While this structure is heritage listed, it does not substantially contribute to the aesthetic values of the station precinct. Much of the parking and bus interchange areas are located in the southern areas of the station precinct and would not be impacted by the works. The works would be located adjacent to an existing service area of the station and not obstruct the main pedestrian and vehicular approaches to the station. However, the access for construction vehicles would be via Railway Place and Smollet Street, which are the main approaches to Albury Station, reducing the level of comfort for pedestrians and increasing traffic for vehicles. The gardens which form the setting of the station buildings would be maintained and there would be limited vegetation removal required in the vicinity of the construction footprint.

Overall, the construction activity would alter the character of a localised part of this landscape, in an area at the periphery of the station. The works would contrast with the setting of the station, but not alter the landscape values of this area considerably. This would result in a low magnitude of change during construction and a **moderate adverse landscape impact**.

Landscape impact during operation: The increased frequency of trains with an increased height and length would reinforce the physical and visual division of the rail corridor. However, the new pedestrian bridge would continue to provide cross-corridor connectivity with enhanced accessibility due to the provision of ramps at the station and also at the north of the existing Hume Highway bridge. The character of the new bridge would be sympathetic to the heritage station buildings and seen within the context of other large scale contemporary bridges and rail corridor infrastructure. While the new pedestrian bridge and ramps connecting to Railway Place would have a larger footprint and presence in this precinct, the prominence of the main station buildings and function of the station as a main entry to Albury would be maintained. Overall, there would be a low magnitude of change and **moderate adverse landscape impact** on this precinct during operation.

FIGURE 5-10 ALBURY STATION HERITAGE PRECINCT CHARACTER IMAGES

### *The Scots School and adjacent rail corridor*

Landscape sensitivity: This landscape is generally experienced by students, staff and visitors to The Scots School and is predominantly a privately used and managed landscape. Within the school grounds there is a coherent landscape character with well-maintained gardens and sporting fields. The existing rail corridor has been cleared of vegetation and provides an abrupt and unattractive visual edge to the school. The visual influence of the existing trains along the rail corridor would

be experienced in the adjacent areas of the school, which are mainly vehicle access and buildings which face away from the rail corridor. Overall, this landscape is of **local landscape sensitivity**.

Landscape impact during construction: The proposal would be constructed within an existing rail corridor and would not require removal of any landscape features in The Scots School, such as mature trees or shrubs. While the construction activity, particularly the earthworks and construction of retaining walls along the western side of the track, near the school, would alter the character of a localised part of this landscape, the overall magnitude of change to this landscape would be negligible. This would result in a **negligible landscape impact**.

FIGURE 5-11 THE SCOTS SCHOOL AND ADJACENT RAIL CORRIDOR CHARACTER IMAGES

Landscape impact during operation: The more frequent trains, which are taller, would reinforce the visual edge and increase the presence of the rail corridor within the adjacent areas of the school. The trains would, however, be set below the level of the school grounds and would be partly screened from view by the cutting. These changes would be an increase in the intensity of the existing character of the rail corridor, the visual influence of these trains would be experienced in the adjacent areas of the school, which are mainly vehicle access and buildings which present blank facades to the rail corridor. Overall, there would be a negligible magnitude of change and a **negligible landscape impact** during operation.

### *Hume Highway and adjacent open space*

Existing conditions: The Hume Highway is a heavily trafficked road with multiple lanes of traffic, noise barriers where is crosses over the existing rail corridor and Hume Highway. This corridor provides a key gateway to Albury. The highway is separated from an area of linear open space and elevated residential areas to the north, by large noise barriers. The highway corridor is set in a cutting, below both the residential areas to the east and rail corridor to the west. The highway includes a mature roadside landscape in terraced gardens, and high quality noise walls. Several bridges provide visual landmarks along the route, and local pedestrian access across the corridor. These bridges have striking contemporary forms and this section of the highway corridor has a coherent character with a strong urban design character and palette of materials.

The linear open space to the east of the highway, includes a shared pathway which is a part of the Albury-Thurgoona Trail, a ten-kilometre trail extending along the eastern side of the Hume Highway, between Albury Station and Thurgoona Drive. This parkland includes shelters, seating areas, exercise and play equipment. The adjacent residential areas in East Albury, form part of the Kenilworth Street conservation area (Albury LEP 2010).

Figure 5-12 HUME HIGHWAY AND ADJACENT OPEN SPACE CHARACTER IMAGES

Landscape sensitivity: The Hume Highway is used by a large number of vehicles travelling at high speed. The pedestrian bridge, the Harold Mair Bridge (a pedestrian bridge) and adjacent linear open space provide permeability and connectivity for the local community, providing a direct connections into the centre of town, and also along the corridor, as well as recreational opportunities. Overall, this landscape character area is of **local landscape sensitivity**.

Landscape impact during construction: The footbridge and rail corridor works would be constructed within the existing rail corridor, separated from the Hume Highway, and would not require removal of any features in this landscape, such as mature trees or shrubs. The works to demolish and replace the existing pedestrian bridge between the highway bridge and Albury Station would temporarily reduce the accessibility and cross corridor connectivity of this area. There would also be some works undertaken within the linear open space to create an accessible ramp between the existing bridge and the shared path within the linear open space. This work may also have localised impacts upon the existing path and adjacent seating areas. Overall, there would be a moderate magnitude of change to this landscape and a **moderate adverse landscape impact**.

Landscape impact during operation: During operation the east west connectivity for pedestrians across the road corridor would be reinstated and improved by the provision of a ramp within the linear open space on the eastern side of the Hume Highway. Overall, there would be a low magnitude of change forming an improvement in the functioning of this landscape area and **minor beneficial landscape impact** during operation.

#### 5.2.3.3 Assessment of daytime visual impact

##### *Visual catchment of the proposal*

In the vicinity of Albury Station pedestrian bridge, views to the proposal (the visual catchment) would extend south to the station platforms and south west to Railway Place and areas to the west of the main station building. The visual catchment would extend to the commercial areas between the rail corridor and Young Street, and north to the Harold Mair Bridge where there would be views towards the proposed pedestrian bridge.

The visual catchment of the works would extend east to parts of the Hume Highway and to localised areas within the adjacent linear open space. There would also be views to the corridor works, north of the station, from areas on the south eastern boundary of The Scots School and in views from the Riverina Highway bridge.

Figure 5-13 identifies the visual catchment of the proposed new pedestrian bridge.


FIGURE 5-13 VISUAL CATCHMENT PLAN – ALBURY STATION PEDESTRIAN BRIDGE

### *Representative viewpoint assessment*

The following viewing locations were selected as representative of the range of views to the proposal:

- Viewpoint 3: View south along the open space east of the Hume Highway Bridge
- Viewpoint 4: Views from Albury Station
- Viewpoint 5: View south from the Harold Mair Bridge
- Viewpoint 6: View north from the Riverina Highway bridge

Figure 5-14 identifies the location of these viewpoints.

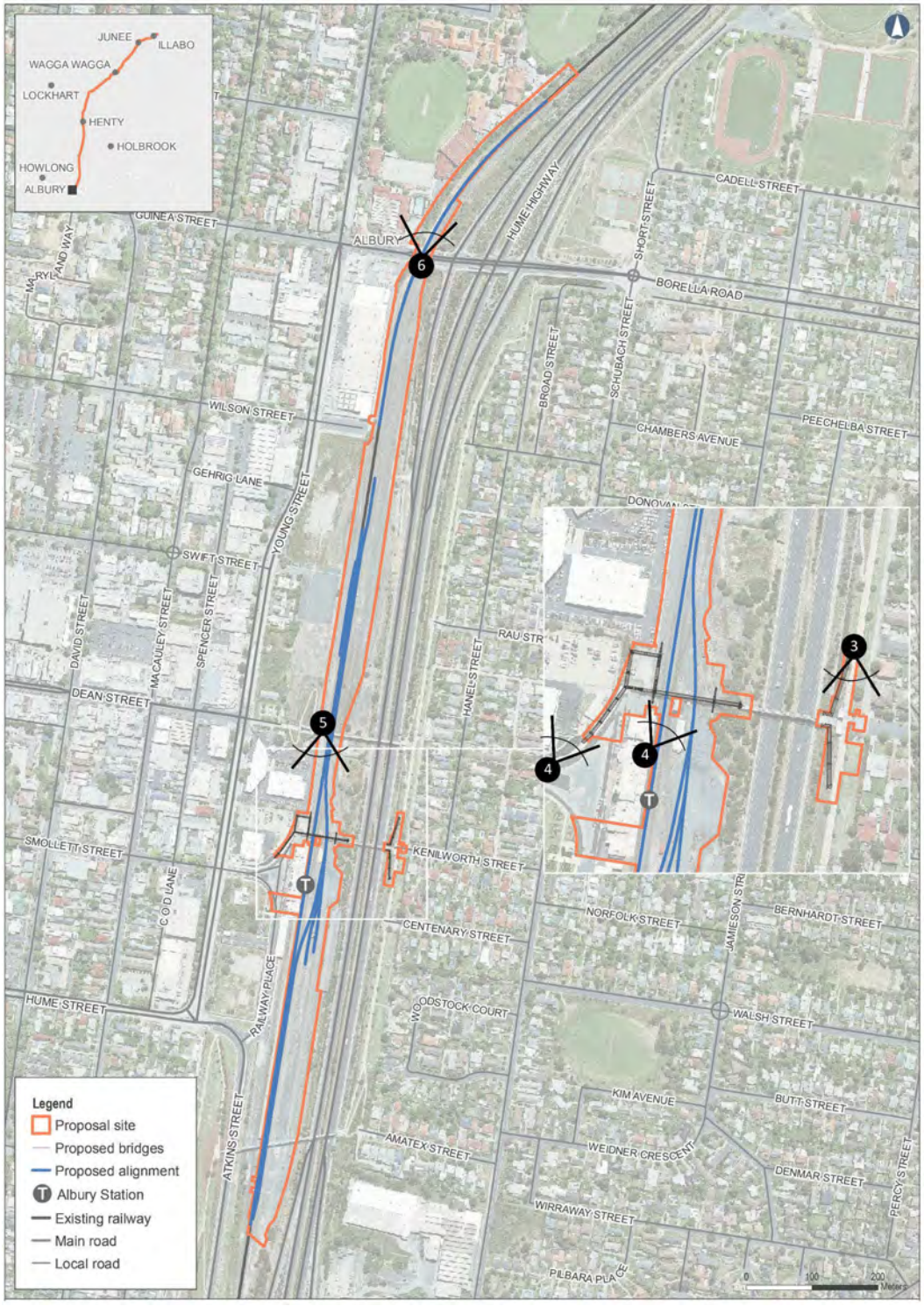


FIGURE 5-14 VIEWPOINT LOCATION PLAN – ALBURY STATION AND SURROUNDS

The following section summarises the daytime visual impact identified in the representative viewpoint assessment.

Viewpoint 3: View south along the open space east of the Hume Highway Bridge

Figure 5-15 VIEWPOINT 3: VIEW SOUTH ALONG THE OPEN SPACE EAST OF THE HUME HIGHWAY BRIDGE

Existing view: This view along the Albury–Thurgoona Trail and linear open space adjacent to the eastern entrance to the Albury Station pedestrian bridge (right of view). There are two shade structures and seating at the base of a set of stairs (right of view). The planting and vegetation along the embankment screen the noise barriers on the top of an embankment which separates the open space from the Hume Highway and rail corridor (right of view). To the east (left of view) there are residences within the Kenilworth Street conservation area (Albury LEP 2010).

Visual sensitivity: The view contains several landscape features such as avenue tree planting and mature gardens, as well as nearby streetscapes within a conservation area. The Albury–Thurgoona Trail attracts large numbers of recreational users and the Hume Highway footbridge attracts use from across the local area to access the Albury Station and town centre. This view is of **local visual sensitivity**.

Visual impact during construction: Construction of new concrete ramps at either side of the bridge landing would be visible, in this view, extending along the embankments (left of view). This work would require removal of the existing garden areas including several mature trees. The trees within the surrounding park areas would be retained. Work may extend into the shared pathway and adjacent lawn area and there would site security fencing and construction equipment seen within the foreground of this view. Overall, the proposal would result in a low magnitude of change and a **minor adverse visual impact** during construction.

Visual impact during operation: There would be new pedestrian ramps visible to either side of the bridge landing, extending along the existing embankments. These ramps would include retaining walls and planting would be reinstated in the remaining embankments. The materials and finishes used would be consistent with the existing stairs and walls so that the new ramps would be absorbed into this parkland view. Overall, there would be a negligible magnitude of change and a **negligible visual impact**.

Viewpoint 4: Views from Albury Station

Figure 5-16 Viewpoint 4a: View north east from Railway Place, Albury Station

Figure 5-17 Viewpoint 4a: View north east from Railway Place, Albury Station, Photomontage (Indicative landscape treatments, subject to detail design)

Figure 5-18 VIEWPOINT 4B: NORTH FROM THE ALBURY STATION PLATFORM

Existing view: Views from Railway Place include the decorative station buildings at Albury Station, which are '*prominent civic buildings in Albury'* (OEH, 2013) and collectively form part of a large SHR precinct and local conservation area (Albury LEP 2010). The existing pedestrian bridge can be seen to the north of the main station building, beyond a lower and stepped back section of the main station building and located away from the main entry façade and tower. The bridge is a steel lattice structure and is set down from the level of the heritage buildings. There is some visual separation between the bridge and the northern end of the main station building, and it is located within an area of car parking which further diminishes the prominence of the bridge in views to the station. The southern end of the pedestrian bridge is glimpsed from the main station approaches and not prominent in these views.

In views from the station platform, the existing pedestrian bridge is visible to the north of the platform. The horizontal lattice structure creates a strong horizontal line, connecting with the visually heavier Hume Highway Bridge (left and out of view). A brick and timber signal box structure (c.1885) can be seen in front of the existing bridge and is also a visually important structure within the station precinct. The bridge does not rise above the height of the signal box building and there is a visual relationship between these structures which collectively mark the northern end of the station.

Further to the north, the Harold Mair Bridge can be seen beyond the footbridge. This structure is a large-scale suspension bridge extending over both the rail corridor and Hume Highway. It forms is visually prominent feature in views from the station and is a local visual landmark, rising prominently above the rail corridor.

Visual sensitivity: Views within the station precinct would be experienced by high numbers of rail customers and is a main entry point to Albury. The concentration of unique built features, such as the station buildings and signal box, add to the visual character. This view is of **local visual sensitivity**.

Visual impact during construction: Works to demolish the existing steel pedestrian bridge would be prominent in views from Railway Place and the station platform. There would be a construction site including laydown areas extending southwest towards the pedestrian crossing on Railway Place, and track works within the yard. Several cranes would be located adjacent to the northern end of the station building and within the rail corridor and would be seen rising above the station buildings. This activity and large-scale equipment would be seen in close proximity to the historic buildings and structures within the station precinct including the station building, platform and signal box. This work would reduce the prominence of the main station building and Harold Mair Bridge in views within the station precinct. Due to the scale of the works and close proximity to the station buildings, there would be a moderate magnitude of change to these views, and a **moderate adverse visual impact** during construction.

Visual impact during operation: The new station pedestrian bridge would be a larger structure and more prominent in views from Railway Place and the station platform. It would be taller and wider, with a more visually heavy structure due to the anti-throw screens and concrete bridge deck. The stairs and ramps would incorporate multiple spans and be seen above and extending around the existing car park, adjacent to the main station building. The stairs and ramps would be set back from the façade and maintain the set back from the northern end of the station however, they would be more visually complex and form a more visually prominent element in views to the main station building. In views from the platform the new bridge structure would be taller and would rise above the heritage signal box which would be maintained.

Additional freight trains would be seen passing through the station. These trains would be taller than those currently passing through the station. These trains would obstruct views across the corridor and be seen in the context of the heritage buildings. While being generally visually compatible with the use and character of the existing rail corridor, these additional trains would be a more dominant feature in these views as they pass. Overall, due to the scale of the new pedestrian bridge and increased size and frequency of trains, there would be a moderate magnitude of change and a **moderate adverse visual impact** in views from the station during operation.

Viewpoint 5: View south from the Harold Mair Bridge

Figure 5-19 VIEWPOINT 5: VIEW SOUTH FROM THE HAROLD MAIR BRIDGE


Figure 5-20 VIEWPOINT 5: VIEW SOUTH FROM THE HAROLD MAIR BRIDGE, PHOTOMONTAGE (INDICATIVE, SUBJECT TO DETAIL DESIGN)

Existing view: This elevated view from the Harold Mair Bridge shows Albury Station and its setting within the city of Albury. The brick station building is a prominent feature in the view, including the tall clock tower topped with a decorative cupola. Other important built features of the station include the turntable (left of view) and the brick and timber signal box (centre of view). The simple steel footbridge at the northern end of the station is visible in the centre of view, extending over the rail corridor and connecting with the Hume Highway pedestrian bridge (left of view). This existing bridge is somewhat transparent and set down from the roofline of the historic station buildings so that it is not prominent in this view. The hills to the south of Albury, within Wodonga Regional Park, provide a scenic backdrop to the view.

Visual sensitivity: Harold Mair Bridge is identified as a lookout on the Albury–Thurgoona Trail. In particular, the '*vista from the pedestrian footbridge to Dean Street*' is an important feature in the city of Albury (Section 3.7, Allen Jack + Cottier, 2009). The bridge is also located in the Albury Station SHR precinct. Views from this bridge are designed to align with the centre of town and provide a view to the Albury Station, and this view is therefore of **regional visual sensitivity**.

Visual impact during construction: A section of the rail corridor, seen below the bridge and extending south to the station would be converted into a construction site. There would be track works seen along this section of the rail corridor seen in the middle ground of this view. Works to demolish and construct a new pedestrian bridge north of the station would be viewed unobstructed from this elevated location and would include large scale equipment including cranes located within and to the west of the rail corridor. The installation of new ramp infrastructure at the western bridge landing, would be prominent in this view, beyond the car park (right of view). There may be some visual clutter obscuring this view to the historic station building. The vegetation to the east of the rail corridor (left of view) would be retained and provide some localised screening of the works. Overall, there would be a moderate magnitude of change in the amenity of views from this bridge, and a **high-moderate adverse visual impact** during construction.

Visual impact during operation: The new station pedestrian bridge would be a larger more prominent and visually prominent element in this view, being taller and a more solid structure. It would have a concrete bridge deck, concrete piers and steel anti-throw screens. There would be stairs and ramps extending west from the rail corridor, north of the main station building (right of view). The bridge would be a strong linear element crossing the view, and would rise above the roofline of the brick signal box, and lower rooflines at the northern most end of the main station building. The bridge would, however, remain at a level below the main building roofline and tower, and below the mountains in the far background.

Additional freight trains would be seen passing in both directions along the existing rail corridor. These trains would be taller and seen more frequently than the existing freight and passenger trains seen from this location. While the proposal would be somewhat visually compatible with the use and character of the rail corridor, the trains would be a more dominant feature in this view.

Overall, due to the scale of the new bridge and increased freight rail character in proximity to the historic station, there would be a moderate magnitude of change and a **high-moderate adverse visual impact** during operation.

Viewpoint 6: View north from the Riverina Highway bridge

FIGURE 5-21 VIEWPOINT 6: VIEW NORTH FROM THE RIVERINA HIGHWAY BRIDGE

Existing view: This elevated view north from the Riverina Highway bridge shows the existing rail corridor beneath the bridge, in a small cutting, curving north between the Hume Highway (right of view) and The Scots School (left of view). The cutting to the east (right of view) includes some vegetation and a section of reinforced shotcrete, the slope to the west (left of view) has been cleared of trees and has some patches of grass cover. There are fences along the top of the cutting, separating the Scotts School from the rail corridor in the west, and noise barriers to the east, blocking the view towards the Hume Highway.

Visual sensitivity: The view does not contain any important visual and landscape features and is seen by pedestrians passing over the bridge for a short distance and glimpsed from vehicles travelling at speed across the Riverina Highway bridge. This view is of **neighbourhood visual sensitivity**.

Visual impact during construction: A construction site would be established along the rail corridor, extending west from the foot of the shotcrete wall to the boundary fence along The Scots School. The track would be lowered by up to 1.5 metres in this location and retaining walls would be constructed on both sides of the rail corridor. This work would be below the level of the adjacent school and not rise prominently above the cutting. Overall, there would be a low magnitude of change to this view and a **negligible visual impact** during construction.

There is the potential for a noise wall along the western side of the rail corridor adjacent to the Scots School which would have the potential for a visual impact during construction. The visual impact of these works should be considered during detailed design.

Visual impact during operation: There would be additional freight trains visible passing beneath the bridge. While these trains would have a larger visual bulk, being taller, they would be set down on a lowered section of track and somewhat absorbed into the view due to this landform and viewing angle. The trains would not rise prominently above the level of the new rail cutting and would therefore be glimpsed and not viewed from the areas along the eastern edge of The Scots School. Overall, there would be a low magnitude of change and a **negligible visual impact** during operation.

There is the potential for a noise wall along the western side of the rail corridor adjacent to the Scots School which would have the potential for a visual impact during operations. The treatment of this wall should be considered during detailed design to minimise these impacts.

#### 5.2.3.4 Assessment of night-time visual impact

Existing night time conditions and visual sensitivity: At night, the landscape in the vicinity of Albury Station and Riverina Highway bridge would have medium light levels associated with retail, commercial, industrial and residential areas surrounding the rail corridor. Vehicles travelling along the adjacent roads including the Hume and Riverina highways, and trains travelling along the existing rail corridor at night, would contribute moving headlights to the night scene, increasing the overall light levels. There would be a level of sky glow above the town centre of Albury which would also influence the character of this area. This would include night time sporting events at Alexandra Park. Overall, this landscape is an area of high district brightness (A4) and has a **very low visual sensitivity** at night.

Night time visual impact during construction: There would be night works required during rail possessions to for the lowering of the track near the Riverina Highway and for construction of the pedestrian bridge and trackwork. This night work would include task lighting at the construction sites as well as lighting at the site offices, storage and laydown areas along the rail corridor. There would also be additional lighting from staff and construction vehicles accessing and moving along the rail corridor. This lighting is likely to be contained by the development and cuttings along the rail corridor and largely absorbed with the surrounding area of moderate district brightness. Most of the adjoining properties are commercial or the school which would have more limited use at night, particularly in the areas adjacent to the rail corridor. It is not expected that there would be any direct light spill onto private property. Overall, there would be a low magnitude of change to this landscape which is of low sensitivity at night, and there would be a **negligible visual impact**.

Night time visual impact during operation: During operation, there would not be any permanent lighting proposed along the rail corridor. There would, however, be permanent lighting proposed for the pedestrian bridge particularly in the vicinity of Railway Place, at the western bridge ramps. There would also be additional train headlights, directed along the rail corridor. Where the rail corridor curves, it is in cutting, and the headlights would not be directed towards any residential properties. Overall, this lighting is likely to be absorbed into the surrounding area of high district brightness, and there would be a low magnitude of change and a **negligible visual impact** during operation at night.

### 5.2.4 Billy Hughes bridge

#### 5.2.4.1 Description of the proposal

The proposal would be located within the existing rail corridor and include the following elements:

- Track lowering of approximately 310 metres of the main line by up to 1.4 metres and re-alignment under Billy Hughes bridge
- New independent deflection/retaining walls to each side of the track.

During construction there would be:

- Temporary compounds adjacent to the rail corridor to the east and west of the Wagga Road
- Construction access via Wagga Road.

Further details of construction are contained in Chapter 8 and operational elements in Chapter 9 of the EIS.

#### 5.2.4.2 Assessment of landscape impact

The following is an assessment of the landscape impact of the proposal on the Billy Hughes bridge industrial and rural area, which includes the Billy Hughes bridge enhancement site and surrounding areas.

*Billy Hughes bridge industrial and rural area*

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

Landscape sensitivity: This landscape is undergoing a change in land use and character due to the development of the NEXUS industrial precinct and land use zoning. This area has limited public access and is primarily experienced by workers associated with the industrial areas and from adjacent rural properties. Overall, this landscape is of **neighbourhood landscape sensitivity**.

Landscape impact during construction: A construction site would be established along the rail corridor, to lower the track and install retaining walls to each side of the corridor. Two large construction compounds would be established to the east and west of the rail corridor to support the works, including storage and laydown areas beside the Hume Highway and paper mill. The compounds would be located to protect the mature native vegetation and areas zoned E3 Environmental Conservation (Albury LEP 2010). While the construction activity would alter the character of a localised part of this landscape, this would be consistent in character with the transitioning use of the area to industrial. Overall, there would be a low magnitude of change and a **negligible landscape impact**.

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

#### 5.2.4.3 Assessment of daytime visual impact

*Visual catchment of the proposal*

The rail corridor at the Billy Hughes bridge site would be in cutting, reducing the visibility of the rail corridor and future additional trains. The surrounding landscape includes areas of bushland and scattered trees which provide screening to the rail corridor and proposed construction compound sites. During construction there may be glimpses from the Hume Highway through roadside trees to the eastern site compound. There would also be views to the western compound site from R W Henty Drive and adjacent industrial building. There would be views to the rail corridor from Wagga Road, in the vicinity of the rail underpass. There may be glimpses to the proposal from surrounding rural areas between RW Henty Drive and the Hume Highway.

Due to the small scale of these works there would not be a visual impact expected at this site.

#### 5.2.4.4 Assessment of night-time visual impact

Existing night time conditions and visual sensitivity: At night, the rural areas surrounding the site would have low light levels, with lighting from scattered dwellings. There would be some lighting associated with existing industrial development including a paper mill and the Ettamogah Rail Hub. Vehicles travelling along the Hume Highway and local roads such as Wagga Road, and trains travelling along the existing rail corridor. Overall, this landscape is an area of low district brightness (A2) and has a **moderate visual sensitivity** at night.

Night time visual impact during construction: There would be night works during rail possessions This night work would include task lighting at the construction site as well as lighting at the site offices, storage and laydown areas within the compounds. There would also be additional lighting from staff and construction vehicles accessing and moving along the rail corridor. The work within the rail corridor would be somewhat contained by the existing cutting, and the vegetation in surrounding fields would filter views to the construction compounds. There may be some additional light seen from dwellings on Wagga Road, however, this lighting would be seen in the context of the existing highway and surrounding industrial use and is likely to be absorbed with the surrounding area of low district brightness. Overall, there would be a low magnitude of change to this landscape which is of moderate sensitivity, and a **moderate-minor adverse visual impact** at night.

Night time visual impact during operation: During operation, there would not be any permanent lighting proposed along the rail corridor. There would be additional train headlights visible, however, these would be directed along the rail corridor and would not create any direct light spill onto private residential properties. Overall, this additional light would be absorbed into the surrounding night time setting and result in a negligible magnitude of change and a **negligible visual impact** during operation at night.

### 5.2.5 Table Top Yard clearances

At the Table Top Yard clearances enhancement site the proposal would include the removal of the signal gantry. Due to the small scale of these works there would not be a landscape or visual impact expected at this location.

### 5.2.6 Summary of impacts

The following tables contain a summary of the landscape and visual impacts identified in the Albury precinct assessment.

TABLE 5-1 SUMMARY OF LANDSCAPE IMPACTS – ALBURY

| | | Construction | | Operation | |
|---|---|---|---|---|---|
| **Landscape character area** | **Sensitivity** | **Magnitude of change** | **Impact** | **Magnitude of change** | **Impact** |
| **Murray River bridge** | | | | | |
| Murray River plains | Local | Low | Minor adverse | Low | Minor adverse |
| **Albury Station and surrounds** | | | | | |
| Albury Station heritage precinct | Regional | Low | Moderate adverse | Low | Moderate adverse |
| The Scots School and adjacent commercial areas | Local | Negligible | Negligible | Negligible | Negligible |
| Hume Highway and adjacent open space | Local | Moderate | Moderate adverse | Low | Minor benefit |
| **Billy Hughes bridge** | | | | | |
| Billy Hughes bridge industrial and rural area | Neighbourhood | Low | Negligible | Negligible | Negligible |

TABLE 5-2 SUMMARY OF DAYTIME VISUAL IMPACTS – ALBURY

| | | Construction | | Operation | |
|---|---|---|---|---|---|
| **Representative viewpoint** | **Sensitivity** | **Magnitude of change** | **Impact** | **Magnitude of change** | **Impact** |
| **Murray River bridge** | | | | | |
| 1. Views south from Townsend Street | Neighbourhood | Low | Negligible | Low | Negligible |
| 2. Views south west from the Hume Highway | Local | Low | Minor adverse | Low | Minor adverse |
| **Albury Station and surrounds** | | | | | |
| 3. View south along the open space east of the Hume Highway Bridge | Local | Low | Minor adverse | Negligible | Negligible |
| 4. Views from Albury Station | Local | Moderate | Moderate adverse | Moderate | Moderate adverse |
| 5. View south from the Harold Mair Bridge | Regional | Moderate | High-moderate | Moderate | High-moderate |
| 6. View north from the Riverina Highway bridge | Neighbourhood | Low | Negligible | Low | Negligible |

TABLE 5-3 SUMMARY OF NIGHT TIME VISUAL IMPACTS – ALBURY

| | | Construction | | Operation | |
|---|---|---|---|---|---|
| **Night time visual receiver location:** | **Sensitivity** | **Magnitude of change** | **Impact** | **Magnitude of change** | **Impact** |
| **Murray River bridge** | | | | | |
| Murray River plains | Low | Negligible | Negligible | Negligible | Negligible |
| **Albury Station and surrounds** | | | | | |
| Albury Station | Very low | Low | Negligible | Low | Negligible |
| **Billy Hughes bridge** | | | | | |
| Billy Hughes bridge industrial and rural area | Moderate | Low | Moderate-minor | Negligible | Negligible |

## 5.3 Greater Hume – Lockhart

This section assesses the proposal in the Greater Hume – Lockhart precinct, including a review of the local planning context for the Greater Hume and Lockhart Shire Council areas, key features of the proposal at each enhancement site, and potential landscape and visual impacts associated with the proposal during construction and operation, day and night. The assessment has been organised into each of the following enhancement sites, from south to north:

- Culcairn pedestrian bridge and Culcairn Yard clearances
- Henty Yard clearances
- Yerong Creek Yard clearances
- The Rock Yard clearances.

A summary of the landscape and visual impacts is provided at the end of this section (refer section 5.3.6).

### 5.3.1 Local Planning Context

The Greater Hume – Lockhart precinct is located in the Greater Hume Council and Lockhart Shire Council areas. The following local planning instruments provide relevant landscape character and visual amenity policy and guidance for this area. The following documents are applicable and have been summarised in the following sections.

- Greater Hume Local Strategic Planning Statement, 2020
- Greater Hume Local Environmental Plan 2012
- Greater Hume Development Control Plan 2013
- Lockhart Shire Local Strategic Planning Statement, 2020
- Lockhart Shire Local Environmental Plan 2012
- Lockhart Shire Development Control Plan 2016.

#### 5.3.1.1 Greater Hume Council

*Greater Hume Local Strategic Planning Statement*

Greater Hume LSPS (Greater Hume Council, 2020) sets the land use framework for Greater Hume's economic, social and environmental land use needs over the next 20 years. It acknowledges the '*important agricultural and resource lands'* of the area and the associated '*rural lifestyle'* as well and the '*rural heritage town setting'* and '*significant environmental areas'* that '*attract people to the area*'.

The existing *'Main Southern Railway Line traverses the shire'* through the centre, within the town centres of Henty and Culcairn, where the proposed clearance sites are located, including Culcairn and Henty Railway Stations (both State listed heritage places). The second of the nine planning priorities for the shire relates to creating and maintaining '*Vibrant Places'* in '*towns and villages of Greater Hume*'. To deliver this planning priority, Council will:

- Promote the active reuse of heritage buildings that maintain the integrity of the historic character of the townships
- Provide accessible pedestrian areas within main commercial areas, while maintaining the character of main streets.

### *Greater Hume Local Environmental Plan 2012*

The Greater Hume LEP (Greater Hume Council, 2012) aims to '*protect and promote the use and development of land*' whilst ensuring to '*protect built and cultural heritage assets'* (clause 1.2.2).

The proposed enhancement sites are located mostly within the SP2 Infrastructure zone, which aims to '*provide for infrastructure and related uses'* (Land Use Table, SP2). The Henty Yard clearances site and Culcairn Yard clearances sites are located in the centre of town, including part of the RU5 Village zone in Henty, between the silos and rail corridor.

There are several LEP heritage items and heritage conservation areas which are located within or in close proximity to the enhancement sites, including:

- Culcairn Conservation Area
- Culcairn Railway Station (local and State heritage register item)
- Street Trees along Balfour Street
- Culcairn Post Office, Court House, Police Station and London Bank building, Balfour Street
- Culcairn Hotel and Scholz's Corner, Railway Parade
- Henty Conservation Area
- Henty Railway Station (local and State heritage register item)
- Doodle Cooma Arms Hotel
- Horse Trough (beside railway station, Olympic Highway)
- Methodist Church (later Uniting Church, Ivor Street).

The LEP aims to conserve the heritage significance of heritage items, including their '*settings and views*' (Clause 5.10).

### *Greater Hume Development Control Plan 2013*

Greater Hume DCP (Greater Hume Council, 2013) supports the Greater Hume LEP by providing additional objectives and controls for administering specific types development.

Chapter 9 (Heritage Conservation Areas) aims to '*provide guidelines and controls which seek to protect the significant character of towns in the Shire*' and '*enhance amenity and heritage values of towns in the Shire*' such as Culcairn and Henty. In particular, the streetscapes of Culcairn and Henty conservation areas, including the enhancement sites, are considered to be '*highly distinctive due to flat topography and richness of its Federation Period architecture'* (Section 9.0).

The DCP also values the use of '*landscaping'* and '*landscape buffers'* to '*improve the visual quality and amenity*' of developments and '*as a means of screening outdoor areas from adjoining properties and from public places (including roads)*' (Section 3.2).

#### 5.3.1.2 Lockhart Shire Council

##### *Lockhart Shire Local Strategic Planning Statement*

Lockhart LSPS (Lockhart Shire Council, 2020) sets the land use framework for Lockhart Shire Council's economic, social and environmental land use needs over the next 20 years. It addresses the planning and development issues of strategic significance and established planning priorities and actions, spatial land use direction and guidance.

Lockhart is located '*in the heart of the Riverina'* and is one of the region's '*most productive agricultural and pastoral areas*'. Tourism, especially heritage and eco-tourism, have '*seen good positive growth over recent years*', with towns such as The Rock and Lockhart, as well as '*natural attractions*' such as The Rock Nature Reserve, providing interest for visitors. In particular, The Rock landform is identified as one of the Shire's most '*impressive landmarks… rising above the surrounding plains, and marking a special site of indigenous history'*. Lockhart's rural lands also '*form an important part of the area's identity'* and are considered to '*provide highly valued scenic amenity and rural character*' (Lockhart Shire Council, 2020).

##### *Lockhart Shire Local Environmental Plan 2012*

Lockhart Shire LEP aims to '*conserve the environmental heritage of Lockhart'* whilst facilitating '*growth and development'* (Lockhart Shire Council, 2012, Clause 1.2.2e and b).

The Yerong Creek Yard clearances and The Rock Yard clearances enhancement sites are located in the eastern part of the Lockhart Shire, within the existing rail corridor beside the Olympic Highway. The enhancement sites are located mostly within the SP2 Infrastructure zone, which aims to '*provide for infrastructure and related uses'* (Land Use Table, SP2). The enhancement sites are located in the centre of town, including part of the RU5 Village and RU1 Primary Production zones in Yerong, north of the silos, and part of the RU5 Village at The Rock, east of the silos. LEP heritage items and heritage conservation areas within or in close proximity to the enhancement sites include (south to north):

- Yerong Creek Urban Conservation Area
- The Rock Urban Conservation Area
- The Rock Railway Station (local and State heritage register item).

The LEP aims to conserve the heritage significance of heritage items, including their '*settings and views*' (Clause 5.10).

The LEP does not have a code or development standard relating to rail infrastructure.

##### *Lockhart Shire Development Control Plan 2016*

Lockhart Shire DCP (Lockhart Shire Council, 2016) supports the Lockhart LEP by providing additional objectives and controls for administering development. The DCP recognises the '*visual amenity and character of towns and villages within Lockhart Shire'* as well as the '*character and amenity'* of the Shire's rural land, stating that intrusive development in rural areas such as extractive industries should have '*extensive vegetation buffers'* to protect adjoining uses from '*visual impacts'*. It also states that '*trees and vegetation that contribute to the environmental and amenity value of the local area and region are conserved'* (Lockhart Shire Council, 2016).

The Yerong and The Rock town centres each include conservation areas. Key features in Yerong Creek conservation area include the '*distinctive railway crossing, wide boulevard and views of typical historic features such as the Hotel, local church and church hall historic buildings and water tower*' (Lockhart Shire Council, 2016). In The Rock conservation area, the DCP describes a '*distinctive railway crossing, wide boulevard, and memorial tree avenue'* and that the town has an

'*outstanding level of intactness or original architecture*' (Lockhart Shire Council, 2016). The DCP refers to the '*high integrity and aesthetic values'* of buildings within the conservation area, but makes no reference to views to or from the setting of the towns.

### 5.3.2 Culcairn pedestrian bridge and Culcairn Yard clearances

#### 5.3.2.1 Description of the proposal

The proposal would be located within an existing rail corridor and include the following elements:

- Removal of redundant pedestrian bridge and readjustment of surrounding pedestrian fencing
- Modification of gantry
- Slewing of the main line track.

During construction there would be:

- A temporary compound in the rail corridor adjacent to Railway Parade south of the grain silos
- Possible laydown within the rail corridor, north of the grain silos
- Construction access via Railway Parade and Balfour Street.

#### 5.3.2.2 Assessment of landscape impact

The following is an assessment of the landscape impact of the proposal on the Culcairn rural town centre landscape character area, which includes the Culcairn pedestrian bridge and Culcairn Yard clearances enhancement site and surrounding areas.

*Culcairn rural town centre*

Existing conditions: The township of Culcairn includes a small town centre with shopfronts facing the rail corridor. The Culcairn station buildings are State heritage listed and make *'an important contribution to the townscape of Culcairn particularly due to its location in the centre of the town'* (OEH, 2008). The former Station Master's residence also '*contributes to the setting of the precinct and retains a strong visual and historical link to the site*' (OEH, 2008). The triple row of street trees along Balfour Street are a landscape feature, listed as a heritage item in Greater Hume LEP 2012. There is a parkland reserve with shelters and public amenities located between the rail corridor and Railway Parade and a small pocket park to the east of the rail corridor adjacent to the station platform building, Eric Thomas Park, which includes a playground. A level crossing at Balfour Street provides access across the rail corridor and is located adjacent to a disused steel pedestrian bridge (also part of the heritage listing for the station). The concrete grain silos to the north of town on the western side of the rail corridor are a local visual landmark.

Landscape sensitivity: Culcairn is a larger town which attracts residents, workers and visitors from across the region. Due to the concentration of heritage character built form, trees and open space around the station and main streets, it is a landscape of local sensitivity.

Landscape impact during construction: There would be construction undertaken within the rail corridor including realignment and slewing of the loop line to the west of the mainline and the replacement of overhead gantries. The steel pedestrian bridge beside Balfour Street would be removed. Construction site access would be via Balfour Street and Railway Parade, with access provided to the north of the grain silos. The site access and haulage routes would pass short sections of residential receivers along the Olympic Highway and Railway Parade. Laydown areas would be located to the north and south of the silos and would be in close proximity to residences in Railway Parade. While this construction activity would alter the character of a localised part of the rail corridor, there would not be a direct impact upon the existing open space and trees. Overall, there would be a low magnitude of change to this landscape and a **minor adverse landscape impact** during construction.

Figure 5-22 CULCAIRN RURAL TOWN CENTRE CHARACTER IMAGES

Landscape impact during operation: The new rail track loop would be adjusted and there would be larger freight trains using this area of the rail corridor. The existing pedestrian bridge would have been removed, however, this structure is not in use and does not provide any cross corridor connectivity. There would be more frequent freight trains passing through the site which are taller than the existing trains. This change would further divide the town when trains are passing, reducing the east west connectivity for residents and vehicles using the Olympic Highway. It would also reduce the amenity of the Railway Parade open space reserve and Eric Thomas Park and playground for recreational users. Overall, there would be a moderate magnitude of change to this landscape and a **moderate adverse landscape impact**.

#### 5.3.2.3 Assessment of daytime visual impact

*Visual catchment of the proposal*

Due to the predominantly flat landform in Culcairn, views to the proposal (the visual catchment) would be restricted by the existing built form and vegetation along the corridor and in the parkland surrounding the rail corridor. There would be close-range views to the site from adjacent parks and recreational reserves along the Olympic Highway and Railway Parade, including Eric Thomas Park. There would be views from nearby residential and commercial areas to the east and west filtered through parkland and street trees. This would include areas of the Culcairn town centre to the west along Railway Parade and south to Balfour Street, particularly to works to the level crossing and adjacent disused pedestrian bridge. During construction there would be views to the proposed construction laydown areas would be seen from Railway Parade and residences facing the rail corridor.

*Representative viewpoint assessment*

The following viewing location was selected as representative of the range of views to the proposal:

- Viewpoint 7: Views from the parkland reserve on Railway Parade

Figure 5-22 identifies the location of this viewpoint. The following section summarises the daytime visual impact identified in the representative viewpoint assessment.

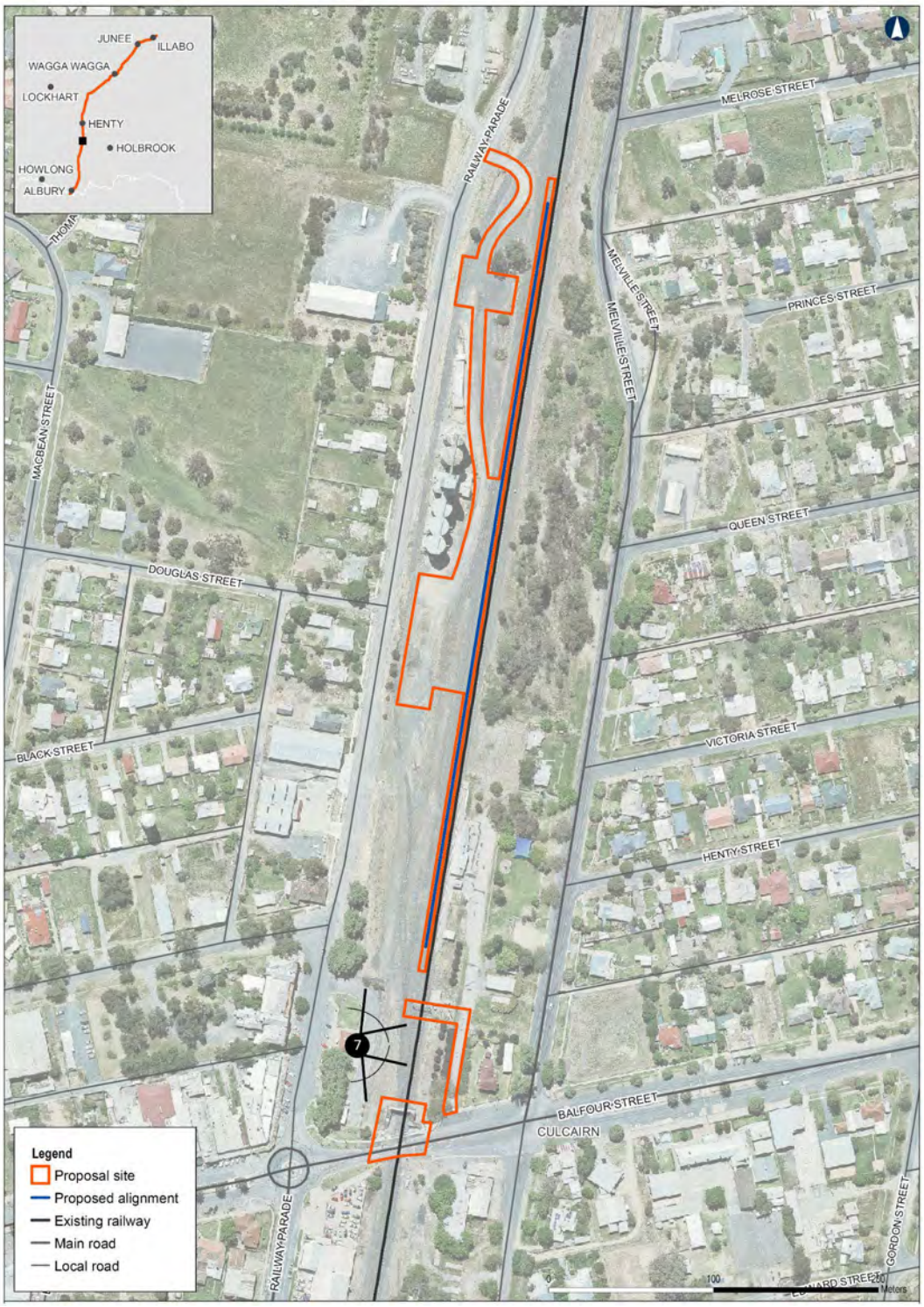


FIGURE 5-23 VIEWPOINT LOCATION PLAN – CULCAIRN PEDESTRIAN BRIDGE AND CULCAIRN YARD CLEARANCES ENHANCEMENT SITE

Viewpoint 7: Views from the parkland reserve on Railway Parade

Figure 5-24 VIEWPOINT 7: VIEW NORTH FROM PARKLAND RESERVE ON RAILWAY PARADE

Figure 5-25 VIEWPOINT 7: VIEW NORTH FROM PARKLAND RESERVE ON RAILWAY PARADE, PHOTOMONTAGE SHOWING EXAMPLE TRAIN

Figure 5-26 VIEWPOINT 5: VIEW SOUTHEAST FROM PARKLAND RESERVE ON RAILWAY PARADE

Existing view: This view includes an open view to the existing rail corridor including ballast, gantries and signal boxes. There would be intermittent trains, crossing the middle ground of this view and obstructing the view across the corridor. This view includes the grain silos to the northwest and the historic station platform building to the northeast. There are mature trees along Railway Parade to the west (left of view) and a vegetated backdrop to the east due to trees along the rail corridor, within adjacent parkland and residential properties (right of view). To the southeast, there is a steel lattice pedestrian bridge within the rail corridor also viewed against a vegetation.

Visual sensitivity: This parkland reserve is part of the State heritage listed Culcairn Station and includes views to the historic station and town centre. This location would attract local residents and travellers using the amenities and rest stop facilities. Views from the reserve and station precinct are of **local visual sensitivity**.

Visual impact during construction: A construction site would be established within the rail corridor, with works being undertaken in the vicinity of the Balfour Street crossing, trackwork extending north from in the vicinity of the station platform building, and north of the grain silos for construction and adjustment of rail loop infrastructure. Work to remove the disused pedestrian bridge and modification of the existing gantry structure would be visible from this location. There would be construction vehicles seen from this location, accessing the site from Railway Parade. Overall, due to the relatively minor scale of the works, there be a low magnitude of change and a **minor adverse visual impact** during construction.

Visual impact during operation: The adjustments to the rail loop and gantry would be absorbed into the character of the existing rail corridor. However, there would be more frequent freight trains visible along the rail corridor. These trains would be taller and would obstruct the view across the corridor, temporarily obstructing views to the heritage station building and vegetated backdrop, more frequently than currently experienced from this location. During this time these

trains would dominate the view, and overall, there would be a moderate magnitude of change to these views and a **moderate adverse visual impact** during operation.

#### 5.3.2.4 Assessment of night-time visual impact

Existing night time conditions and visual sensitivity: At night, there would be moderate lighting levels in the centre of Culcairn associated with existing commercial development and street lighting within the town centre and scattered lighting in surrounding residential areas. There would be moving headlights from vehicles travelling along local roads and using the Olympic Highway, and also from trains travelling along the existing rail corridor at night. Overall, this landscape is an area of medium district brightness (A3) and has a **low visual sensitivity** at night.

Night time visual impact during construction: There would be night construction activity during rail possessions and during extended construction hours at this site. This work would include task lighting, construction vehicle headlights and lighting associated with site offices, storage and laydown areas. This lighting would be located to the north of the town centre, on Railway Parade, near the industrial properties and set back a considerable distance from any residential properties. This lighting would be absorbed into the existing night scene and there would be a low magnitude of change overall and a **minor adverse visual impact** at night.

Night time visual impact during operation: There would be additional trains using the corridor and therefore more frequent train headlights would be seen along the rail corridor. This lighting would be directed along the corridor and not towards the residential areas to the east of the station. The corridor is separated from the commercial areas in the west by the existing open space and Railway Parade so that the intervening trees and distance would reduce any potential visual impact from the moving train headlights. While there may be additional direct light sources seen and a skyglow above the rail corridor, this would not noticeably alter the character of the town. Overall, there would be a low magnitude of change to this landscape which is of low sensitivity and a **minor adverse visual impact** at night during operation.

### 5.3.3 Henty Yard clearances

#### 5.3.3.1 Description of the proposal

The proposal would be located within an existing rail corridor and include the following elements:

- Main line slew, including earthworks and drainage along western side of track
- Gantry modification
- Modification to the Sladen Street level crossing.

During construction there would be:

- Temporary compounds along the western side of the rail corridor adjacent to Ivor Street and north of Sladen Street beside the grain silos
- Construction access via Sladen Street.

Further details of construction are contained in Chapter 8 and operational elements in Chapter 9 of the EIS.

#### 5.3.3.2 Assessment of landscape impact

The following is an assessment of the landscape impact of the proposal on the Henty rural town centre landscape character area, which includes the Henty Yard clearances enhancement site and surrounding areas.

*Henty rural town centre*

Figure 5-27 HENTY RURAL TOWN CENTRE CHARACTER IMAGES

Existing conditions: This landscape character area is centred on the small rural township of Henty and includes the existing rail corridor. The landform in this area is generally flat, with the rail corridor crossing the main street via a level crossing at Sladen Street. The streets are wide, with mature street trees and historic (often heritage listed) single and double storey commercial buildings along the main street. The station is a SHR item (OEH, 1999) but is not a visually prominent feature within the town, being a small timber building. The more imposing Doodle

Cooma Arms Hotel is located on the corner of Ivor and Sladen streets and is a brick corner building. There are also several distinctive brick and timber buildings along the main street, extending west from the rail corridor, that differentiate the town from others on the rail line. A group of eight concrete grain silos are located alongside the rail corridor to the northwest of the station and north of town. The Henty Bicentennial Park is located to the east of the rail corridor, south of Sladen Street. This park includes open space, paths, play equipment and the Headlie Taylor Header Museum. On Ivor Street to the west of the rail corridor there are residential areas and the Riverlife Church.

Landscape sensitivity: Henty is a small rural town, attracting residents, workers and visitors from the surrounding rural areas. The town centre has a historic built form character and a State heritage listed train station. The Henty Bicentennial Park attracts local residents for recreational use and is a focal point within the town. Overall, this is a landscape of **local landscape sensitivity**.

Landscape impact during construction: A construction site would be established within the rail corridor in the vicinity of Sladen and Ivor streets. Access to the site would be via Sladen Street and construction vehicle haulage routes would pass through short sections of the adjacent residential streets including along Railway Parade. Laydown areas would be established to the north of the Sladen Street level crossing and to the south of the station, beside Ivor Street. Sladen Street level crossing would be closed temporarily during track slewing and to upgrade the crossing. There would not be any direct impact upon the existing trees along the rail corridor or the adjacent Henty Bicentennial Park. Overall, the magnitude of change to this landscape is predicted to be low, resulting in a **minor adverse landscape impact**.

Landscape impact during operation: The level crossing at Sladen Street would be modified to accommodate the track realignment at this location. However, the additional train movements would restrict the east-west movement more frequently trains pass almost hourly throughout the day and night. The additional freight trains, being taller and more frequent, would have a greater effect on the level of comfort and amenity of the Bicentennial Park, including from the playground, and adjacent commercial properties. Overall, there would be a moderate magnitude of change to this landscape, and a **moderate adverse landscape impact** during operation.

#### 5.3.3.3 Assessment of daytime visual impact

##### *Visual catchment of the proposal*

Due to the predominantly flat landform, views to the proposal (the visual catchment) would be limited by the existing built form and vegetation along the rail corridor. The visual catchment would extend east to the include the Henty Bicentennial Park, the Olympic Highway, and the commercial and residential properties facing the rail corridor. There would be some filtering of these views by the trees within the park and along the highway. The visual catchment would also extend to the west, across Ivor Street and to the residential properties and a church. There would also be views from the rear gardens of residential properties and the church which back onto the rail corridor, between Ivor Street and the rail corridor. The visual catchment would also include the commercial properties near the intersection of Ivor and Sladen Street, including the Doodle Cooma Arms Hotel.

*Representative viewpoint assessment*

The following viewing location was selected as representative of the range of views to the proposal:

- Viewpoint 8: View north along Ivor Street

Figure 5-27 identifies the location of this viewpoint.

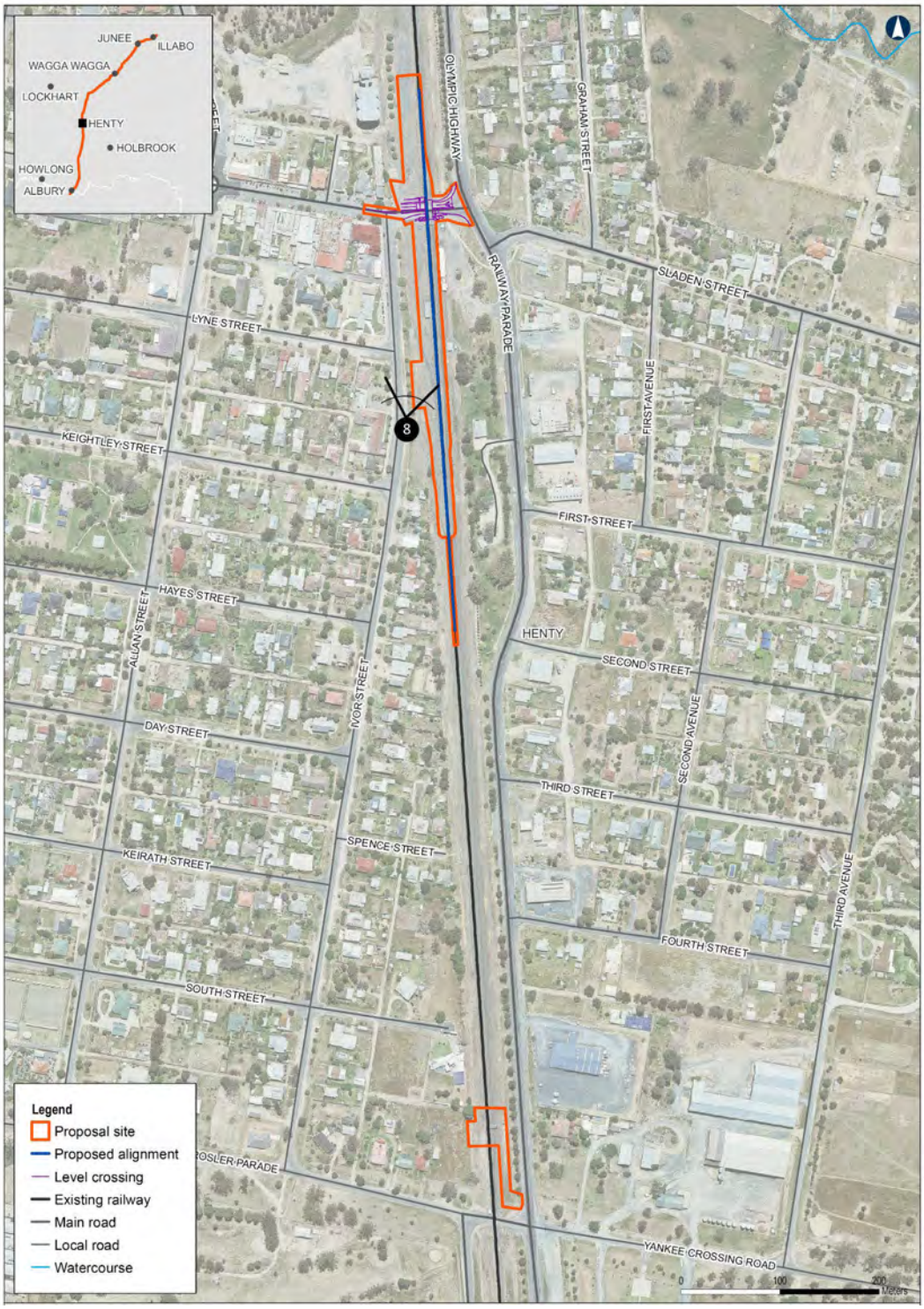


FIGURE 5-28 VIEWPOINT LOCATION PLAN – HENTY YARD CLEARANCES ENHANCEMENT SITE

The following section summarises the daytime visual impact identified in the representative viewpoint assessment.

Viewpoint 8: View north along Ivor Street

FIGURE 5-29 VIEWPOINT 8: VIEW NORTH ALONG IVOR STREET

Existing view: This view is located adjacent to the Riverview Church, and near the residential areas on Ivor Street, includes the rail corridor in the middle ground of the view, passing through the centre of Henty. The station is visible in the centre of view, and is a simple skillion roof timber station building, with side platform (OEH, 1999). The station is located within a wide rail corridor, and there are mature trees along the eastern side of the rail corridor, within the Henty Bicentennial Park and street trees, which screen views to the Olympic Highway and commercial and residential areas further to the east (right of view). Single stacked freight and passenger trains would be visible intermittently passing across the middle ground of the view.

Visual sensitivity: This view would be experienced by local residents and visitors to the adjacent church and residences. This is a local street set back from the main street of town with unobstructed views to the rail corridor, this view is of **neighbourhood visual sensitivity.**

Visual impact during construction: A construction site would be established within the rail corridor, with construction activities to slew the track. A material laydown area would be established in the centre of view, adjacent to Ivor Street. The modifications to the Sladen Street level crossing would also be seen from this location, in the background of view. The work would add visual clutter to the middle ground of this view but would be somewhat consistent with the working character of the rail corridor. Overall, there would be a low magnitude of change to views from this area, and a **negligible visual impact** during construction.

Visual impact during operation: The new rail infrastructure would be consistent with the character of existing rail infrastructure, and largely absorbed into the view. There would, however, be more frequent trains visible from this location. These trains would be taller and more visually dominant, obstructing the view across the rail corridor and rising above the backdrop of trees. Overall, there would be a moderate magnitude of change, and a **minor adverse visual impact** during operation.

#### 5.3.3.4 Assessment of night-time visual impact

Existing night time conditions: Light sources would include existing retail, industrial and residential development within the town, street lighting along the Olympic Highway and in the vicinity of the Sladen Street level crossing and scattered rural residences across the surrounding landscape. Trains travelling along the existing rail corridor at night, would also contribute to the light levels.

Visual sensitivity at night: At night, Henty and the surrounding rural landscape would have low district brightness (A2) and a **moderate visual sensitivity**.

Night time visual impact during construction: There would be night activity during rail possessions and during extended construction hours at this site. This would include task lighting, construction vehicle headlights and lighting associated with site offices, storage and laydown areas. This lighting would be located to the east of Ivor Street and north of the Sladen Street level crossing. The site would be set back a considerable distance from any residential properties and the church so that there would not be any direct light spill expected. This additional lighting would be absorbed into the existing night scene and there would be a low magnitude of change overall and a **moderate-minor adverse visual impact** at night.

Night time visual impact during operation: There would be additional trains using the corridor and therefore more frequent train headlights would be seen along the rail corridor. This lighting would be directed along the corridor and not towards the residential areas to the west of Ivor Street or east of the Olympic Highway. The rail corridor is separated from the dwellings and commercial properties to the east by the park and the highway which includes moving vehicle headlights during evening hours. The church and residences west of Ivor Street are set back from the rail corridor, with only the rear of properties on Ivor Street directly adjoining the enhancement site and within close proximity to the train headlights. While there may be additional direct light sources seen from these adjacent areas, and a skyglow above the rail corridor, this would not noticeably alter the character of these properties. Overall, there would be a low magnitude of change to this landscape which is of moderate sensitivity and a **moderate-minor adverse visual impact** at night during operation.

### 5.3.4 Yerong Creek Yard clearances

#### 5.3.4.1 Description of the proposal

The proposal would be located within the existing rail corridor and include the following elements:

- Slewing of the main line track
- Removal of a redundant platform and railway hut
- Modification to the Cole Street level crossing.

During construction there would be:

- Temporary compounds on the western side of the rail corridor north and south of Cole Street
- Construction access via Cole Street.

Further details of construction are contained in Chapter 8 and operational elements in Chapter 9 of the EIS.

### 5.3.4.2 Assessment of landscape impact

The following is an assessment of the landscape impact of the proposal on the Yerong Creek town centre, which includes the Yerong Creek Yard clearances enhancement site and surrounding areas.

*Yerong Creek rural town centre*

Figure 5-30 YERONG CREEK RURAL TOWN CENTRE LANDSCAPE CHARACTER IMAGES

Existing conditions: The town of Yerong Creek is characterised by wide tree lined streets and a very sparse pattern of settlement. The Sydney to Melbourne rail corridor passes through the centre of town, however, the station is not in use. The platform buildings have since been demolished and only a low platform remains at the site. The town centre, including the level rail crossing at Cole Street, is part of Yerong Creek Urban Conservation Area (Lockhart LEP 2012), which includes several historic buildings such as the local hotel and church, which are both landmarks within the town. The concrete reservoir (recently painted with a mural) and grain silos to the west of the rail corridor are vertical visual features in an otherwise small scale, low-rise rural town.

Landscape sensitivity: Yerong Creek includes several heritage listed buildings which provide interest within the town centre. The town attracts residents, workers and visitors from across the surrounding rural areas, and is of **local landscape sensitivity**.

Landscape impact during construction: Two laydown areas would be established within the rail corridor, to the west of the track beside Finlayson Street. Construction vehicle access would be at the corner of Cole Street and the Olympic Highway, north of the level crossing and there would be construction vehicles arriving via the Olympic Highway, passing by residences and a local school, at the corner of Cole Street. The remaining station platform would be demolished. The level crossing would be closed temporarily to upgrade the crossing, altering the east west pedestrian movement across the rail corridor. There would not be any direct impact upon the existing trees along the rail corridor. Overall, the magnitude of change to this landscape is predicted to be low, resulting in a **minor adverse landscape impact**.

Landscape impact during operation: The level crossing at Plunkett Street would be modified to accommodate the track realignment at this location. However, the additional train movements would restrict the east-west movement more frequently as trains would interrupt local vehicle and pedestrian crossing almost hourly throughout the day and night. The additional freight trains, would have a greater effect in dividing the town and reducing local permeability and accessibility, and the taller trains would reduce the level of comfort and amenity of the adjacent streets. Overall, there would be a low magnitude of change to this landscape, and a **minor adverse landscape impact** during operation.

#### 5.3.4.3 Assessment of daytime visual impact

##### *Visual catchment of the proposal*

The visual catchment of the proposal would extend east across the Olympic Highway to a few scattered residential dwellings, set back from the highway. There would be views from areas to the west of the rail corridor including from Finlayson Lane and the residences facing the rail corridor. There would be close-range views from the historic two storey hotel at the corner of Plunket Street and Finlayson Street and other commercial buildings on Plunkett Street.

*Representative viewpoint assessment*

The following viewing location was selected as representative of the range of views to the proposal:

- Viewpoint 9: View east from Plunkett Street

Figure 5-30 identifies the location of this viewpoint.

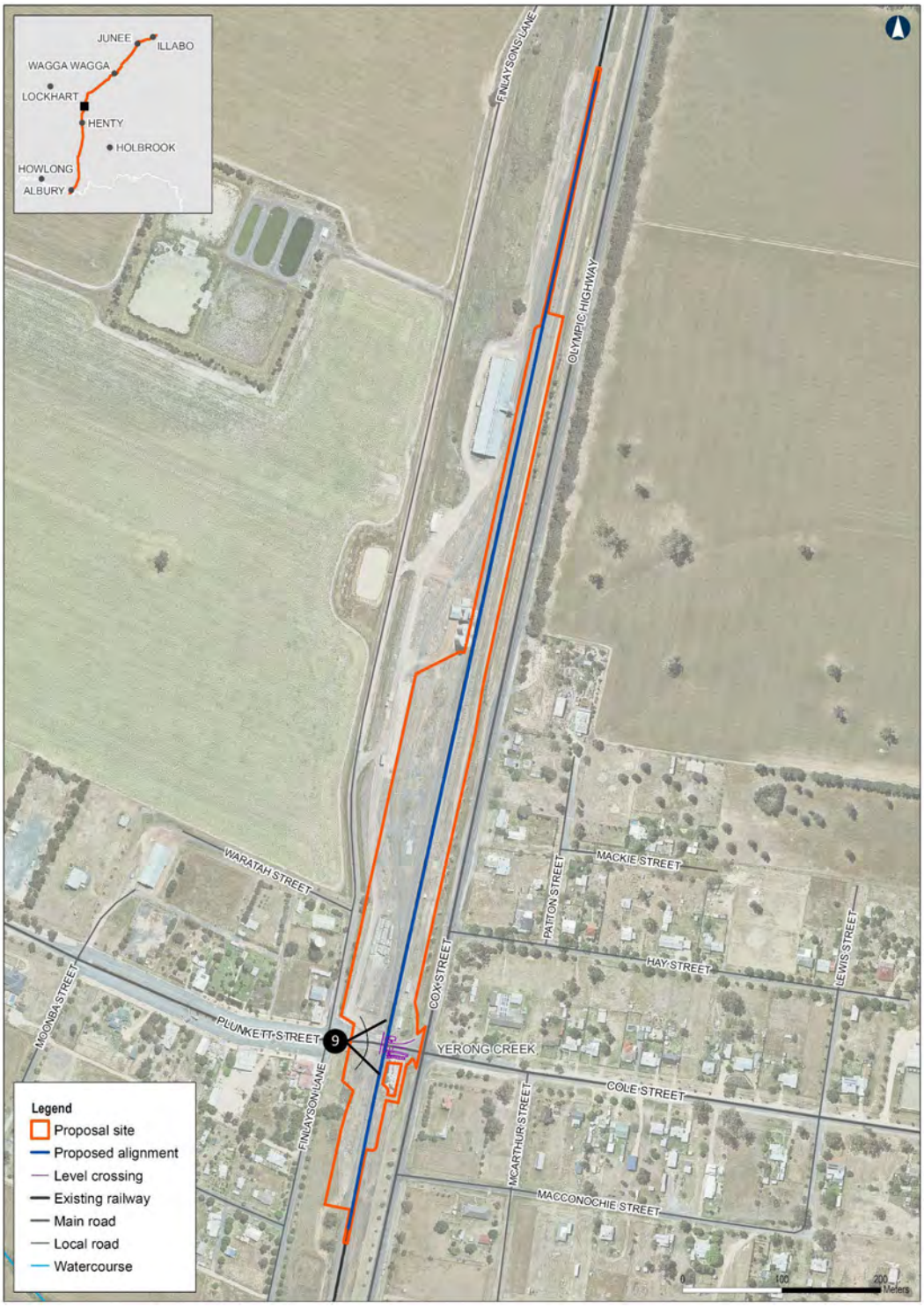


FIGURE 5-31 VIEWPOINT LOCATION PLAN – YERONG CREEK YARD CLEARANCES ENHANCEMENT SITE

The following section summarises the daytime visual impact identified in the representative viewpoint assessment.

Viewpoint 9: View east from Plunkett Street

FIGURE 5-32 VIEWPOINT 9: VIEW EAST FROM PLUNKETT STREET

Existing view: This view from within the Yerong Creek Urban Conservation Area (Lockhart LEP 2012), includes several historic buildings such as the local hotel (right of view) and church (background of view), both local landmarks within the town. Plunkett Street is very wide in this location and extends via a level crossing to become Cole Street to the east of the rail corridor in the background. The rail corridor can be seen in the middle ground, the corridor is an open grassed area and there are only a few trees to south (right of view). Single stacked freight and passenger trains would be viewed intermittently, passing through town in the middle ground of this view. There is a backdrop of vegetation, screening the scattered residential dwellings and other buildings.

Visual sensitivity: This view is located within the Yerong Creek Urban Conservation Area and includes several heritage character buildings. This view would be seen by local residents and visitors from the surrounding rural area. This view is of **local visual sensitivity**,

Visual impact during construction: A construction site would be established within the rail corridor, in the middle ground of this view. This work would be visible, unobstructed by vegetation, and would include the works to slew the mainline and two material laydown areas, one either side of the level crossing. The modification to the Cole Street level crossing would also be visible in the centre of this view. Overall, there would be a low magnitude of change to views from this area, and a **minor adverse visual impact** during construction.

Visual impact during operation: The new rail infrastructure would be minimal and consistent with the character of existing rail infrastructure. There would be more frequent trains visible from this location that would be taller, obstructing the view across the rail corridor. These trains would rise above the backdrop of trees and be visually dominant in contrast to the scattered, predominantly low rise surrounding development. Overall, there would be a moderate magnitude of change, and a **moderate visual impact** during operation.

#### 5.3.4.4 Assessment of night-time visual impact

Existing night time conditions and visual sensitivity: At night, Yerong Creek and the surrounding rural landscape would have low light levels, with lighting generally associated with existing commercial centre and residential development within the town, street lighting along Plunket Street and scattered rural residences across the surrounding landscape. Vehicles travelling along local roads such as the Olympic Highway, and trains travelling along the existing rail corridor at night, would also contribute to the light levels. Overall, this landscape is an area of low district brightness (A2) and has a **moderate visual sensitivity** at night.

Night time visual impact during construction: There would be night construction at this site during rail possessions and extended construction hours. This work would include task lighting, construction vehicle headlights and lighting associated with site offices, storage and laydown areas. This lighting would be located within the centre of town, to the north and south of the Cole Street rail crossing. These compounds would be located within the rail corridor and separated from the adjacent residential properties by Finlayson Street and the Olympic Highway. This lighting would be largely absorbed into the existing night scene and there would be a low magnitude of change. Overall, this would result in a **moderate-minor adverse visual impact** at night.

Night time visual impact during operation: Due to the additional trains using the corridor there would be more frequent train headlights seen along the rail corridor. This lighting would be directed along the corridor which is straight as it passes through town, and therefore there would not be any lighting directed towards the residential areas to the east and west of the rail corridor. The corridor is separated from the commercial areas in the west by the existing open space and Finlayson Street, and the residential dwellings to the east by the Olympic Highway. The intervening trees and distance would reduce any potential visual impact from the moving train headlights. While there may be additional direct light sources seen and a skyglow above the rail corridor, this would not noticeably alter the character of the town. Overall, this would result in a low magnitude of change and a **moderate-minor adverse visual impact** at night.

### 5.3.5 The Rock Yard clearances

At The Rock Yard clearances site the proposal would include modification of one gantry adjacent to Urana Street. Due to the small scale of these works there would not be any landscape or visual impacts.

### 5.3.6 Summary of impacts

The following tables contain a summary of the landscape and visual impacts identified in the Greater Hume – Lockhart precinct assessment.

TABLE 5-4 SUMMARY OF LANDSCAPE IMPACTS – GREATER HUME - LOCKHART

| | | Construction | | Operation | |
|---|---|---|---|---|---|
| **Landscape character area** | **Sensitivity** | **Magnitude of change** | **Impact** | **Magnitude of change** | **Impact** |
| **Culcairn pedestrian bridge and Culcairn Yard clearances** | | | | | |
| Culcairn rural town centre | Local | Low | Minor adverse | Moderate | Moderate adverse |
| **Henty Yard clearances** | | | | | |
| Henty rural town centre | Local | Low | Minor adverse | Moderate | Moderate adverse |
| **Yerong Creek Yard clearances** | | | | | |
| Yerong Creek rural town centre | Local | Low | Minor adverse | Low | Minor adverse |

TABLE 5-5 SUMMARY OF DAYTIME VISUAL IMPACTS – GREATER HUME - LOCKHART

| | | Construction | | Operation | |
|---|---|---|---|---|---|
| **Representative viewpoint** | **Sensitivity** | **Magnitude of change** | **Impact** | **Magnitude of change** | **Impact** |
| **Culcairn pedestrian bridge and Culcairn Yard clearances** | | | | | |
| 7. Views from the parkland reserve on Railway Parade | Local | Low | Minor adverse | Moderate | Moderate adverse |
| **Henty Yard clearances** | | | | | |
| 8. View north along Ivor Street | Neighbourhood | Low | Negligible | Moderate | Minor adverse |
| **Yerong Creek Yard clearances** | | | | | |
| 9. View east from Plunkett Street | Local | Low | Minor adverse | Moderate | Moderate adverse |

TABLE 5-6 SUMMARY OF NIGHT TIME VISUAL IMPACTS – GREATER HUME - LOCKHART

| | | Construction | | Operation | |
|---|---|---|---|---|---|
| **Night time visual receiver location:** | **Sensitivity** | **Magnitude of change** | **Impact** | **Magnitude of change** | **Impact** |
| **Culcairn pedestrian bridge and Culcairn Yard clearances** | | | | | |
| Culcairn rural town | Low | Low | Minor adverse | Low | Minor adverse |
| **Henty Yard clearances** | | | | | |
| Henty rural town | Moderate | Low | Moderate-minor adverse | Low | Moderate-minor adverse |
| **Yerong Creek Yard clearances** | | | | | |
| Yerong Creek rural town | Moderate | Low | Moderate-minor adverse | Low | Moderate-minor adverse |

## 5.4 Wagga Wagga

This section assesses the proposal in the Wagga Wagga precinct, including a review of the local planning context for the Wagga Wagga Shire Council area, key features of the proposal at each enhancement site, and potential landscape and visual impacts associated with the proposal during construction and operation, day and night. The assessment has been organised into each of the following enhancement sites, from south to north:

- Uranquinty Yard clearances
- Pearson Street bridge
- Wagga Wagga Station and surrounds, including:
    - Cassidy Parade pedestrian bridge
    - Edmondson Street bridge
    - Wagga Wagga Station pedestrian bridge
    - Wagga Wagga Station Yard clearances
- Bomen Yard clearances.

A summary of the landscape and visual impacts is provided at the end of this section.

### 5.4.1 Local Planning Context

The Wagga Wagga precinct is located in the Wagga Wagga City Council local government area. While this proposal is not assessed against the local government legislation and policies, the following local planning instruments and masterplans provide relevant landscape character and visual amenity policy and guidance for this area.

#### *Wagga Wagga Local Strategic Planning Statement*

The Wagga LSPS (Wagga Wagga Shire Council, 2020) is Council's plan to set the direction for Wagga Wagga's growth to 2040. The 20-year plan envisages Wagga Wagga being the southern capital of New South Wales and a city that is globally connected, culturally rich and vibrant, and economically diverse with high levels of liveability.

The proposal would be located within or adjacent to four 'Key industry clusters and activity areas' identified within Wagga LSPS. These are the: Kapooka Barracks, Wagga Wagga Health and Knowledge Precinct, Wagga Wagga CBD Precinct and Bomen Special Activation Precinct. The improvement of rail connections is identified as a priority in the structure plan, with freight and logistics projects such as the Riverina Intermodal Freight and Logistics Hub identified as projects that '*leverages the Federal Government's Inland Rail Project'*.

The existing Cassidy Parade pedestrian bridge is located adjacent to the Wagga Wagga Health and Knowledge Precinct and the existing Edmondson Street bridge is located adjacent to the Wagga Wagga CBD Precinct. These precincts are identified as '*key locations'* for '*renewal and intensification'*. In particular, the area north of the proposed Cassidy Parade pedestrian bridge enhancement site is identified as '*future student / health related accommodation'* with future development of up to three storeys anticipated in the *Wagga Wagga Health and Knowledge Precinct Master Plan*, refer to Figure 5-32 (Hames Sharley, 2019).

The Bomen Yard clearances enhancement site is located about 3.3 kilometres east of the proposed Northern Growth Area, targeted as the '*key area for urban expansion'* in Wagga Wagga.


FIGURE 5-33 WAGGA WAGGA HEALTH AND KNOWLEDGE PRECINCT MASTER PLAN

### *Wagga Wagga Local Environmental Plan 2010*

The Wagga Wagga LEP aims to co-ordinate development including the provision of public infrastructure and services whilst ensuring to '*avoid or minimise impacts on environmental values and protect environmentally sensitive areas*' (Clause 1.2.2c-d, City of Wagga Wagga, 2010b).

The enhancement sites are located mostly within the SP2 Infrastructure zone, which aims to '*provide for infrastructure and related uses*' (Land Use Table, SP2). The Uranquinty Yard clearances enhancement site is located in the centre of the town (adjacent to the RU5 Village zone) and includes a small area of RU1 Primary Production west of Sandy Creek. The Pearson Street bridge enhancement site includes a small part of land zoned for IN2 Light Industrial and SP1 Special Activities (correctional centre) use to the east of Pearson Street. The Cassidy Parade pedestrian bridge and Edmondson Street bridge are located in the centre of Wagga Wagga, with the bridge on ramp and off ramps located on land zoned for R1 General Residential use. The Bomen Yard clearances enhancement site includes a small area zoned IN1 General Industrial at Dampier Street.

There are numerous heritage items and heritage conservation areas identified in the LEP that are within or near the enhancement sites, including:

- Uranquinty silos
- Memorial Avenue, Pearson Street
- Gannawarra, 47 Pearson Street (dwelling)
- Uranquinty Hall
- Uranquinty School
- Wagga Wagga Showground
- Wagga Wagga Conservation Area
- Cassidy footbridge (Section 170 Heritage and Conservation Register)
- Mt Erin Convent, Chapel, High School and Grounds, Edmondson Street
- Wagga Wagga Railway Station and yard (local and State heritage register item)

- Wagga Wagga Former Stationmaster's Residence
- Former Best Street railway gatehouse
- South Wagga Public School
- Murrumbidgee Milling Company Flour Mill (former) and Outbuildings
- Bomen Railway Station (local and State heritage register item)
- Bomen Stationmaster's Residence.

The LEP aims to conserve the heritage significance of heritage items, including their '*settings and views*' (Clause 5.10).

### *Wagga Wagga Development Control Plan 2010*

The Wagga Wagga DCP (City of Wagga Wagga, 2010a) supports the Wagga Wagga LEP by providing additional objectives and controls for administering development. The proposed enhancement sites in the City of Wagga Wagga are not located in any of the urban release areas, nor are they close proximity to the '*visually prominent ridges'* and areas of '*higher ground'* such as Gelston Park and Gregadoo Hills south west of Wagga Wagga, which are considered to be important landscape features which '*establish the visual setting of the city and villages'* (Section 5.1).

The DCP provides guidance for development in the vicinity of heritage items to ensure development is '*designed and sited to protect the significance of the heritage item'* and '*minimise the impact on the setting of the item*' by:

*a) Providing an adequate area around the heritage item to allow its interpretation.*

*b) Retaining original or significant landscaping associated with the heritage item.*

*c) Protecting and allowing the interpretation of archaeological features associated with the heritage item.*

*d) Retaining and respecting significant views to and from the heritage item* (Section 3.2.4.C2).

The DCP considers landscaping to be an important aspect of development which '*complements good design'* (Section 2.3). It further suggests that '*trees, shrubs and green spaces can "soften" the impact of buildings*' (Section 2.3). The following are relevant landscape objectives for all developments subject to the DCP:

- *'Retain and protect existing vegetation, particularly large and medium trees, and conserve significant natural features of the site'*
- *'Encourage landscape that responds to existing site conditions' and 'local character'*
- *'Ensure the landscape adequately complements the proposed built forms and minimises the impacts of scale, mass and bulk of the development on the existing area and surrounding streetscapes, view sheds and neighbourhood amenity'* (Section 2.3).

### *Wagga Wagga Special Activation Precinct*

A Draft Master Plan (NSW DPIE, 2020) has been prepared for the Wagga Wagga Special Activation Precinct, which presents a long term vision for the precinct over the next 40 years. The Precinct is described as having a '*beautiful landscape setting, with rolling hills and fertile valleys*.' The master plan indicates that future development should '*have regard for the natural topography and views and vistas to and from the Precinct'*, including south westerly views from the Bomen Axe Quarry Aboriginal Place, and requires '*areas for revegetation and tree planting in the Precinct to minimise the visual impact associated with development'*, as shown in Figure 5-33. The Bomen Yard

clearances enhancement site is located at the southern end of the precinct, in what is identified as the industrial core (refer to Figure 5-33), including the heritage listed Railway Station. The landscape strategy for minimising visual impact proposes tree planting along the railway and adjacent road corridor of Byrnes Road (Figure 5-34).

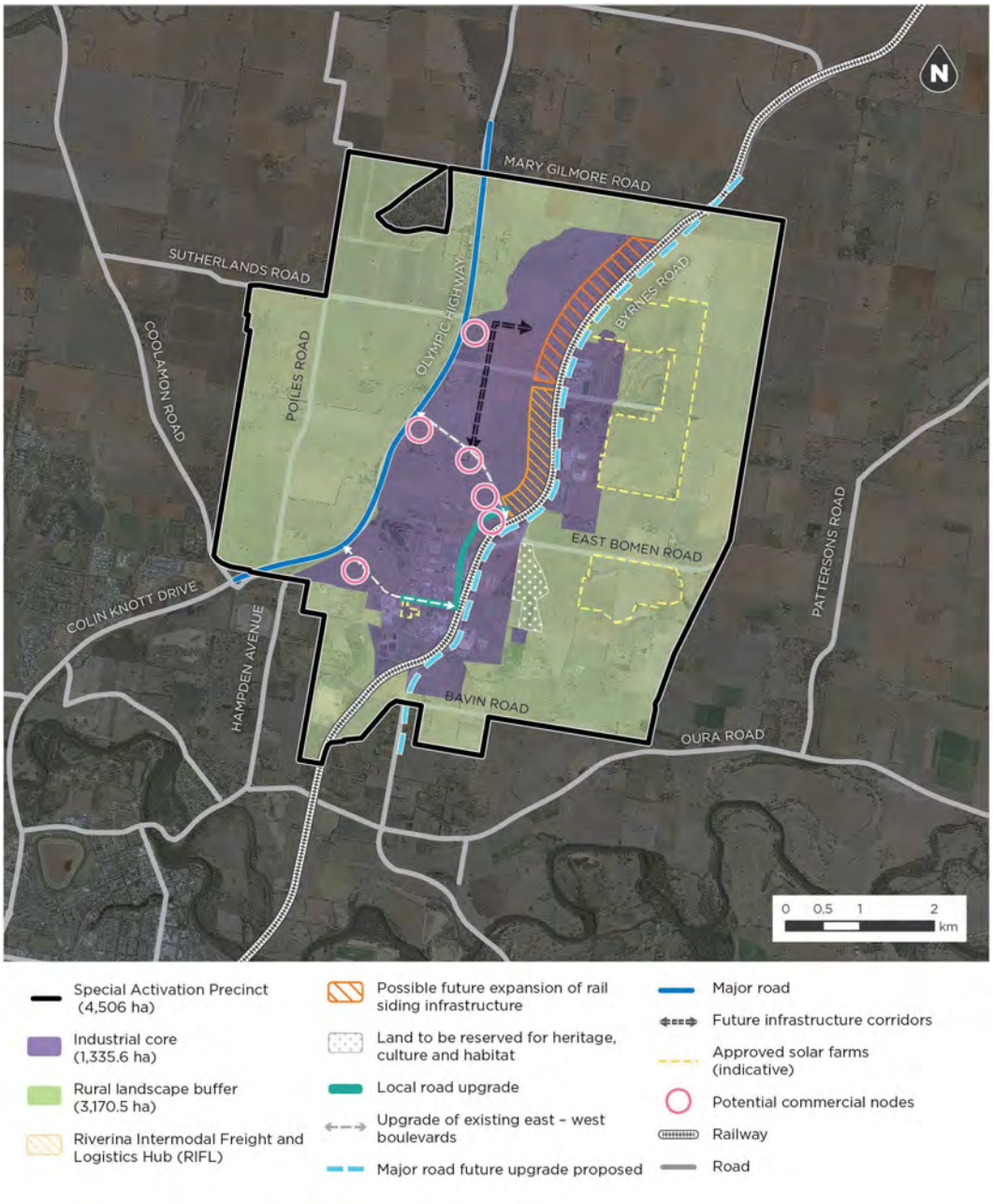


FIGURE 5-34 WAGGA WAGGA SPECIAL ACTIVATION PRECINCT DRAFT STRUCTURE PLAN (SOURCE: NSW DPIE, 2020, FIGURE 3)

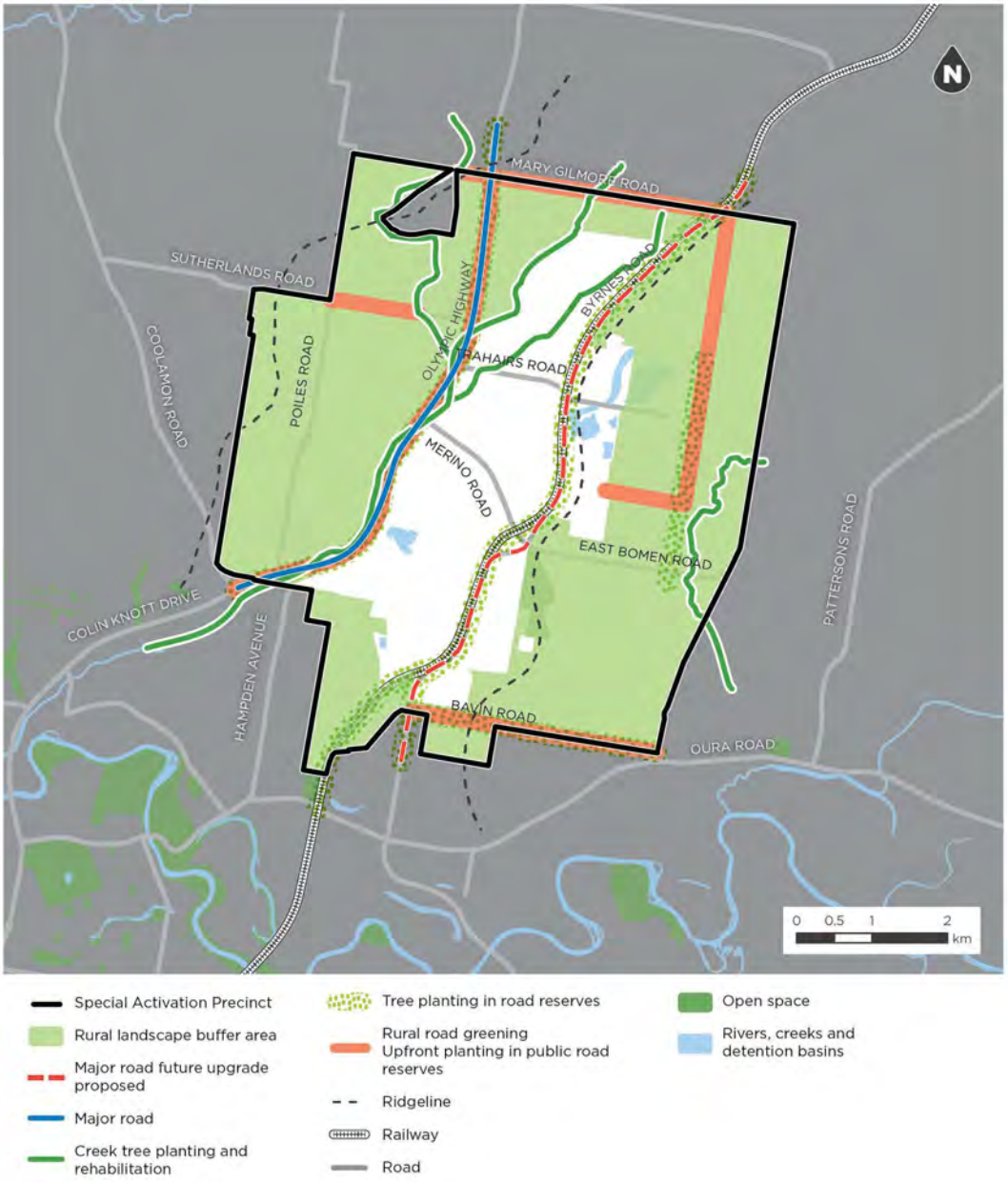


FIGURE 5-35 DRAFT LANDSCAPE STRATEGY FOR MINIMISING VISUAL IMPACT (SOURCE: NSW DPIE, 2020, FIGURE 7)

### 5.4.2 Uranquinty Yard clearances

#### 5.4.2.1 Description of the proposal

The proposal would be located within an existing rail corridor and include the following elements:

- Realignment of main line track and loop, and removal of the gantry
- Modification to the level crossing at Yarragundry Street, including the pedestrian crossing
- Widening of the Sandy Creek rail bridge

During construction there would be:

- Temporary compounds on the east and western side of the rail corridor south of Yarragundry Street, and east of the rail corridor to the south of the proposal site
- A crane pad south of Sandy Creek west of the bridge and temporary creek crossing
- Construction access via Olympic Highway, Yarragundry Street, through fields via Uranquinty Cross and Hanging Rock Roads.

Further details of construction are contained in Chapter 8 and operational elements in Chapter 9 of the EIS.

#### 5.4.2.2 Assessment of landscape impact

The following is an assessment of the landscape impact of the proposal on the Uranquinty rural town centre landscape character area, which includes the Uranquinty Yard clearances enhancement site and surrounding areas.

*Uranquinty rural town centre*

FIGURE 5-36 URANQUINTY RURAL TOWN CENTRE CHARACTER IMAGES

Existing conditions: This landscape character area includes the rural township of Uranquinty, a small town located on relatively flat land east of Sandy Creek. The town is centred on the rail corridor. The station, now closed, is mostly demolished and only the platform and a replacement blockwork signalling structure remain. Large steel and concrete grain silos are prominent structures to the north of the former station, typical of rural stations in this region, for the transportation of grain via rail. A linear parkland reserve along the southeastern side of the rail corridor, is a local landscape feature, and also a local heritage item (Wagga Wagga LEP 2010). This reserve includes a rest stop with public amenities, playground, picnic tables and seating, a memorial and formal garden. There are corridors of mature trees along Pearson Street, and street and the Olympic Highway including the 'Memorial Avenue' trees between the rail corridor and Pearson Street, also a local heritage item (Wagga Wagga LEP 2010). The township includes wide streets and several historic buildings such as the local hotel, hall and general store, which contribute to the character of the town. The settlement quickly disperses beyond the centre of town into rural properties.

Landscape sensitivity: Uranquinty is a small rural town. The open space and recreational areas along the rail corridor provide a recreational and ceremonial function within the centre of town. This reserve and trees also contribute to the character and amenity of the neighbouring residential properties and township. The small collection of unique built form and tree lined streets around the station, and associated views to and from this landscape provides a focal point within this rural area. Overall, this landscape character area is of **local landscape sensitivity**.

Landscape impact during construction: There would be construction compounds located within the existing rail corridor. There would be some vegetation clearing at Sandy Creek to widen the existing bridge structure. The built and landscape features that are unique to this landscape, such as the silos and existing mature trees along Pearson Street would remain. The scale of the construction activity would alter the character of a localised part of this landscape but be largely consistent with the character of the existing rail corridor. Overall, this would result in a low magnitude of change and a **minor adverse landscape impact**.

Landscape impact during operation: The character of the rail corridor would be retained and the new rail infrastructure would be consistent with the existing rail corridor. While there are currently trains seen intermittently from this location, the proposal would introduce taller and more frequent freight trains into this view, intensifying the rail character and reducing the peacefulness of the adjacent memorial, and amenity for recreational users in the reserve and at the playground. This change would result in a moderate magnitude of change and **moderate adverse landscape impact**.

#### 5.4.2.3 Assessment of daytime visual impact

##### *Visual catchment of the proposal*

Due to the predominantly flat landform views to the proposal (the visual catchment) would be restricted by existing vegetation and built form in areas surrounding the rail corridor. Views to the enhancement site would be limited to the northeast and southwest by the existing mature vegetation along the rail corridor. Views to the proposal would extend to include residential areas to the northeast along Pearson Street, and east, south and west across the open space reserve, including the memorial and playground, to the Olympic Highway and residential properties facing the highway. The proposed construction access at Uranquinty Cross Road would be seen from the road and nearby rural properties during construction.

*Representative viewpoint assessment*

Based on the visual catchment of the proposal, the following viewings have been selected to represent the range of views to the proposal:

- Viewpoint 10: View south west from Pearson Street
- Viewpoint 11: View north from Park beside Olympic Highway

Figure 5-36 identifies the location of these viewpoints.


FIGURE 5-37 VIEWPOINT LOCATION PLAN – URANQUINTY YARD CLEARANCES ENHANCEMENT SITE

Viewpoint 10: View south west from Pearson Street

FIGURE 5-38 VIEWPOINT 10: VIEW SOUTH WEST FROM PEARSON STREET

Existing view: This view along the rail corridor (left of view) includes Pearson Street and the adjoining single storey residences facing the rail corridor (centre of view). The landform is generally flat and the rail corridor and level rail crossing at Yarragundry Street (left of view) are at a similar elevation to the street. The remaining single platform of the former station (now closed) can be seen in the middle ground of view. Single storey freight trains and passenger trains would be visible, passing through, and not stopping at Uranquinty. The large steel and concrete silos, a local heritage item (Wagga Wagga LEP 2010), can be seen, glimpsed in the background of this view. The 'Memorial Avenue' trees between the rail corridor and Pearson Street are visible in the centre of view, also a local heritage item (Wagga Wagga LEP 2010).

Visual sensitivity: This view would be experienced by residents in adjoining residential properties and from vehicles, travelling along one of the main routes through the town. The historic station platform, silos and adjacent 'Memorial Avenue' trees are important local features in the view. This view is of **local visual sensitivity**.

Visual impact during construction: Much of the construction works would occur within the existing rail corridor and would be seen in the middle ground of this view. This work would include views to the demolition and removal of existing redundant rail infrastructure, including the gantry, and installation of new infrastructure along the proposal alignment, including works to modify the level crossing. There would be a laydown area to the south of Yarragundry Street, in the middle ground of the view. Construction traffic would also be seen in the foreground of this view, accessing the construction site via Yarragundry Street. While the works would be seen in close proximity, the landscape features seen in this view would not be removed, and the trees would provide some screening of the works. Overall, there would be a low magnitude of change and a **minor adverse visual impact** during construction.

Visual impact during operation: The new rail infrastructure would be consistent with the character of existing rail infrastructure, and largely absorbed into the view. However, there would be more frequent trains which are taller than those currently seen, visible from this location. These trains would obstruct views across the rail corridor as they pass and be more visually dominant as they

would be taller than the adjacent residential properties. Overall, there would be a moderate magnitude of change, and a **moderate adverse visual impact** during operation.

**Viewpoint 11: View north from park beside Olympic Highway**

FIGURE 5-39 VIEWPOINT 11: VIEW NORTH FROM PARK BESIDE OLYMPIC HIGHWAY

Existing view: This view from the reserve between the Olympic Highway and the rail corridor shows the playground in middle ground (left of view). The rail corridor, including intermittent single storey trains, can be seen crossing the view in the background. The rail corridor is partly screened and filtered through existing trees within the reserve. Beyond the rail corridor the 'Memorial Avenue' trees (a local heritage item, Wagga Wagga LEP 2010) can be seen, adjacent to Pearson Street. The view is enclosed by these and other trees along Pearson Street, with glimpses to buildings and a water tower in the background.

Visual sensitivity: This view is experienced by park users engaged in recreational activities. The view includes glimpses to the 'Memorial Avenue' trees, which are important local visual feature. This view is of **local visual sensitivity**.

Visual impact during construction: The construction works would occur within the existing rail corridor and would be seen in the middle and background of this view. This work would include the demolition and removal of existing redundant rail infrastructure, and installation of new infrastructure along the corridor. The existing trees along the rail corridor would remain and the trees within the reserve would provide some screening of the works. Overall, there would be a low magnitude of change, and a **minor adverse visual impact** during construction.

Visual impact during operation: The new rail infrastructure would not be prominent in this view, being consistent with the character of the existing rail infrastructure. However, there would be more frequent trains which are taller than those currently seen from this location. These trains would obstruct views across the rail corridor, enclosing the view, and would be visually dominant as they pass across the view. Overall, there would be a moderate magnitude of change, and a **moderate adverse visual impact** during operation.

#### 5.4.2.4 Assessment of night-time visual impact

Existing night time conditions and visual sensitivity: At night, Uranquinty and the surrounding rural landscape would have low light levels. There would be lighting in the town from residences and the commercial area, and lighting from rural residences scattered across the surrounding landscape. Vehicles travelling along the Olympic Highway and other local roads, and existing trains travelling along the existing rail corridor at night, would have moving headlights and contribute to the light levels. This landscape is an area of low district brightness (A2) and has a **moderate visual sensitivity** at night.

Night time visual impact during construction: At this enhancement site there would be night activity during rail possessions and during extended construction hours. There would be task lighting, lighting associated with site offices, storage and laydown areas, and construction vehicle headlights within the rail corridor. This lighting would be set back from the adjacent residences by Pearson Street and the Olympic Highway and absorbed into the existing night scene. Overall, there would be a low magnitude of change and a **moderate-minor adverse visual impact** at night.

Night time visual impact during operation: There would be additional trains using the corridor and therefore more frequent train headlights would be seen along the rail corridor. This lighting would be directed along the corridor and not towards the adjoining residences so that there may be additional direct light sources seen and a skyglow above the rail corridor, but there would not be light directed into adjacent residences. There would be some additional permanent lighting provided at the level crossing, with replacement flashing lights for motorists and pedestrians. This lighting would be set back from the residential areas and would not noticeably alter the character of the centre of town. Overall, there would be a low magnitude of change to this landscape which is of moderate sensitivity and a **moderate-minor adverse visual impact** at night during operation.

### 5.4.3 Pearson Street bridge

#### 5.4.3.1 Description of the proposal

The proposal would be located within the existing rail corridor and include the following elements:

- Lowering of 260 metres of main line track by up to two metres, including earthworks for cut batters, retaining walls to support the bridge and drainage works.

During construction there would be:

- Laydown areas proposed at the Council Depot (155 Fernleigh Road), Wagga Wagga Showgrounds and beside Urana Street (including site offices).
- Construction access via Urana Street, Cheshire Street and Fernleigh Road.

Further details of construction are contained in Chapter 8 and operational elements in Chapter 9 of the EIS.

#### 5.4.3.2 Assessment of landscape impact

The following is an assessment of the landscape impact of the proposal on the Pearson Street and rail corridor landscape, which includes the Pearson Street bridge enhancement site and surrounding areas.

*Pearson Street and rail corridor*

FIGURE 5-40 PEARSON STREET AND RAIL CORRIDOR CHARACTER IMAGES

Existing conditions: Pearson Street is a busy two lane road connecting the Sturt Highway in the north with Glenfield Road in the south, providing access over the existing Sydney to Melbourne rail corridor. The rail corridor passes under the Pearson Street bridge and there are groups of mature trees and shrubs, particularly to the south of the bridge. In this location, land use along this corridor is mixed, with light industrial development to the north of the bridge crossing, a Correctional Centre and depot to the south, and residential development, the Alexandra Park sport and recreation facilities to the northwest, and heritage listed Wagga Wagga Showgrounds to the east.

Landscape sensitivity: The Pearson Street bridge and adjacent rail corridor is experienced by local road users and by residents of nearby suburban areas south of Urana Street, as well as staff and visitors to nearby industrial sites, depots and centres. This landscape does not include any particular landscape features and is of **neighbourhood visual sensitivity**.

Landscape impact during construction: The proposal would be constructed within the existing rail corridor, and with some temporary laydown within the Wagga Wagga Showgrounds. This work would require some minor vegetation clearing and substantial earthworks associated with the lowering of the track and the construction of retaining structures. The existing mature trees would, however, be retained. While the construction activity would modify this landscape, there is no public access and minimal impact upon the vegetation cover. Overall, this would result in a low magnitude of change and a **negligible landscape impact**.

Landscape impact during operation: There would be retaining structures contained within the rail corridor, and the level of the rail corridor would be lowered, so that it would have less visibility from surrounding areas. The use would continue with additional trains which are taller and more frequent, intensifying the rail character of the corridor. Overall, these changes would be generally in character with this section of the rail corridor and there would not be any notable changes to the landscape features within or surrounding the enhancement site. Overall, there would be a low magnitude of change and a **negligible landscape impact**.

### 5.4.3.3 Assessment of daytime visual impact

*Visual catchment of the proposal*

At the Pearson Street bridge site, the visual catchment of the proposal would extend north along Pearson Street, to the industrial areas adjoining the rail corridor, east to Urana Street, including the adjacent residential properties, and the Wagga Wagga Showgrounds, south to Glenfield Road and west to include industrial sites along the rail corridor, including the Council Depot. The proposed construction site access would also be visible at Fernleigh Road from the road and nearby residences.

*Representative viewpoint assessment*

Based on the visual catchment of the proposal, the following viewing locations were selected as representative of the range of views to the proposal:

- Viewpoint 12: View east from Pearson Street bridge
- Viewpoint 13: View west from Urana Street

Figure 5-40 identifies the location of this viewpoint. The following section summarises the daytime visual impact identified in the representative viewpoint assessment.

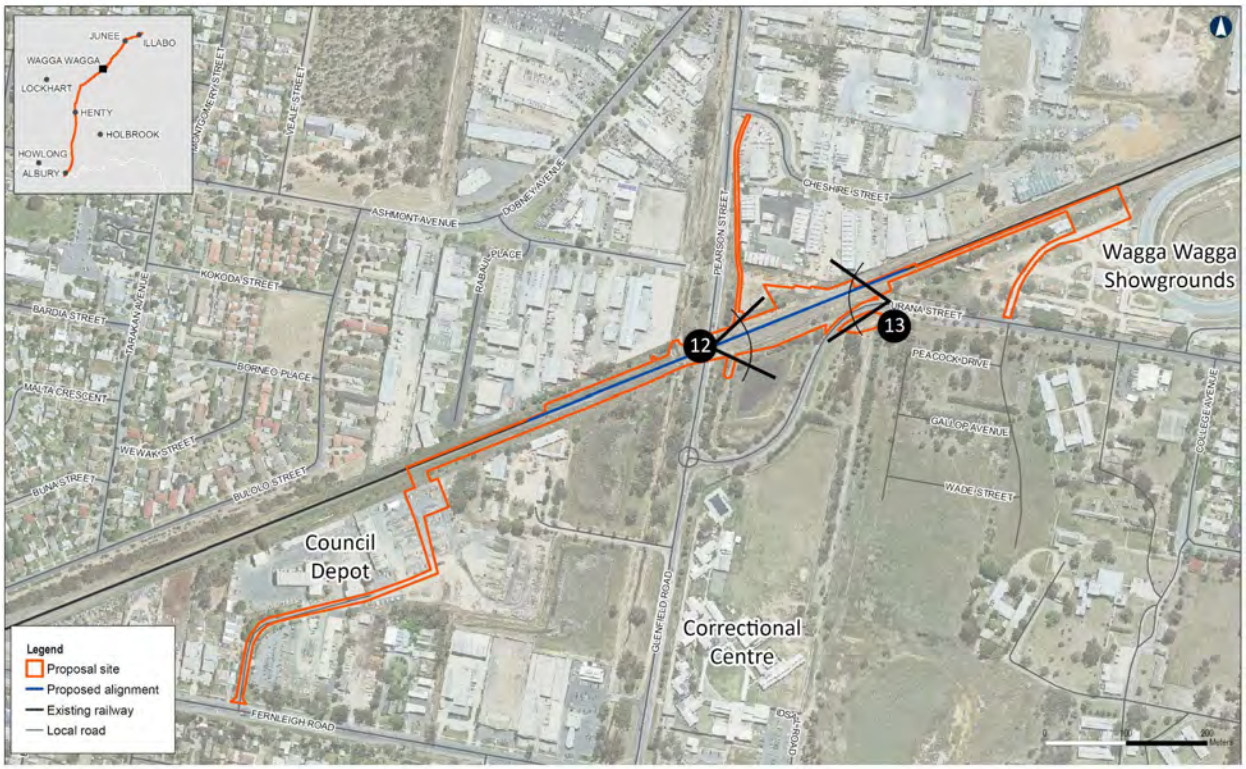


FIGURE 5-41 VIEWPOINT LOCATION PLAN – PEARSON STREET BRIDGE ENHANCEMENT SITE

**Viewpoint 12: View east from Pearson Street bridge**

Existing view: This view from the Pearson Street bridge is elevated above the rail corridor so that views along a length of the corridor can be seen. The rail corridor in this location includes a single track with a wide grassed reserve on either side used for material storage including ballast. Single storey freight trains and passenger trains would be seen travelling along the corridor in the centre of this view. There are scattered mature trees and shrubs along the corridor, providing screening of adjacent uses, including the low-rise light industrial development to the north (left of view) and the Correctional Centre showground and residential development to the south (right of view) of the rail corridor.

FIGURE 5-42 VIEWPOINT 12: VIEW EAST FROM PEARSON STREET BRIDGE

Visual sensitivity: This view is mainly experienced from vehicles travelling at moderate speed along Pearson Street bridge, and less frequently by pedestrians using the bridge footpath. The view does not include any areas of local scenic value or local landscape features. This view is of **neighbourhood visual sensitivity**.

Visual impact during construction: Much of the earthworks and retaining wall construction would occur within the existing rail corridor, under the bridge and out of view. There would, however, be elevated views to the demolition and removal of existing redundant rail infrastructure, including use of large-scale construction equipment and machinery, stockpiles of materials (such as ballast, soil and rail tracks). Works to install the rail tracks and drainage infrastructure (such as culverts) and relocation of utilities may also be seen.

Overall, the works would be largely consistent with and absorbed into the character of the rail corridor, which already includes stockpiling and associated rail infrastructure. This would result in a low magnitude of change and a **negligible visual impact**.

Visual impact during operation: Views to the rail corridor would remain largely unchanged with the lowered track section being beneath the bridge and out of view. There would, however, be additional freight trains visible travelling along the corridor. These trains would be taller and more frequent. The height of these trains would be similar to the scale and character of the adjacent industrial scale buildings and as they are viewed from above, they would not noticeably obstruct views to the surrounding landscape. Overall, these changes would be in character with views to the existing rail corridor and not contrast with the adjacent industrial land uses, resulting in a low magnitude of change and a **negligible visual impact** during operation.

Viewpoint 13: View west from Urana Street

FIGURE 5-43 VIEWPOINT 13: VIEW WEST FROM URANA STREET

Existing view: This view includes the existing rail corridor across the two lane Pearson Street, adjacent to a group of residential properties in Turvey Park. The track in this location is raised slightly above the level of the street. There is fencing and access gates along the southern rail corridor boundary and powerlines seen overhead, crossing the track. The Pearson Street bridge is visible in the middle ground of this view, partially screened by existing vegetation along the adjacent road reserve.

Visual sensitivity: This view would be briefly glimpsed from vehicles travelling along Urana Street and from the dwellings facing Pearson Street and the rail corridor. The view does not contain any areas of local scenic value or any local landscape features and is of **neighbourhood visual sensitivity**.

Visual impact during construction: The proposed construction works would occur within the existing rail corridor, in the middle ground of view. This would include earthworks and the construction of the retaining structures to lower the tracks in the vicinity of the bridge, site offices and a compound along the rail corridor, seen in the centre of the view. The existing vegetation along the rail corridor would be retained and provide some screening to the track lowering works. Overall, as the works would be set back from the viewer, seen within the context of the existing rail corridor and backdrop of industrial development and partly screened by existing vegetation, there would be a low magnitude of change during construction and a **negligible visual impact**.

Visual impact during operation: There would be some minor glimpses to the section of track lowering under the bridge, as the cutting would obstruct the view to the rail corridor, making it less visible than the existing at grade situation. There would, however, be additional freight trains visible intermittently, travelling along the corridor. These trains would be taller and more frequent. Part of the additional height would be screened by the cutting so that the overall height would not be substantially greater in this section of the corridor. While the taller freight trains would block the view to the industrial areas and vegetated areas in the background of this view, they would rise to the underside of the bridge and not protrude above the skyline in this view.

Overall, the visibility of the trains would be reduced by the cutting, and the proposal would be generally compatible with the existing character of the rail corridor and the backdrop of industry. As such, the proposal would be generally in character with this view and there would be a low magnitude of change. This would result in a **negligible visual impact** during operation.

#### 5.4.3.4 Assessment of night-time visual impact

Existing night time conditions and visual sensitivity: At night, the landscape in the vicinity of Pearson Street bridge would have moderate light levels associated with a mix of industrial and residential areas surrounding the rail corridor. Vehicles travelling along local roads such as Pearson Street, and trains travelling along the existing rail corridor at night, would contribute to the light levels. The sky glow from other parts of Wagga Wagga would also influence this character area, including the Correctional Centre along Glenfield Road and the showgrounds along Urana Street, particularly during night time events. Overall, this landscape is an area of medium district brightness (A3) and has a **low visual sensitivity** at night.

Night time visual impact during construction: There are no night works proposed in this location. However, there may be some security lighting associated with the site offices, storage and laydown areas. This lighting is likely to be absorbed with the surrounding area and there would be a low magnitude of change to this landscape which is of low sensitivity, and a potential **minor adverse visual impact** at night.

Night time visual impact during operation: There would be additional trains using the corridor and therefore more frequent train headlights would be seen along the rail corridor. This lighting would be directed along the corridor and not towards the adjoining industrial or residential areas. As such, the headlights would be seen intermittently from the road corridor, with some screening by the roadside and rail corridor vegetation, but there would not be light directed towards the road or into adjacent residences. Overall, there would be a low magnitude of change to this landscape which is of low sensitivity and a **minor adverse visual impact** at night during operation.

### 5.4.4 Wagga Wagga Station and surrounds

#### 5.4.4.1 Description of the proposal

The following enhancement sites are located within the Wagga Wagga Station and surrounds:

- Cassidy Parade pedestrian bridge
- Edmondson Street bridge
- Wagga Wagga Station pedestrian bridge
- Wagga Wagga Yard clearances

The proposal would be located within an existing rail corridor and include the following elements:

- Cassidy Parade pedestrian bridge
  - New shared user overbridge between Cassidy Parade and Brookong Avenue, raising the existing bridge height by about 2.5 metres, with anti-throw screens, stairs and ramps
- Edmondson Street bridge
  - New road overbridge at Edmondson Street, raising the existing bridge height by about three metres
  - retaining walls extending both sides of the bridge
  - a shared path on the eastern side
- Wagga Wagga Station pedestrian bridge
  - New shared user overbridge at Wagga Wagga Station, raising the existing bridge height by about two metres, with anti-throw screens
  - Stairs and ramps connecting to Station Place and Railway Street
- Wagga Wagga Yard clearances
  - Track realignment and gantry modification and removal at Wagga Wagga Station.

During construction there would be:

- Cassidy Parade pedestrian bridge
  - A section of Cassidy Parade would be closed
  - Crane pads would be established to the north and south of the rail corridor in the vicinity of the existing bridge
  - Construction access via Brookong Parade through the Telstra Depot, and Cassidy Parade.
- Edmondson Street bridge
  - Little Best Street and Edmondson Street would be closed between Edward and Erin Streets
  - Construction compound would be established to the south of the rail corridor on Railway Street
  - Construction access via Donnelley Avenue, Railway Street and Edmondson Street.

- **Wagga Wagga Station pedestrian bridge**
    - Crane lift pads would be established to the north and south of the rail corridor in the vicinity of the existing bridge
    - Construction compound to the east of the existing footbridge and south of the railway corridor and Wagga Wagga Station Platform building
    - Construction access via Station Place and Railway Street.

Further details of construction are contained in Chapter 8 and operational elements in Chapter 9 of the EIS.

#### 5.4.4.2 Assessment of landscape impact

The study area in the vicinity of the enhancement sites at Wagga Wagga Station and surrounds include the following landscape character areas which may be impacted by this proposal:

- Cassidy Parade and Brookong Avenue residential areas
- Edmondson Street residential area and schools
- Wagga Wagga Station heritage landscape.

The location of these areas is shown on Figure 5-43.

The following section includes an assessment of the landscape impact of the proposal on each of these character areas.


FIGURE 5-44 WAGGA WAGGA STATION AND SURROUNDS LANDSCAPE CHARACTER AREAS

### *Cassidy Parade and Brookong Avenue residential area*

Existing conditions: The existing Cassidy Parade pedestrian bridge and rail corridor pass through a predominantly residential area to the south of the Wagga Wagga town centre. The residential properties to both the north and south of the rail corridor, and the Mount Erin Convent (now part of the Mount Erin Boarding School and Kildare Catholic College), are included in the Wagga Wagga Conservation Area. The residential area is characterised by small single storey timber and brick cottages. The buildings and grounds of Mount Erin Convent, located to the south of the rail corridor and east of the existing bridge, includes '*an excellent grouping of historic structures that includes some impressive individual buildings'* making it '*a notable and attractive landmark in its local area'* (OEH, 2012). The '*aesthetic qualities'* of the buildings and grounds '*contributes positively to the streetscape of the area and contributes to the local community's sense of place'* (OEH, 2012).

The existing rail corridor is in a small cutting in this section of the corridor and an existing bridge provides access over the rail corridor, between Cassidy Parade and Brookong Avenue. This pedestrian bridge forms part of the Burke link cycle route in Wagga City Council's Active Travel Plan and is listed on the ARTC Section 170 heritage register. There is some vegetation, including a mixture of mature ornamental palms, native trees and shrubs, along the southern side of the rail corridor and a swing set located in the Kildare Street playground, adjacent to the rail corridor, near the entry to the Mount Erin Convent, Erin Earth Centre gardens.

The areas to the north of the rail corridor are also a part of the proposed Wagga Wagga Health and Knowledge Precinct, a mixed-use precinct surrounding the city's two major hospitals, including Wagga Base Hospital and Calvary Riverina Hospital. There is a large Telstra depot site to the east of the bridge, accessed via a small entrance at Brookong Avenue. The depot site is identified as '*future student / health related accommodation'* in the *Wagga Wagga Health and Knowledge Precinct Master Plan* (Hames Sharley, 2019). The implementation of this strategy would see this site redeveloped with buildings up to three storeys high.

Landscape sensitivity: This area includes a concentration of heritage character dwellings and several heritage buildings and structures that are recognised in the Wagga Wagga LEP 2010 for their 'aesthetic qualities' (OEH, 2012). The landscape is currently experienced by residents and their visitors, as well as staff at the depot site. There would be locals using the swing set for recreation. In addition, the redevelopment of the Wagga Wagga Health and Knowledge Precinct zoning, would encouraging additional users to this area, as will the upgrade of cycle route. Overall, this landscape is of **local landscape sensitivity**.


FIGURE 5-45 CASSIDY PARADE AND BROOKONG AVENUE RESIDENTIAL AREA CHARACTER IMAGES

Landscape impact during construction: While the existing Cassidy Parade pedestrian bridge is being demolished and the new bridge constructed, the north-south connectivity between the residential areas and access to the school would be temporarily reduced. This would include the temporary closure of part of Cassidy Parade to accommodate a crane pad to install the bridge. The swing set and some exiting trees on the southern side of the rail corridor would also be removed, resulting in a temporary loss of a local recreation facility and a reduction in the level of shade cover and amenity along Cassidy Parade. The use of large machinery such as cranes and

piling rigs, would alter the character of this area of the rail corridor for adjacent residences and the school grounds of Mount Erin Boarding School and Kildare Catholic College. Overall, there would be a moderate magnitude of change and a **moderate adverse landscape impact** during construction.

Landscape impact during operation: A new shared user overbridge would reconnect with the Burke link cycle route. The new bridge would have a larger footprint, with long sections of ramp extending along the rail corridor. There would be some vegetation replaced along the northern side of the rail corridor, the swing set would be reinstated, and Cassidy Parade would be reopened. The bridge would potentially overshadow Cassidy Parade to the south during mid-winter. The bridge would introduce users to locations elevated above the adjacent residences and environmental gardens at the school and may result in overlooking. While there would be a considerable improvement in pedestrian accessibility due to the improved bridge, there would be some adverse effects due to the larger footprint and removal of vegetation. Overall, there would be a low magnitude of change and a **minor adverse landscape impact**.

### *Edmondson Street bridge landscape*

Existing conditions: The existing Edmondson Street bridge is a four lane road bridge with pedestrian footpaths on either side. This bridge forms part of the city centre to Botanic Gardens walking trail. This area includes a number of schools and several residential streets, located along the rail corridor. This includes the South Wagga Wagga Primary School to the northeast of the rail corridor, Kildare Catholic College and Mount Erin Boarding School to the southwest, and Wagga Wagga High School and Wagga Wagga Tafe to the south. This area is included in the Wagga Wagga Conservation Area. The residential area is characterised by small single storey timber and brick cottages, and the schools include several visually prominent predominantly brick buildings. The buildings and grounds of Mount Erin Convent (now part of the Kildare Catholic College and Mount Erin Boarding School), '*a notable and attractive landmark in its local area*' (OEH, 2012). The heritage listed Wagga Wagga station is located to the east of the bridge and the State heritage listed platform building can be seen from the bridge.

The existing rail corridor is in a small cutting in this section of the corridor. The existing road bridge is located on an embankment with brick walls facing the rail corridor. There is dense vegetation along the southwestern side of the bridge, alongside the Kildare Catholic College and Mount Erin Boarding School and extending along the southern side of the rail corridor. There is also some vegetation along the northern side of the rail corridor adjacent to the residences on Donnelley Avenue and some individual trees along the bridge embankment extending north along Little Best Street. There are trees within the Wagga Wagga Public School located adjacent to the bridge in the northeast, however, the bridge embankment to the south east has been cleared of vegetation and is open to the adjacent residences.

FIGURE 5-46 EDMONDSON STREET BRIDGE LANDSCAPE CHARACTER IMAGES

Landscape sensitivity: This area includes a concentration of heritage character dwellings and several heritage buildings and structures that are recognised in the Wagga Wagga LEP 2010 for their 'aesthetic qualities' (OEH, 2012). The landscape is currently experienced by residents and their visitors, as well as students attending the schools. This bridge provides a main route into town and is heavily trafficked. Overall, this landscape is of **local landscape sensitivity**.

Landscape impact during construction: The Edmondson Street bridge would be demolished and a new bridge constructed. This would temporarily reduce north-south connectivity between the residential areas and access to the schools. The new bridge would have a larger footprint and require the removal of the trees on the southwestern and north western side of the bridge. This would reduce the shade cover and amenity for the adjacent streets and school. The use of large machinery such as cranes and piling rigs, would alter the character of this area of the rail corridor for adjacent residences and the school grounds. Overall, there would be a moderate magnitude of change and a **moderate adverse landscape impact** during construction.

Landscape impact during operation: A new road bridge would be provided over the rail corridor. This bridge would be wider and taller and therefore have a larger footprint. Although there would be some vegetation reinstated along the road bridge, the large retaining walls extending along the bridge ramps would reduce the amenity and shade cover of adjacent streets. There would be a new and wider shared user footpath along the bridge, providing north-south connection across the rail corridor. However, this pathway would be located on the eastern side of the bridge only, reducing the local permeability and cross corridor accessibility for pedestrians. Pedestrians using the new shared user footpath may overlook the rear garden of adjacent residences on Erin Street and outdoor areas of South Wagga Wagga Public School, due to the increased height of the bridge. The bridge would also overshadow some properties on Erin and Little Best Streets in winter, due to the increased height of the bridge.

While there would be some improvements in pedestrian accessibility, due to the improved pedestrian footpath and connections, there would be some adverse effects due to the larger footprint of the bridge, and the reduced area available for roadside vegetation to the west. Overall, there would be a low magnitude of change and a **minor adverse landscape impact**.

### *Wagga Wagga Station heritage landscape*

Existing conditions: This area is centred on the State heritage listed Wagga Wagga railway station precinct, which is a '*prominent landmark at the end of Wagga Wagga's main street and is an important townscape feature'* (OEH, 2009b). The striking station building tower terminates a view south through the centre of town, along Bayliss Street and Railway Parade. The residential area to the south of the station is also part of the Wagga Wagga Conservation Area and characterised by single storey brick and timber cottages tree lined streets. In this location the rail corridor is in a slight depression, below Railway Street to the south. There are ornamental gardens within the rail corridor, new plaza and streetscape planting to the north of the main station building, and some mature trees along the southeastern boundary of the rail corridor. The existing footbridge is a steel lattice structure, extending between Railway Street and the station. The bridge is a part of the heritage listing and has a character consistent with the steel lattice style bridges across the rail network. This bridge forms part of the city centre to Botanic Gardens walking trail.

Landscape sensitivity: The station is an important entrance point to Wagga Wagga and attracts a large number of travellers using the station but also local residents using the existing footbridge to cross the rail corridor and access the local schools and town centres. Due to the concentration of heritage buildings of State significance, the garden setting of the station, and the surrounding schools and residences being within a heritage conservation area, this landscape is of **regional landscape sensitivity**.

FIGURE 5-47 WAGGA WAGGA STATION HERITAGE LANDSCAPE CHARACTER IMAGES

Landscape impact during construction: The existing Wagga Wagga Station pedestrian bridge (Mothers Bridge) would be demolished and a new pedestrian bridge constructed. During this time the north-south connectivity between the residential areas and access to the school would be reduced. There would also be some impact on vehicle circulation around the station in the vicinity of the enhancement site and the reduction in available car parks. There would be site compounds and crane pad sites on either side of the rail corridor for the installation of the new pedestrian bridge. This bridge would have a larger footprint and require the removal of some trees on the northern side of the rail corridor, however, the heritage listed gardens within the corridor would be protected and retained. The use of large machinery such as cranes and piling rigs, would alter the character of this area of the rail corridor for adjacent residences and the adjacent community centre and school. Overall, there would be a moderate magnitude of change and a **high-moderate adverse landscape impact** during construction.

Landscape impact during operation: A new pedestrian bridge would be provided over the rail corridor. This bridge would be wider and taller, creating a larger footprint within the rail corridor and adjacent streets. The gardens and footpaths to the north of the rail corridor would be reinstated, restoring the local permeability and cross corridor accessibility for pedestrians. There ramping structure would be much longer, extending between the rail corridor and adjacent streets. There may be some overshadowing to properties to the north and south of the rail corridor, due to the increased height of the bridge. Pedestrians using the ramps on the northern side of the rail corridor may also overlook the outdoor areas of the adjacent community facility and former Station Masters residence (now a private residence), due to the increased heigh of the ramps.

The design of the new bridge would be sympathetic but not mimic the heritage character of the station. While there would be some improvements in pedestrian accessibility due to the improved accessibility standard of the bridge, there would be some adverse effects due to the larger footprint of the bridge, and the resulting overlooking and overshadowing effects of the scale of the structure. Overall, there would be a low magnitude of change and a **moderate adverse landscape impact**.

#### 5.4.4.3 Assessment of daytime visual impact

##### *Visual catchment of the proposal*

Generally, due to urban setting, the potential visual catchment of the proposal would be constrained by the rail side landform, existing built form and vegetation along the rail corridor and nearby streets. As such, each of the three new replacement bridge structures would have a separate visual catchment.

Cassidy Parade pedestrian bridge:

The visual catchment of the proposal in the vicinity of the Cassidy Parade pedestrian bridge would extend east and west along the rail corridor and be somewhat contained by the existing vegetation and rail cuttings. The visual catchment would also extend to the residential properties located to the north and south of the rail corridor in the vicinity of the bridge. Those properties to the south of the corridor would view the new bridge and additional trains across Cassidy Parade and the works would be partly screened by existing vegetation within the rail corridor in oblique views from the closer to Norman and Kildare Streets. There are several garages within the properties opposite the rail corridor that reduces the number of dwellings within close proximity to the enhancement site. The residential properties to the north would also have views at closer proximity over their rear gardens. This would include views to the elevated sections of the bridge and ramps. Views would be possible from areas of Brookong Avenue (Refer to Figure 5-47).


FIGURE 5-48 VISUAL CATCHMENT OF THE PROPOSAL – CASSIDY PARADE PEDESTRIAN BRIDGE

Edmondson Street bridge:

The visual catchment of the Edmondson Street bridge would extend east and west along the rail corridor but be somewhat contained by the rail cutting and existing trees along the rail corridor. To the west the curving rail corridor and existing Telstra facility buildings reduce the potential visibility of the bridge from the residential areas to the west. Similarly, views from within the Kildare Catholic College and Mount Erin Boarding to the south west of the bridge would be somewhat contained by the existing trees within the school grounds.

There would be views from areas to the north along Little Best Street and south along Edmondson Street. This would include views from the residences on Little Best Street, northwest of the bridge and the Wagga Wagga Public School northeast of the bridge. The visual catchment would also extend east to the Wagga Wagga Station and adjacent residences on Railway Street. The landform rises to the south of the enhancement site and there may be glimpses to the new bridge from the elevated areas near Coleman Street about 400 metres to the south. (Refer to Figure 5-48).


FIGURE 5-49 VISUAL CATCHMENT OF THE PROPOSAL – EDMONDSON STREET BRIDGE

Wagga Wagga Station pedestrian bridge:

The visual catchment of the Wagga Wagga Station pedestrian bridge would extend north to the adjacent community facilities, and northeast into the entry plaza and carparking areas at the entry to the Wagga Wagga Station. These views would be contained by the existing row of trees along the boundary with the former Station Masters residence. The Station building would screen views to the main bridge structure, however, there would be views to the new bridge from the station platforms which face south and along the rail corridor. The visual catchment would extend east along the rail corridor and south to the residential properties opposite the station. As the landform rises to the southwest, there may be views from the upper level of buildings within the Wagga Wagga High School and Tafe, north of Coleman Street. (Refer to Figure 5-49).


FIGURE 5-50 VISUAL CATCHMENT OF THE PROPOSAL – WAGGA WAGGA STATION PEDESTRIAN BRIDGE

*Representative viewpoint assessment*

Based on the visual catchment of the proposal, the following viewing locations were selected as representative of the range of views to the proposal:

- Viewpoint 14: View north west from Cassidy Parade
- Viewpoint 15: View south from Brookong Avenue
- Viewpoint 16: View north along Edmondson Street
- Viewpoint 17: View south from Best Street
- Viewpoint 18: View east along Railway Street
- Viewpoint 19: View south from Station Place.

Figure 5-50 identifies the location of these viewpoints.

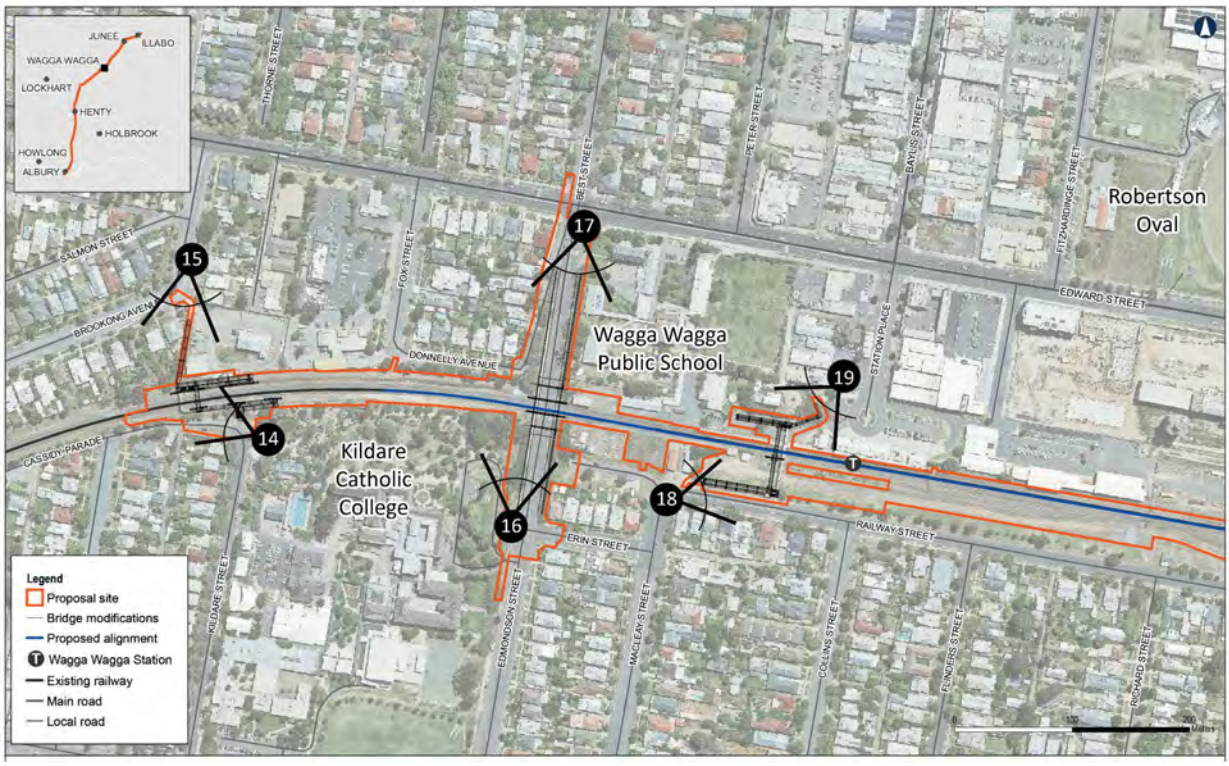


FIGURE 5-51 VIEWPOINT LOCATION PLAN – WAGGA WAGGA STATION AND SURROUNDS

The following sections summarise the daytime visual impact identified in the representative viewpoint assessment.

Viewpoint 14: View north west from Cassidy Parade


FIGURE 5-52 VIEWPOINT 14: VIEW NORTH WEST FROM CASSIDY PARADE


FIGURE 5-53 VIEWPOINT 14: VIEW NORTH WEST FROM CASSIDY PARADE, PHOTOMONTAGE (INDICATIVE LANDSCAPE TREATMENTS, SUBJECT TO DETAIL DESIGN)

Existing view: This view shows the existing Cassidy Parade pedestrian bridge partly screened by existing vegetation. The rail corridor is in cut and out of view. Trains using this section of the corridor would be seen over the rail corridor. The northern and southern ramps are visible, extending between the track and adjacent streets. Mature trees and shrubs along Cassidy Parade filter views to the existing footbridge and trains passing along the rail corridor. A building at the Wagga Wagga Base Hospital can be glimpsed above the vegetation in the far background of this view. The residential area in the foreground of view includes a single storey cottages with established gardens, forming part of Wagga Wagga Conservation Area (Wagga Wagga LEP 2010). The Kildare Road playground, a small area of open space with trees and a swing set (right of view) can be seen adjacent to the rail corridor. Trees within the grounds of the Erin Earth Centre (part of the Kildare Catholic College and Mount Erin Boarding), also a local heritage item (Wagga Wagga LEP 2010) can be seen to the east (right of view).

Visual sensitivity: This view is available from a local street near the entry to the Erin Earth Centre. It would attract local residents to the small playground and as a crossing location. While this view is from a street within the heritage conservation area, it is oriented towards the rail corridor. Overall, this view is of **local visual sensitivity**.

Visual impact during construction: Works to demolish and construct the Cassidy Parade pedestrian bridge would be seen in the middle ground of this view. This would include the establishment of a construction site along the rail corridor and extending into the northern road reserve of Cassidy Parade (left of view) and into the adjacent park (right of view). The playground and existing trees located within the construction footprint would be removed, including several mature trees adjacent to the playground (right of view) and along the northern side of Cassidy Parade, beside the rail corridor (centre of view). There would be construction deliveries and large equipment including a crane established on Cassidy Parade, which would rise above the surrounding vegetation and be prominent in this view. The removal of vegetation would open up the view to the rail corridor and views to the residential areas and hospital to the north of the rail corridor. Overall, the construction activity would be in seen in close proximity and the character, and while it would be seen in the context of the existing rail corridor, it would contrast with scale and character of the leafy residential street. Overall, the proposed works would result in a moderate magnitude of change, and a **moderate adverse visual impact** during construction.

Visual impact during operation: The new Cassidy Parade pedestrian bridge would be a larger structure, being taller and with both stairs and ramps. The bridge would rise above the leafy backdrop of leafy residential development and seen amongst the hospital buildings which are of a larger scale. The rail corridor would be more visible with taller trains more visible above the rail corridor and passing more frequently. The bridge structure would be of a larger scale and would be more prominent, replacing areas where there were trees. Overall, the proposal would result in a moderate magnitude of change and a **moderate adverse visual impact** during operation.

Viewpoint 15: View south from Brookong Avenue

FIGURE 5-54 VIEWPOINT 15: VIEW SOUTH FROM BROOKONG AVENUE

Existing view: This view shows the northern entrance to the Cassidy Parade pedestrian bridge, consisting of a narrow footpath located between steel fences. The footpath ends with a wide driveway leading to a Telstra depot. A large shed and vehicle parking within this facility are visible to the east (left of view), also identified as '*future student / health related accommodation'* with future development of up to three storeys, identified in the *Wagga Wagga Health and Knowledge Precinct Master Plan* (Hames Sharley, 2019). There is a single storey bungalow with established gardens to the west (right of view) of the view. The trees within this property screen views to the existing footbridge, which is located in the background (centre of view). The rail corridor is not visible from this location, due to intervening vegetation and built form.

Visual sensitivity: This connection is a part of the Burke link cycle route (identified in the Wagga City Council's Active Travel Plan) and would attract pedestrians and cyclists that cross the rail corridor. This view would be seen from the adjacent residences, and while it includes some historic character residences is also includes the Telstra depot which detracts from the amenity of this view. Subject to seeking and obtaining relevant approvals, this view may be transformed with the future development of student / health related accommodation as intended by the *Wagga Wagga Health and Knowledge Precinct Master Plan* (Hames Sharley, 2019). This is a view of **local visual sensitivity**.

Visual impact during construction: Works would be undertaken in the centre of view, including works to demolish the existing bridge. There would be a compound established within the adjacent Telstra depot site in the vicinity of the existing shed. Construction vehicles would be seen using the depot driveway would be used to access the construction site, via Brookong Avenue. The adjacent residential property (right of view) including the existing gardens, would be retained and protected during construction. Larger equipment including cranes and piling rigs would be seen in the background, rising above the rail corridor. The existing vegetation and buildings would continue to block the view of the rail corridor and additional freight trains. Overall, there would be a moderate magnitude of change, and a **moderate adverse visual impact** during construction.

Visual impact during operation: The ramping entry to the new Cassidy Parade pedestrian bridge would be a much larger feature in this view, extending closer to the viewer, and rising higher than the existing road bridge. The structure would include anti-throw screens, stairs and longer ramps extending towards the rail corridor in the background of the view. There may be some vegetation removed, within the existing corridor, opening up view to the bridge. Overall, the proposal would be more prominent in this view, contrasting somewhat with the scale of the adjacent residence. Overall, there would be a low magnitude of change and a **minor adverse visual impact** during operation.

**Viewpoint 16: View north along Edmondson Street**

FIGURE 5-55 VIEWPOINT 16: VIEW NORTH ALONG EDMONDSON STREET

Existing view: This view shows the southern approach to the Edmondson Street bridge as it crosses the rail corridor. The grounds of the Mount Erin Convent (now part of Mount Erin Boarding School and Kildare Catholic College) are visible to the west (left of view). In the centre of the view the roof of the South Wagga Wagga Public School can be seen glimpsed amongst larger trees. The residential area to the east (right of view) forms part of the Wagga Wagga Conservation Area, including single storey character bungalows and cottages with established gardens. The rail corridor is in a cutting as it passes to the north of the Mount Erin Boarding School and Kildare Catholic College, and the landform rises gently to the north where there are residential properties and the South Wagga Wagga Public School. As such, the track or trains are not visible from this location due to the intervening landform, vegetation and built form.

Visual sensitivity: This view is appreciated from a large number of vehicles using Edmondson Street which is a crossing and entry point to the centre of Wagga Wagga. There would also be large numbers of pedestrians accessing the adjacent schools via the bridge. This view includes areas within the heritage conservation area and glimpses to the Mount Erin Boarding / Kildare Catholic College grounds. This view is of **local visual sensitivity**.

Visual impact during construction: The demolition and reconstruction of the Edmondson Street bridge would be seen in the centre of this view. Edmondson Street would be temporarily closed and the construction site would extend across the road corridor. The vegetation within the

construction footprint would be removed, including several mature trees in the road reserve of Edmondson Street and beside the rail corridor. There would be large machinery and equipment seen within the site, including cranes and piling rig. Due to close proximity, scale and intensity of the construction activity seen in this view, there would be a moderate magnitude of change, and a **moderate adverse visual impact**.

Visual impact during operation: The new Edmondson Street bridge would be a similar width but rise higher in the centre of this view. This would result in a longer bridge and taller retaining walls glimpsed along the western side of the bridge (left of view). The bridge deck would rise above the backdrop of vegetation and block the glimpses to the South Wagga Wagga Public School. The rail corridor would remain out of view from this location. Overall, the proposal would increase the scale and visual prominence of the Edmondson Street bridge and obstruct the view towards town including several glimpses to built and landscape features. This would result in a moderate magnitude of change and a **moderate adverse visual impact**.

### Viewpoint 17: View south from Best Street

Existing view: This view shows the northern approach to the Edmondson Street bridge. The buildings and mature trees in the grounds of the historic South Wagga Public School (local heritage item in Wagga Wagga LEP) are visible from this location, to the east of the street (left of view) glimpsed amongst the trees within the school grounds.

The residential properties on Little Best Street, to the west of the street (right of view), includes predominantly single storey bungalows and cottages with established gardens and street trees. There are several existing mature trees along the bridge embankment, providing some enclosure to this view and filtering the view to an existing crib wall and the busy traffic on Edmondson Street. Both the school and residential is within Wagga Wagga Conservation Area.

FIGURE 5-56 VIEWPOINT 17A: VIEW SOUTH TO EDMONDSON STREET BRIDGE FROM BEST STREET (LITTLE BEST STREET IN VIEW)

FIGURE 5-57 VIEWPOINT 17A: VIEW SOUTH TO EDMONDSON STREET BRIDGE FROM BEST STREET (LITTLE BEST STREET IN VIEW), PHOTOMONTAGE (INDICATIVE LANDSCAPE TREATMENTS, SUBJECT TO DETAIL DESIGN)

FIGURE 5-58 VIEWPOINT 17B: VIEW SOUTH TO EDMONDSON STREET BRIDGE, FROM BESIDE SOUTH WAGGA PUBLIC SCHOOL

FIGURE 5-59 VIEWPOINT 17B: VIEW SOUTH TO EDMONDSON STREET BRIDGE, FROM BESIDE SOUTH WAGGA PUBLIC SCHOOL, PHOTOMONTAGE (INDICATIVE LANDSCAPE TREATMENTS, SUBJECT TO DETAIL DESIGN)

The rail corridor is lower than Edmondson Street and the track and trains are not visible from this location due to the intervening vegetation, built form and bridge embankments.

Visual sensitivity: Views from Best Street and Little Best Street are located in the Wagga Wagga Heritage Conservation Area. The mature street trees and buildings in the conservation area, including character houses and school buildings, are visual features in views from this location. This view would be experienced from a large number of vehicles and pedestrians using the footpath near the school. These views are of **local visual sensitivity**.

Visual impact during construction: The demolition and reconstruction of the Edmondson Street bridge would be seen in the fore and middle ground of views from this location. A construction site would be established across the view and include major construction activity including the use of earthmoving equipment, piling rigs and cranes. Vegetation within the construction footprint would be removed, including several mature trees in the road reserve of Little Best Street (right of views) and along the rail corridor. There would be views to the construction of retaining walls along the bridge ramps facing the school in the east and the residences along Little Best Street to the west. The works would partly obstruct views to the south where there is vegetation, and glimpses to the heritage buildings within the heritage conservation area. There would result in close-range views to intense construction activity from this viewpoint, which would result in a high magnitude of change, and a **high-moderate adverse visual impact**.

Visual impact during operation: The new Edmondson Street bridge would be visible in the fore and middle ground of views from this location, rising taller than the existing bridge. There would be more prominent retaining walls along the bridge ramps facing the school in the east and the residences along Little Best Street to the west. There would be less vegetation along the road verge to screen the wall, allowing clear views to the bridge from the school and residences on Little Best Street. The new bridge would partly obstruct the view to vegetation, and glimpses to the heritage buildings within the heritage conservation area, in the background. Due to the increased scale of this bridge, bringing vehicles more prominently into the view, there would be a moderate magnitude of change, and a **moderate adverse visual impact** from the South Wagga Wagga Public School. There would be a high magnitude of change from Little Best Street, and a **high-moderate visual impact**.

### Viewpoint 18: View east along Railway Street

Existing view: This view along Railway Street includes a row of single storey cottages and small ornamental street trees, part of the Wagga Wagga Conservation Area. The existing Wagga Wagga Station pedestrian bridge (Mothers Bridge), a thin steel lattice structure, is visible in the middle ground of this view, elevated over the rail corridor. The main station platform building can be seen through the footbridge (centre of view). This includes the glimpses to the station building and landscaped gardens. The station is on the SHR and described as a … '*prominent landmark'* … and an … *'important townscape feature*' (OEH 2012). The former Murrumbidgee Milling Company flour mill silos can be seen, beyond the station, and is a visual feature in the background (centre of view). There are also several sports field lights visible above the station, from Robertson Oval. The vegetation surrounding the Former Stationmaster's Residence (left of view) blocks views to this two storey building from this location. There are several other trees which are visually prominent in this view, including a large gum tree near the northern end of the footbridge, a palm tree near the station (left of view), and a group of gum trees along the southern side of the rail corridor east of the footbridge (centre of view).

Visual sensitivity: Views from Railway Street is located in a heritage conservation area and includes glimpses to several landmark buildings at the Wagga Wagga Station and the former Murrumbidgee Milling Company flour mill. This view would be experienced by local residents and people accessing the station and using the Wagga Wagga Station pedestrian bridge (Mothers Bridge) to cross the rail corridor and approach the school and town centre to the north of the railway line. This view is of **local visual sensitivity**.

Visual impact during construction: The demolition of the existing bridge and construction of the new pedestrian bridge would be clearly seen in the centre of this view. There would be construction vehicles seen travelling along Railway Street and accessing the rail corridor via the existing gates (left of view). The vegetation within the rail corridor would be retained. There would be laydown areas along the rail corridor in the background of this view, and large equipment used to install the pedestrian bridge including piling rigs and cranes in the middle ground. The works would, however, be set back from the heritage station platform buildings. Overall, there would be close-range views to intensive construction activity from this location, which would result in a high magnitude of change, and a **high-moderate adverse visual impact** during construction.

Visual impact during operation: The new pedestrian bridge would be a taller structure, with a visually more substantial structure due to the concrete piers, deck depth to accommodate the broad spans, anti-throw screens, stairs and ramps. The ramping structure would extend parallel to the rail corridor, adding visual clutter across the view and obstructing the view from the road to the heritage station platform building. The bridge design would include longer spans to minimise the number of piers within the rail corridor and be finished with colours sympathetic to the heritage precinct. The design of the throw screens would aim to maximise the transparency of the bridge superstructure, reducing the visual mass of the structure overall.

There would be more frequent freight trains visible, passing through the station and across the view. These trains would be taller and would obstruct the view across the rail corridor to the heritage buildings and leafy backdrop as they pass. The rail corridor is set back from this view and the new ramps of the footbridge would provide some screening of the current and proposed additional trains from this location.

Overall, there would be a considerable change with the introduction of a larger bridge structure, reducing the openness of the rail corridor. This larger bridge and the additional trains would obstruct the view to several local visual features. This change would result in a high magnitude of change and a **high-moderate adverse visual impact** during operation.

FIGURE 5-60 VIEWPOINT 18: VIEW EAST ALONG RAILWAY STREET

FIGURE 5-61 VIEWPOINT 18: VIEW EAST ALONG RAILWAY STREET, PHOTOMONTAGE (INDICATIVE LANDSCAPE TREATMENTS, SUBJECT TO DETAIL DESIGN)

Viewpoint 19: View south west from Station Place

FIGURE 5-62 VIEWPOINT 19: VIEW SOUTH WEST FROM STATION PLACE

FIGURE 5-63 VIEWPOINT 19: VIEW SOUTH WEST FROM STATION PLACE, PHOTOMONTAGE (INDICATIVE LANDSCAPE TREATMENTS, SUBJECT TO DETAIL DESIGN)

Existing view: This view from the entrance to Wagga Wagga Station includes the Wagga Wagga Rail Heritage Station Museum building (left of view) and beyond this, the existing Wagga Wagga Station pedestrian bridge (Mothers Bridge) in the middle to background. The Station buildings, including the museum are State heritage listed. The bridge is partly screened by the museum building and existing trees to the north (centre of view). The northern ramp entrance to the footbridge can be seen the centre of this view, and the bridge spanning the rail corridor is visible in the middle to background, above the background of leafy schools and residential areas to the south of the station. While the bridge rises above the backdrop it remains below the level of the museum building from this angle. The former Station Master's residence, a local heritage listed item, can be seen, glimpsed through the vegetation surrounding the station (right of view). The landscaped gardens of the station, including feature palm trees, mature Eucalyptus trees and ornamental cypress trees along the boundary of the former Station Master's residence, provide a leafy setting to the station in this view.

Visual sensitivity: Views from the main entrance to the Wagga Wagga Station is located to the south of the main viewline from Bayless Street to the main station building. It is located within the heritage conservation area and includes several landmark buildings in the view. This view would be experienced by local residents and people accessing the station and approaching the Wagga Wagga Station pedestrian bridge (Mothers Bridge) to cross the rail corridor. This view is of **local visual sensitivity**.

Visual impact during construction: The demolition of the Wagga Wagga Station pedestrian bridge (Mothers Bridge) would be seen in the middle to background of this view, partly obstructed by the intervening building. Construction of the new pedestrian bridge would be located behind the location of the existing footbridge, set back further from the station buildings, and include large equipment including piling rigs and cranes. The works and equipment would rise above the backdrop of buildings and vegetation and rising taller than the adjacent museum building. Construction of the ramps on the northern side of the pedestrian bridge would be out of view, located behind the existing trees adjacent to the Station Master's residence. There would be some vegetation removed from the gardens to the north of the existing bridge ramp (left of view) to accommodate the works. Overall, there would be a moderate magnitude of change to this view and a **moderate adverse visual impact** during construction.

Visual impact during operation: The new station pedestrian bridge would be a larger structure, being wider, and rising taller. The bridge would rise higher than the existing State heritage listed museum building in the middle ground of the view and rise higher than the background. The bridge would be visually heavier, with a concrete deck and anti-throw screens. The landscaped gardens surrounding the station, would be reinstated. There would be more frequent, taller trains visible crossing the view. The upper section of these freight trains would be seen in the gap between the museum and trees at the former Station Master's residence. Overall, while the bridge would be larger and more visually prominent, it would be set further back and only partly seen from this location. The bridge would incorporate heritage colours and urban design finishes to ensure the bridge does not detract from the heritage setting and is clearly differentiated from the heritage fabric of the station. This would result in a moderate magnitude of change and a **moderate adverse visual impact** during operation.

#### 5.4.4.4 Assessment of night-time visual impact

Existing night time conditions and visual sensitivity: At night, the landscapes surrounding the Cassidy Parade pedestrian bridge, Edmondson Street bridge and Wagga Wagga Station pedestrian bridge enhancement sites, would be influenced by lighting associated with commercial, industrial and residential areas surrounding the rail corridor. Vehicles travelling along local roads such as Edmondson Street, and trains travelling along the existing rail corridor at night, would also

contribute to the light levels. The sky glow from the town centre of Wagga Wagga would also influence this character area, including the floodlights from the Robertson Oval during night time sporting events. Overall, this landscape is an area of medium district brightness (A3) and has a **low visual sensitivity** at night.

Night time visual impact during construction: There would be night works required at the Cassidy Parade pedestrian bridge, Edmondson Street bridge and Wagga Wagga Station pedestrian bridge enhancement sites. This would include lighting at each enhancement site, as well as office, storage and laydown areas along the rail corridor. There would also be headlights from construction vehicles accessing and moving along the rail corridor. This lighting would be somewhat contained by the rail cutting and vegetation along the rail corridor. However, there would be the potential, due to elevated location and proximity of the bridge works to residential areas, for there to be light spill and skyglow seen from nearby residences. This would include residences to the north of the rail corridor on Brookong Avenue and on Cassidy Parade overlooking the enhancement site, residences on Donnelly Avenue and Little Best Street and Erin Street in the vicinity of the Edmondson Street bridge enhancement site, and residences on Railway Street to the south of the Wagga Wagga Station and the former Station Master's residence. Overall, there would be a moderate magnitude of change to this landscape and a **moderate-minor adverse visual impact** at night.

From other residential properties overlooking the rail corridor there would be some additional distance and potential filtering of views through existing trees along the rail corridor and by intervening buildings. Overall, there would be a low magnitude of change and a **minor adverse visual impact** from other residential properties which overlook the rail corridor.

Night time visual impact during operation: During operation there would be lighting provided at each of the pedestrian bridges and along linking paths, and there would be street lighting and vehicles with headlights at the Edmondson Street bridge. Residences in the vicinity of these bridges would experience increased general light levels. This would include areas residences on Brookong Avenue and on Cassidy Parade overlooking the enhancement site, residences on Donnelly Avenue and Little Best Street and Erin Street in the vicinity of the Edmondson Street bridge, and residences on Railway Street to the south of the Wagga Wagga Station and also the former Station Master's residence. The lighting of the bridges and adjoining public realm areas would be designed to minimise any light spill or direct light intrusion into the neighbouring residential properties.

There would also be additional headlights from the additional freight trains that would use the rail corridor at night. In the western end of this enhancement site the existing cuttings would minimise the potential for train headlights to intrude into private property. Where the rail corridor curves, however, there would be the potential for the train headlights to be directed into private property. In these areas there would be lighting from existing trains, and this light intrusion would be more frequent with the additional train movements. The existing vegetation, fences and garden structures along the rail corridor boundary would provide some screening of this light for dwellings.

In the vicinity of the Edmondson Street bridge the rail corridor is straight and slightly elevated above the residences to the north of the rail corridor on Donnelley Avenue. The more frequent train headlights would be directed along the rail corridor and not towards these residential properties. From this location there would be some views to the headlights, passing across the view seen through scattered vegetation along the rail corridor. The additional lighting on the road and the footpath along the eastern side of the bridge would introduce additional lighting at an elevated level above the residences to the southeast of the bridge on Erin Street. The adjacent

schools are not used regularly at night and therefore there would not be a notable visual impact at night.

The alignment of the rail corridor through the Wagga Wagga Station would be straight so that the headlights would not be directed towards the residential areas to the south of the corridor on Railway Street or to the community facilities to the north of the rail corridor. The rail corridor is located below the level of Railway Street and the properties to the north of the rail corridor and

Overall, there would be a moderate magnitude of change in those locations where the train line curves due to the train headlights, and to the north west and south of the Edmondson Street bridge due to the elevated lighting on the bridge. This would result in a **moderate-minor adverse visual impact** at night during operation. From other residential properties overlooking the rail corridor there would be a low magnitude of change and a **minor adverse visual impact** at night as the lighting from the bridges and train headlights would be less prominent.

### 5.4.5 Bomen Yard clearances

#### 5.4.5.1 Description of the proposal

The proposal would be located within the existing rail corridor and include the following elements:

- Realignment of main line track and loop, and signalling adjustments
- Dampier Street level crossing to remain closed and converted to ballast track.

During construction there would be:

- Laydown areas along the eastern side of the rail corridor adjacent to Byrnes Road
- Construction access via Byrnes and Bomen Roads.

Further details of construction are contained in Chapter 8 and operational elements in Chapter 9 of the EIS.

#### 5.4.5.2 Assessment of landscape impact

The following is an assessment of the landscape impact of the proposal on the Bomen Special Activation Precinct, which includes the Bomen Yard clearances enhancement site and surrounding areas.

*Bomen Special Activation Precinct industrial area*

FIGURE 5-64 BOMEN SPECIAL ACTIVATION PRECINCT INDUSTRIAL AREA CHARACTER IMAGES

Existing conditions: This landscape forms part of the Bomen Special Activation Precinct, a 4,500-hectare site northeast of Wagga Wagga. Part of the precinct has been developed and is the Bomen Business Park, including a range of industrial, manufacturing, freight and logistics, and rural industries, including food manufacturers and transport companies. The Precinct is described as having a '*beautiful landscape setting, with rolling hills and fertile valleys*' (NSW DPIE, 2020). A recently prepared master plan for the Special Activation Precinct encourages future development to '*have regard for the natural topography and views and vistas to and from the Precinct*'. This would include south westerly views from the Bomen Axe Quarry Aboriginal Place and identifies

'*areas for revegetation and tree planting in the Precinct to minimise the visual impact associated with development'*. The Bomen Yard clearances enhancement site is located at the southern end of the precinct, in the industrial core, and includes the State heritage listed railway station, now closed. The station includes '*focal buildings in the small township of Bomen'* (OEH, 2000). The landscape strategy for minimising visual impact of future development within the Special Activation Precinct proposes tree planting along the railway and adjacent road corridor of Byrnes Road.

Landscape sensitivity: This landscape is undergoing continuous changes in land use and character due to the Bomen Special Activation Precinct designation. This area has limited public access and is primarily experienced by staff and visitors to the industrial sites, as well as some residents living and working on the surrounding rural properties. The aesthetic qualities of the station provide visual interest within an otherwise intensively industrial setting. Overall, this landscape is of **neighbourhood landscape sensitivity**.

Landscape impact during construction: The proposal would be constructed within the existing rail corridor and would not require removal of any built or landscape features that are unique to this landscape. There would be some minor earthworks and the existing vegetation surrounding the site would be retained. Overall, the construction works would be intensifying the industrial, working character of a small area of this landscape, this activity would be consistent with the character of this precinct and there would be a negligible magnitude of change. This would result in a **negligible landscape impact** during construction.

Landscape impact during operation: This landscape has a prevailing industrial character with existing rail infrastructure, increasing the capacity of this landscape to absorb the additional, and taller trains that would be passing through the precinct. While there would be more frequent trains, these would be following the existing rail line and not alter the accessibility or functioning of this landscape. Overall, there would be a negligible magnitude of change and **negligible landscape impact** overall.

#### 5.4.5.3 Assessment of daytime visual impact

##### *Visual catchment of the proposal*

The potential visual influence of the proposal would be constrained by the landform which rises to the east of the rail corridor. The visual catchment would extend north and south along Byrnes Road, east to the adjacent rural fields and industrial properties on the west facing slopes, and west to include industrial sites beside the rail corridor.

The Bomen Axe Quarry Aboriginal Place (the quarry) is located about 750 metres to the east of the proposal site on an elevated site. From the quarry there are panoramic views to the west, north, east and south east. These views include the industrial areas of Bomen to the west and rural areas of the Eunony valley to the east and south east, including several solar farms which are operational and under construction. Notably, Kengal (The Rock Nature Reserve) can be seen in the distant background from the quarry site. Kengal is also a declared Aboriginal Place and 'one *of the most sacred and highly significant places for Wiradjuri'* people (p.23 NSWOEH, 2011) There is the potential for glimpses through intervening trees towards the proposal. Refer to Figure 5-62 which illustrates the potential visual influence of this Aboriginal Place based on landform only.

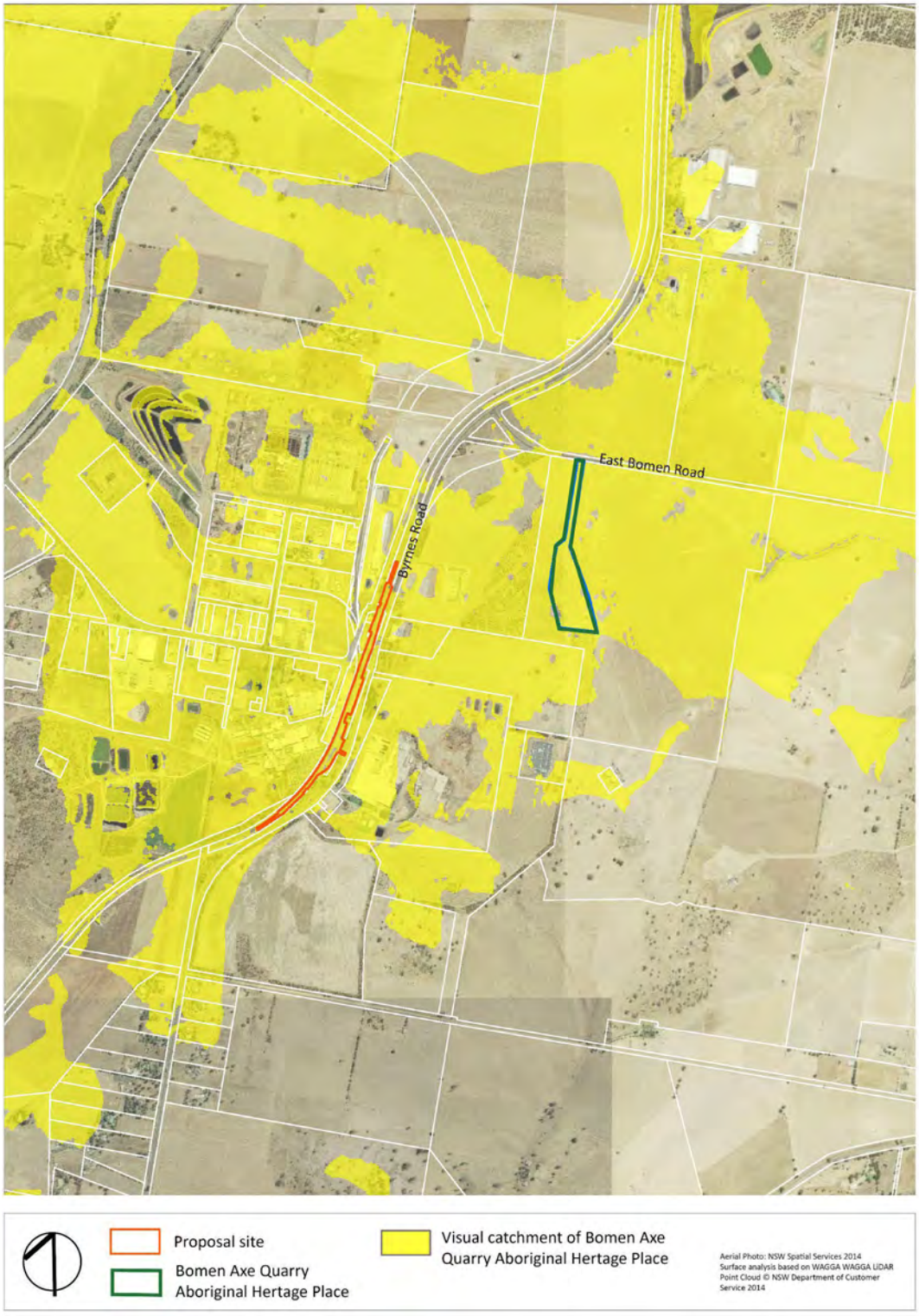


FIGURE 5-65 INDICATIVE VISUAL CATCHMENT FROM THE BOMEN AXE QUARRY ABORIGINAL PLACE – BASED ON LANDFORM ONLY

*Representative viewpoint assessment*

Based on the visual catchment of the proposal, the following viewing locations were selected as representative of the range of views to the proposal:

- Viewpoint 20: View south along Byrnes Road
- Viewpoint 21: View southwest from the Bomen Axe Quarry Aboriginal Place

Figure 5-63 identifies the location of these viewpoints.

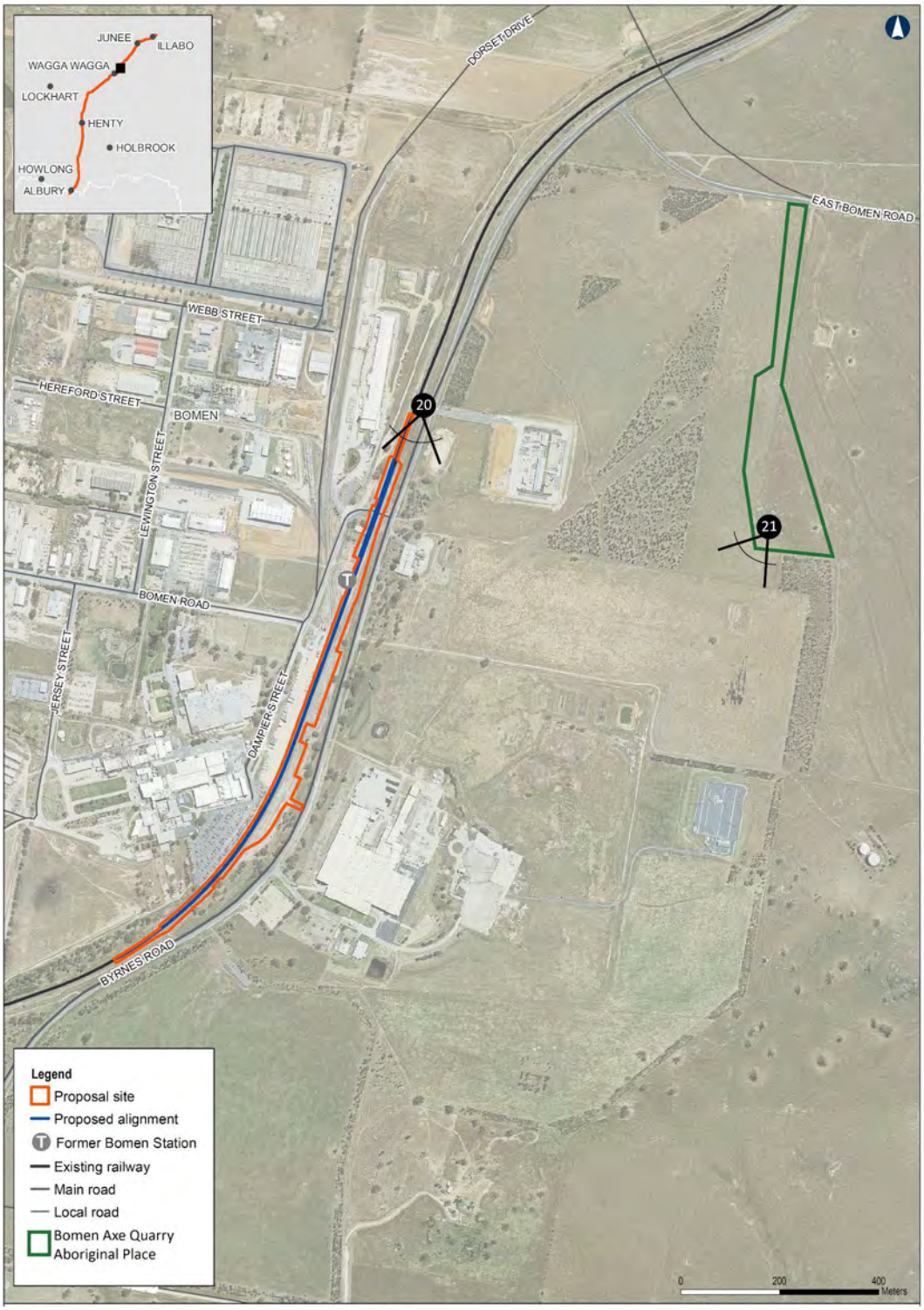


FIGURE 5-66 VIEWPOINT LOCATION PLAN – BOMEN YARD CLEARANCES ENHANCEMENT SITE

The following section summarises the daytime visual impact identified in the representative viewpoint assessment.

**Viewpoint 20: View south along Byrnes Road**


FIGURE 5-67 VIEWPOINT 20: VIEW SOUTH ALONG BYRNES ROAD

Existing view: This view from Byrnes Road includes the existing rail corridor, separated from the road by a narrow grassed reserve. The landform is generally flat in this location, with a closed level crossing at Bomen Road visible in the centre of view. The State heritage listed railway station (now closed) can be seen beyond the level crossing, in the background of the view. The Stationmaster's Residence, is also visible beside the level crossing, including a character cottage (local heritage item, Wagga Wagga LEP). These buildings provide some heritage character to the view unobstructed for a short section of Bomen Road. Several buildings within the Bomen Business Park are visible to the west of the rail corridor (right of view), including a range of industrial, manufacturing, freight and logistics, and rural industry buildings, with large building footprints and outdoor storage areas. There are scattered trees along the rail corridor (right of view) and a large block of vegetation (left of view) to the west where the landform rises. The land to the east of Byrnes Road (left of view) has a mix of industrial and rural uses but forms part of the 'industrial core' of Wagga Wagga Special Activation Precinct.

Visual sensitivity: This view is appreciated at speed from a major road passing through the industrial core of Wagga Wagga Special Activation Precinct. While the heritage buildings associated with the former station are visible, they do not appreciably improve the amenity of this view. This view is of **neighbourhood visual sensitivity**.

Visual impact during construction: There would be construction works visible along the existing rail corridor. There would be construction works to slew the track, to remove redundant rail infrastructure and to construct the new infrastructure alongside and level with the road for a short section. The existing railway station building and Stationmaster's Residence would remain, with some works around these buildings creating further visual clutter in the vicinity of these buildings. Construction traffic to and within the construction area would also be seen in the view foreground of views as vehicles access the site via Byrnes and Bomen Road, near the level crossing. Overall, the works would be absorbed into the character of the surrounding industrial

area and intended future industry. This would be a negligible magnitude of change and a **negligible visual impact** during construction.

Visual impact during operation: The modified rail infrastructure would be absorbed into the existing rail corridor, which has a high capacity to absorb this change. While there would be additional freight trains seen parallel to the road and across this view, which are taller than those currently seen, these trains would be in character with the backdrop of industrial development and not noticeably alter the prevailing character of this view. Overall, there would be a negligible magnitude of change, and a **negligible visual impact** during operation.

**Viewpoint 21: View southwest from the Bomen Axe Quarry Aboriginal Place**

Existing view: The Bomen Axe Quarry Aboriginal Place (the quarry) includes a surface hard rock quarry and axe manufacturing site and would also have served as a lookout and meeting place. (NSW Office of Environment and Heritage, 2011). The quarry is located on a northwest to southeast orientated part of a ridgeline which extends generally from a high point north of East Bomen Road. The site is not currently accessible to the public, however, the following assessment has been based on observations from surrounding areas, viewshed analysis using a digital terrain model, and observations documented in the *Bomen Axe Quarry and Manufacturing Site Assessment and Statement of Significance for an Aboriginal Place Declaration Report* (NSW OEH, 2011) From the quarry there are panoramic views to the west, north, east and south east. These views include the industrial areas of Bomen to the west. There is a block of vegetation between the quarry and the proposal site and existing vegetation along Byrnes Road that would provide screening of the site. It is expected that there would, however, be glimpses to the existing rail corridor and potentially a southern area of the Bomen Yard clearances enhancement site.

Visual sensitivity: This view is appreciated from a location of importance to the local Aboriginal community and includes panoramic views across the surrounding valleys. This view is of **regional visual sensitivity**.

Visual impact during construction: There would be construction works visible within the existing rail corridor, glimpsed from this location. This work would be absorbed into the character of the surrounding industrial area. This would result in a negligible magnitude of change and a **negligible visual impact** during construction.

Visual impact during operation: Any additional rail infrastructure would not be perceived at this distance, however, it is likely that there would be additional freight trains seen glimpsed in the middle ground of a view form the quarry. These trains would be taller, however, they would be consistent in character with the backdrop of industrial development and not noticeably alter the prevailing character of this view. Overall, there would be a negligible magnitude of change, and a **negligible visual impact** during operation.

#### 5.4.5.4 Assessment of night-time visual impact

Existing night time conditions and visual sensitivity: At night, Bomen and the surrounding landscape is an area of medium district brightness (A3) and has a **low visual sensitivity**. The concentration of industrial uses within Bomen Special Activation Precinct are brightly lit at night including street lights, building security lighting and some flood lit areas for the 24-hour activity. The lighting of this precinct would contrast with the surrounding predominantly rural landscape. Vehicles travelling along local roads such as Byrnes Road and the Olympic Highway, and trains travelling along the existing rail corridor at night, would also contribute to the light levels.

Night time visual impact during construction: There would be night works at this location during rail possessions and during extended work hours. This would include task lighting, construction vehicle headlights and lighting associated with site offices, storage and laydown areas. Due to the

existing context of moving headlights on Byrnes Road and the setting of industrial uses, this additional lighting would be absorbed within the surrounding setting. Overall, there would be a negligible magnitude of change to this landscape and a **negligible visual impact** at night.

Night time visual impact during operation: During operation there not is not be any permanent lighting proposed along the rail corridor. The headlights from more frequent freight trains would be seen alongside the vehicle headlights on Byrnes Road. These additional train headlights would be absorbed into the surrounding area of medium district brightness. There would be a negligible magnitude of change to this landscape, resulting in a **negligible visual impact** at night during operation.

### 5.4.6 Summary of impacts

The following table contains a summary of the landscape and visual impacts identified in the Wagga Wagga precinct assessment.

TABLE 5-7 SUMMARY OF LANDSCAPE IMPACTS – WAGGA WAGGA

| | | Construction | | Operation | |
|---|---|---|---|---|---|
| **Landscape character area** | **Sensitivity** | **Magnitude of change** | **Impact** | **Magnitude of change** | **Impact** |
| **Uranquinty Yard clearances** | | | | | |
| Uranquinty rural town centre | Local | Low | Minor adverse | Moderate | Moderate adverse |
| **Pearson Street bridge** | | | | | |
| Pearson Street and rail corridor | Neighbourhood | Low | Negligible | Low | Negligible |
| **Wagga Wagga Station and surrounds** | | | | | |
| Cassidy Parade and Brookong Avenue residential area | Local | Moderate | Moderate adverse | Low | Minor adverse |
| Edmondson Street bridge landscape | Local | Moderate | Moderate adverse | Low | Minor adverse |
| Wagga Wagga Station heritage landscape | Regional | Moderate | High-moderate adverse | Low | Moderate adverse |
| **Bomen Yard clearances** | | | | | |
| Bomen Special Activation Precinct | Neighbourhood | Negligible | Negligible | Negligible | Negligible |

TABLE 5-8 SUMMARY OF DAYTIME VISUAL IMPACTS – WAGGA WAGGA

| | | Construction | | Operation | |
|---|---|---|---|---|---|
| **Representative viewpoint** | **Sensitivity** | **Magnitude of change** | **Impact** | **Magnitude of change** | **Impact** |
| **Uranquinty Yard clearances** | | | | | |
| 10. View south west from Pearson Street | Local | Low | Minor adverse | Moderate | Moderate adverse |
| 11. View north from park beside Olympic Highway | Local | Low | Minor adverse | Moderate | Moderate adverse |
| **Pearson Street bridge** | | | | | |
| 12. View east from Pearson Street bridge | Neighbourhood | Low | Negligible | Low | Negligible |
| 13. View west from Urana Street | Neighbourhood | Low | Negligible | Low | Negligible |

| | | Construction | | Operation | |
|---|---|---|---|---|---|
| **Representative viewpoint** | **Sensitivity** | **Magnitude of change** | **Impact** | **Magnitude of change** | **Impact** |
| **Wagga Wagga Station and surrounds** | | | | | |
| 14. View north west from Cassidy Parade | Local | Moderate | Moderate adverse | Moderate | Moderate adverse |
| 15. View south from Brookong Avenue | Local | Moderate | Moderate adverse | Low | Minor adverse |
| 16. View north along Edmondson Street | Local | Moderate | Moderate adverse | Moderate | Moderate adverse |
| 17. View south from Best Street | Local | High | High-moderate adverse | High | High-moderate adverse |
| 18. View east along Railway Street | Local | High | High-moderate adverse | High | High-moderate adverse |
| 19. View south from Station Place | Local | Moderate | Moderate adverse | Moderate | Moderate adverse |
| **Bomen Yard clearances** | | | | | |
| 20. View south along Byrnes Road | Neighbourhood | Negligible | Negligible | Negligible | Negligible |
| 21. View southwest from the Bomen Axe Quarry Aboriginal Place | Regional | Negligible | Negligible | Negligible | Negligible |

TABLE 5-9 SUMMARY OF NIGHT TIME VISUAL IMPACTS – WAGGA WAGGA

| | | Construction | | Operation | |
|---|---|---|---|---|---|
| **Night time visual receiver location:** | **Sensitivity** | **Magnitude of change** | **Impact** | **Magnitude of change** | **Impact** |
| **Uranquinty Yard clearances** | | | | | |
| Uranquinty rural town centre | Moderate | Low | Moderate-minor adverse | Low | Moderate-minor adverse |
| **Pearson Street bridge** | | | | | |
| Pearson Street and rail corridor | Low | Low | Minor adverse | Low | Minor adverse |
| **Wagga Wagga Station and surrounds** | | | | | |
| Residences on the curve north of the rail corridor on Brookong Avenue and southeast of the Edmondson Street bridge on Erin Street. | Low | Moderate | Moderate-minor adverse | Moderate | Moderate-minor adverse |
| Other residential properties overlooking the rail corridor. | Low | Low | Minor adverse | Low | Minor adverse |
| **Bomen Yard clearances** | | | | | |
| Bomen Special Activation Precinct | Low | Negligible | Negligible | Negligible | Negligible |

## 5.5 Junee

This chapter assesses the proposal in the Junee precinct, including a review of the local planning context for the Junee Shire Council area, key features of the proposal at each enhancement site, and potential landscape and visual impacts associated with the proposal during construction and operation, day and night. The assessment has been organised into each of the following enhancement sites, from south to north:

- Harefield Yard clearances
- Kemp Street bridge
- Junee Station and surrounds, including:
    - Junee Station pedestrian bridge
    - Junee Yard clearances
- Olympic Highway underbridge
- Junee to Illabo clearances.

A summary of the landscape and visual impacts is provided at the end of this section.

### 5.5.1 Local Planning Context

#### *Junee Local Strategic Planning Statement*

Junee LSPS (Junee Shire Council, 2020) sets the land use framework for Junee's growth to 2040. The rural character of the shire and its historic towns and villages are considered to be important features to be conserved, including the '*idyllic rural setting*' of Junee and the concentration of '*heritage buildings and streetscapes'*. '*The future Brisbane to Melbourne inland rail'* is identified as a key project in the shire.

#### *Junee Local Environmental Plan 2012*

The Junee LEP aims to support the provision of *'infrastructure and amenities'* whilst ensuring to '*protect and enhance places and buildings'* (Clause 1.2.2, Junee Shire Council, 2012b).
The proposed enhancement sites are located mostly within the SP2 Infrastructure zone, which aims to '*provide for infrastructure and related uses*' (Land Use Table, SP2). The eastern side of the Harefield Yard clearances enhancement site is partly located in the RU1 Primary Production zone. The eastern and western side of the Kemp Street bridge site is within the RU5 Village zone, alongside Kemp Street. This site also includes a small area zoned RE1 Public Recreation, west of the skate park. Junee Station and the Olympic Highway underbridge enhancement sites also include small areas within the RU5 Village zone, near the Olympic Highway.

LEP heritage items and heritage conservation areas within or in close proximity to the enhancement sites at Junee Station include:

- Junee Heritage Conservation Area
- Junee Railway Station (local and State heritage register item)
- Humphrys on Loftus (former Loftus Hotel)
- Junee Post Office
- Broadway Stores Group.

The LEP aims to conserve the heritage significance of heritage items, including their '*settings and views*' (Clause 5.10).

*Junee Development Control Plan 2015*

The Junee DCP (Shire of Junee, 2015a) supports the Junee LEP by providing additional principles, objectives and controls for administering development. The DCP does not contain any specific guidance for development within or in the vicinity of the proposed enhancement sites, however it provides the following general principles for development which relate to this assessment:

- *Consider the character of the neighbourhood taking into account landscaping, building setbacks, materials and roof forms*
- *Maintain the quality of the streetscape through maintenance and enhancement of trees, gardens, building facades (ie. the exterior of the building), fences and walls*
- *Use the attributes of the site; slope, orientation and visual or landscape quality.*
- *Ensure the scale and form of new buildings is in keeping with surrounding buildings. Where possible roof forms and building heights should match those of neighbouring buildings.*
- *Minimise the bulk and height of buildings on or near boundaries to avoid overshadowing and overlooking of neighbours.*
- *Protect existing heritage buildings, streetscapes and the curtilage of heritage buildings. Use local building form and match external materials to complement existing heritage buildings.*
- *Retain established trees and vegetation where possible.*
- *Maintain views and privacy as well as to those of your neighbours. Use screens, planting and walls for visual privacy and to reduce noise'* (Section 2.1).

### 5.5.2 Harefield Yard clearances

#### 5.5.2.1 Description of the proposal

The proposal would be located within the existing rail corridor and include the following elements:

- Track realignment including cutting back Harefield station platform overhang
- Adjustments to the rail underbridge at Reedy Creek
- Replacement or modification of existing signal gantry.

During construction there would be:

- Laydown areas and site offices along the eastern and western side of the rail corridor
- Construction access via Byrnes and Harefield Roads.

Further details of construction are contained in Chapter 8 and operational elements in Chapter 9 of the EIS.

#### 5.5.2.2 Assessment of landscape impact

The following is an assessment of the landscape impact of the proposal on the Harefield rural landscape character area, which includes the Harefield Yard clearances enhancement site and surrounding areas.

*Harefield rural landscape*

FIGURE 5-68 HAREFIELD RURAL LANDSCAPE CHARACTER IMAGES

Existing conditions: This landscape incudes the former Harefield railway station and surrounding undulating rural fields. The station buildings have previously been removed, however, the large concrete silos remain as prominent structures, typical of rural stations in this region. A freight container terminal now operates to the west of the station, storing and loading containers to and from the rail corridor. Beyond the terminal and rail corridor, the area consists of a flat, rural landscape, which has been extensively cleared and modified for irrigated and dryland arable farming purposes.

Landscape sensitivity: This landscape contains rural and industrial (logistics and transport) uses, generally experienced by local residents, staff and visitors to nearby properties and freight container terminal. There are a large number of vehicles passing the site via Byrnes Road. This landscape character area is of **neighbourhood landscape sensitivity**.

Landscape impact during construction: The proposal would be constructed within the existing rail corridor, including modifications to the track, signalling infrastructure and bridge crossing over Reedy Creek. While the construction activity would alter the character of a localised part of this landscape, the activity would be compatible with the existing rail corridor and there would not be any substantial areas of vegetation removed. Overall, there would be a negligible magnitude of change and a **negligible landscape impact**.

Landscape impact during operation: The presence of rail infrastructure would be slightly increased; however, this would be absorbed into the character of the existing rail uses. There would be more frequent freight trains seen passing through the site. These trains would be taller than the existing trains and would height, length and frequency of trains would increase along the rail corridor, the proposal would be consistent with the character of this part of the landscape. There would be a negligible magnitude of change and **negligible landscape impact**.

#### 5.5.2.3 Assessment of daytime visual impact

At the Harefield Yard clearances enhancement site the proposal would include track realignment, the widening of an underbridge and trackwork and the replacement or modification of a signal gantry. There would be views to this work from a short section of Byrnes Road, from within the adjacent freight container terminal, and across the surrounding rural properties. These views would be somewhat contained by the existing grain silos, freight containers and roadside vegetation. Due to the small scale of these works there would not be a visual impact expected at this location.

#### 5.5.2.4 Assessment of night-time visual impact

Existing night time conditions and visual sensitivity: At night, the Harefield Yard clearances enhancement site and surrounding rural landscape would have low light levels. There would be lighting from scattered rural residences scattered across the surrounding landscape. Vehicles travelling along the Olympic Highway and other local roads, and existing trains travelling along the existing rail corridor would have moving headlights and contribute to the light levels. This landscape is an area of low district brightness (A2) and has a **moderate visual sensitivity** at night.

Night time visual impact during construction: There would be night works required at the Harefield Yard clearances site, during rail possessions. This would include task lighting and lighting at rail side support facilities. There would also be headlights from construction vehicles accessing and moving along the rail corridor. Along the rail corridor there may be views of this work from the Highway and from rural dwellings where there is not intervening vegetation. This includes residential properties either set back from the rail corridor to the north of the site and properties to the south east of the Highway. Overall, during construction there would be a low magnitude of change and a **moderate-minor adverse visual impact** at night during construction.

Night time visual impact during operation: There would be additional freight trains using the rail corridor and therefore more frequent train headlights would be seen in this location at night. This lighting would be directed along the corridor and not towards any nearby residences. There may be additional direct light sources seen and a skyglow above the rail corridor from the Highway. Overall, there would be a low magnitude of change to this landscape which is of moderate sensitivity and a **moderate-minor adverse visual impact** at night during operation.

### 5.5.3 Kemp Street bridge

#### 5.5.3.1 Description of the proposal

The proposal would be located within an existing rail corridor and include the following elements:

- Replacement of the existing road bridge with an increased height of about three metres
- Adjustments to alignment of Kemp Street, Railway Lane, Railway Parade and Seignior Street (Olympic Highway)
- Adjustments to the rail alignment in the vicinity of the bridge
- Changes to the configuration of open space at Endeavour Park and open space adjoining the rail corridor. There would be no net loss of open space at this location.

During construction there would be:

- Construction compounds to the west of the rail corridor on Seignior Street and to the east of Edgar Street
- Temporary diversion of Olympic Highway and local road adjustments including Joffre Street and Pretoria Avenue
- Construction access via Seignior and Edgar Streets.

Further details of construction are contained in Chapter 8 and operational elements in Chapter 9 of the EIS.

#### 5.5.3.2 Assessment of landscape impact

The following is an assessment of the landscape impact of the proposal on Kemp Street and south Junee, which includes the Kemp Street bridge, Junee Station pedestrian bridge, and Junee Yard clearances enhancement sites and surrounding areas.

*Kemp Street and south Junee*

Existing conditions: This area, to the south of the Junee town centre, includes mainly low density residential areas. The existing rail corridor divides this area generally east to west. The rail corridor is generally level with the adjacent roads, some vegetation along the north of the rail corridor. The Kemp Street bridge to the south of the station provides vehicular and pedestrian access over the rail corridor, between east and west Junee. The rail corridor is located in a valley, with the landform rising to the east and west. The landform rises steeply to the west with residential areas and a park (Endeavour Park) rising steeply and offering views across the town and to the surrounding landscape. Endeavour Park extends from Seignior Street for almost two kilometres and includes paths and ornamental gardens in the vicinity of the site. The rail corridor to the west of the bridge includes a wide verge and a footpath that continues north, parallel with Seignior Street to the centre of town. To the east of the rail corridor Edgar Street is aligned parallel with the rail corridor, passing under the Kemp Street bridge, and connecting with the Junee Recreation and Aquatic Centre and skate park. There is some vegetation along the southern embankments of the Kemp Street bridge, along the rear of properties on George Street and some scattered trees to the northeast adjacent to the residences on Ducker Street. The Kemp Street bridge has a footpath on the northern side, a closed footpath on the southern side and there are narrow stairs between Edgar Street and Kemp Street in the northeast. The Locomotive Hotel is located to the east of Edgar Street, on Hill Street, to the north of Kemp Street. This hotel has an approval to construct a number of small accommodation units between the rear of the hotel and Kemp Street. The Kemp Street bridge is located within the curtilage of

the Junee Station, a local heritage listed place (Junee LEP, 2012) but the bridge itself is not a contributary item.

FIGURE 5-69 KEMP STREET AND SOUTH JUNEE CHARACTER IMAGES

Landscape sensitivity: This area is generally experienced by local residents and their visitors. The open space to the west of the bridge would attract people from across town for recreation. The Kemp Street bridge is a major crossing point and route through the town. This landscape is of **local landscape** sensitivity.

Landscape impact during construction: A large construction site would be established along the rail corridor and extending into Endeavour Park. There would be laydown areas to the east and west of the rail corridor, on Edgar Street (in private property) and at the corner of Seignior Street and the Olympic Highway, including site offices. There would be road diversions to accommodate the closure of the Kemp Street, including the use of local streets such as Joffre Street and Pretoria Avenue. These local road diversions and the closure of the bridge would reduce local access and permeability for residents and increase the presence of traffic on nearby local streets. The Kemp Street bridge would be demolished and replaced with a taller structure, requiring some vegetation removal including the vegetation adjacent to the bridge to the north and south. Kemp Street, Railway Lane, Railway Parade and Seignior Street would also be realigned to accommodate the taller bridge structure and would include the removal of some further trees along the street. The removal of vegetation around the Kemp Street bridge would reduce the shade and amenity for pedestrians moving around the perimeter of the construction site. Overall, due to the extensive footprint and temporary loss of open space there would be a high magnitude of change and a **high-moderate adverse landscape impact** during construction.

Landscape impact during operation: The Kemp Street bridge would have a larger footprint with taller retaining walls to accommodate the increased overall height. There would be a longer road bridge extending into the Endeavour Park and the realigned roads would directly impact on the available area of open space with the broader intersection and shifting some open space area from within Endeavour Park to along the rail corridor. The amenity of the open space along the rail corridor is less attractive as a place for recreation and quiet parkland activity. Similarly, the amenity of the park areas adjoining the realigned section of the Olympic Highway and Seignior Street, and areas of the park on the sloping land rising to the west which overlook the bridge would be reduced due to the increased scale of the road. However, the reinstatement of street trees and vegetation within the eastern end of the park would improve the amenity of this area over time. The adjustments to footpaths at the eastern end of the park would also alter pedestrian circulation near road crossing points with the inclusion of additional road barriers, reducing the connectivity of the park with the open space along the rail corridor.

Overall, with the reconfiguration of Kemp Street, there would be no overall reduction in the area of open space within Endeavour Park and along the rail corridor. However, the balance of open space would change, with there being a greater area alongside the rail corridor. There would also be some areas which would be less accessible for recreational use due to steeper gradients. These areas would be suitable for mass planting, and suitable treatments from the open space areas of Endeavour Park would be refined consultation with Junee Shire Council during detail design. This would include pedestrian and cyclist connectivity, landscaping enhancements and recreational uses for the reconfigured spaces.

To the east of the bridge the pedestrian connection between Edgar Street and the Kemp Street bridge would not be reinstated, reducing the permeability for pedestrians in this area. There would, however, be a wider accessible pathway provided between Ducker Street and the western side of the rail corridor, connecting pedestrians with Seignior Street and Endeavour Park.

There would be some vegetation reinstated along the bridge embankments to the east and west of the rail corridor, however, the larger bridge structure would reduce the area available for vegetation and reduce the effectiveness of the reinstated vegetation for screening of views from adjacent residences on George Street, Ducker Street, Edgar Street and Railway Parade, and for taller trees that would provide shade for pedestrians using the bridge.

Overall, there would be a moderate magnitude of change to this landscape and **moderate adverse landscape impact** during operation.

### 5.5.3.4 Assessment of daytime visual impact

*Visual catchment of the proposal*


FIGURE 5-70 VISUAL CATCHMENT – KEMP STREET BRIDGE

There would be views to the proposal (the visual catchment) from adjacent residential and commercial areas of Junee, including north to the Junee town centre and the Junee Station, east and west to the residences and accommodation units adjacent to Kemp Street, and elevated residences and parkland overlooking the rail corridor. There would be close-range views to the rail, Kemp Street bridge and road realignment from the residences and accommodation units to

the west of Ducker Street, north of George Streets, east of Edgar Street and west of Railway Parade and Pretoria Avenue and Seignior Street (Olympic Highway). There would also be views to the proposal, particularly the Kemp Street bridge and associated realigned roads, from the eastern end of Endeavour Park in the west and skate park on Hill Street.

*Representative viewpoint assessment*

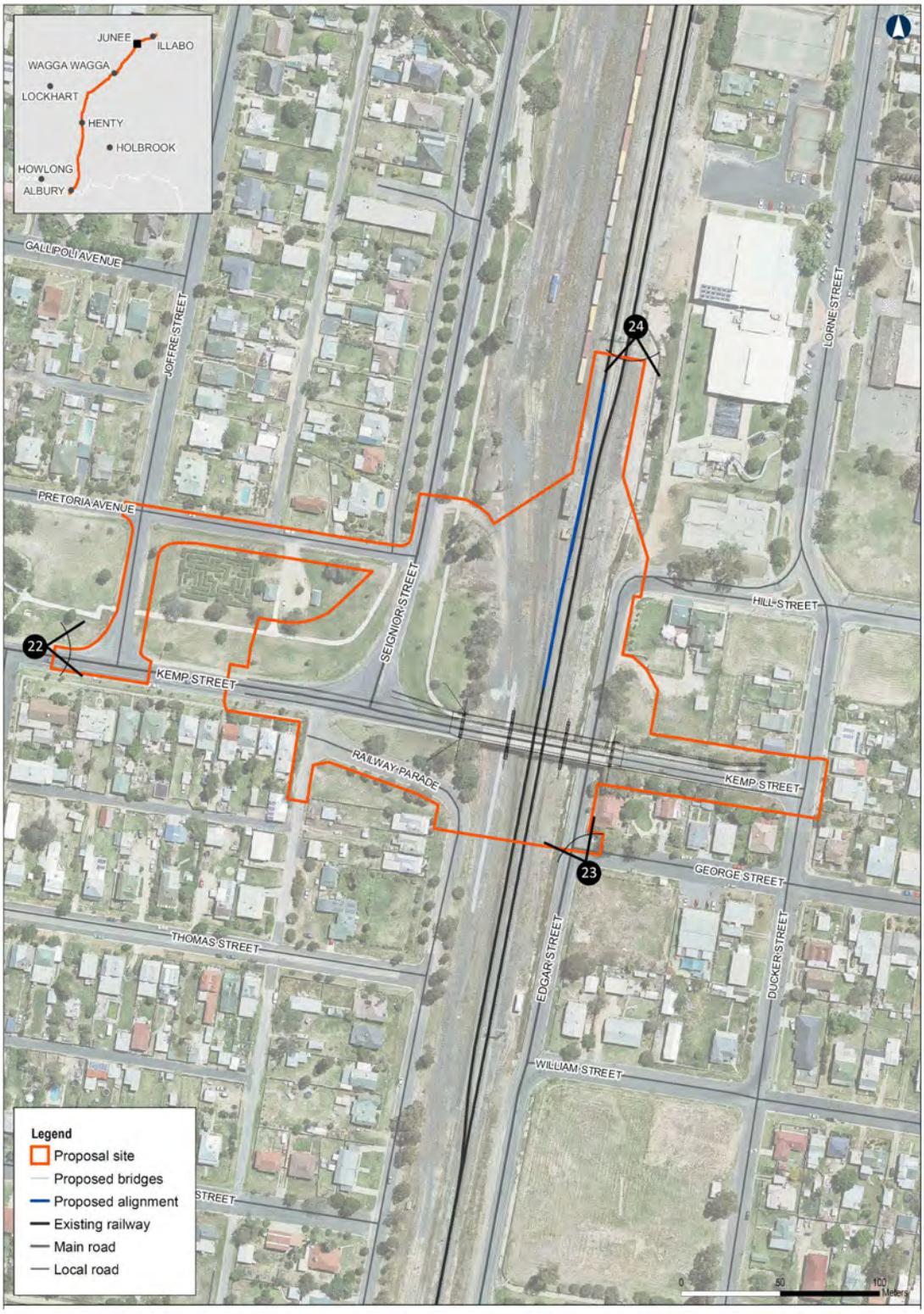


FIGURE 5-71 VIEWPOINT LOCATION PLAN – KEMP STREET BRIDGE ENHANCEMENT SITE

The following viewing location have been selected as representative of the range of views to the proposal:

- Viewpoint 22: View east along Kemp Street
- Viewpoint 23: View northwest from Edgar Street
- Viewpoint 24: View south from the Junee Railway Station platform

Figure 5-68 identifies the location of these viewpoints.

The following section summarises the daytime visual impact identified in the representative viewpoint assessment.

### Viewpoint 22: View east along Kemp Street

FIGURE 5-72 VIEWPOINT 22: VIEW EAST ALONG KEMP STREET

Existing view: This view shows the western approach to the Kemp Street bridge which can be seen in the middle ground of the view, rising above the rail corridor, but set down from the surrounding landform. This view includes Endeavour Park to the north (left of view) including mature trees, lawn areas and pathways. Seignior Street (Olympic Highway) extends north from the bridge to the north of the rail corridor. The existing trees within the park and along the rail corridor block views to the rail corridor which passes under the bridge. The cottages within the surrounding low-density suburban area can be seen, on undulating landform, with houses rising from the rail corridor to the east and to a vegetated ridgeline to the northeast (left of view).

Visual sensitivity: This view is from the Highway and park which would attract residents and visitors from across the town. Endeavour Park and the vegetated ridgeline is a landscape feature in this view. This view is of **local visual sensitivity**.

Visual impact during construction: The Kemp Street bridge would be demolished and a construction site established on both sides of the rail corridor and extending into the eastern end of Endeavour Park (left and centre of view) and to Railway Parade (right of view). There would be road diversions through the park to Joffre Street, seen in the foreground of this view. All trees and vegetation within the construction site would be removed and there would be large-scale equipment including piling rigs and cranes and earthmoving vehicles seen working within the site. There would also be roadworks including the construction of the new approach

roads and intersection with Railway Parade and Seignior Street would be seen in the middle ground. There would be close-range views to intense construction activity replacing a view to open space, seen in the context of an otherwise leafy residential setting. Overall, this would result in a high magnitude of change and a **high-moderate adverse visual impact**.

Visual impact during operation: The new Kemp Street bridge would be a much larger feature in this view, about three metres taller, with anti-throw screens, shared footpath and longer bridge approaches extending either side of the rail corridor. A new intersection would be located at the eastern end of Endeavour Park, in the centre of the view, connecting the bridge with Railway Parade and Seignior Street. The new bridge would remain below the backdrop of leafy residential area and vegetated ridge beyond. Overall, the proposal would increase the scale of the roads within this view, contrasting with the surrounding residential setting and there would be a moderate magnitude of change and a **moderate adverse visual impact** during operation.

### Viewpoint 23: View northwest from Edgar Street

Existing view: This view includes the Kemp Street bridge, crossing the rail corridor and Edgar Street (right of view). The bridge includes a multiple span steel deck with steel lattice piers and flared brick abutment walls. There would be trains visible, passing beneath the bridge and across the view. The vegetation along the western side of the track (left of view) screens the residences along Railway Parade and Endeavour Park. Trees to the east of Edgar Street (right of view) screens the adjacent residences on George Street.

Visual sensitivity: This view would be seen from vehicles passing along Edgar Street and from the residences on Edgar facing the rail corridor and at the corner of George Street. This is a moderately trafficked route and forms a main entry to town. This view is of **local visual sensitivity.**

Visual impact during construction: The Kemp Street bridge replacement works and yard clearances work would be seen unobstructed from this location. This work would include the removal of some vegetation along the bridge abutment and along the western rail corridor boundary. A construction site would be established along the rail corridor to either side of the rail corridor, along Kemp Street. There would be large-scale equipment including earthmoving, piling rigs and cranes seen rising above the site. Edgar Street would be closed, and traffic diverted into George Street (right of view). Overall, there would be a moderate magnitude of change during construction, and a **moderate adverse visual impact**.

Visual impact during operation: The new Kemp Street bridge would be a much larger and more visually prominent feature in this view. The bridge would include concrete piers, abutments and bridge deck, rising about three metres taller than the existing bridge. Additional freight trains that are taller would be seen crossing this view. While these trains pass, they would be much larger in scale than the blocking views across the rail corridor. While the proposal would replace an existing bridge and be seen in the context of a rail corridor, the larger scale bridge and trains would be more dominant features in this view, intensify the overall rail character. This would create in a moderate magnitude of change and a **moderate adverse visual impact** during operation.

FIGURE 5-73 VIEWPOINT 23: VIEW NORTHWEST FROM EDGAR STREET

FIGURE 5-74 VIEWPOINT 23: VIEW NORTHWEST FROM EDGAR STREET, PHOTOMONTAGE (INDICATIVE LANDSCAPE TREATMENTS, SUBJECT TO DETAIL DESIGN)

Viewpoint 24: View south from the Junee Railway Station platform

FIGURE 5-75 VIEWPOINT 24: VIEW SOUTH FROM THE JUNEE RAILWAY STATION PLATFORM

Existing view: This view along the rail corridor extending south from Junee Station, includes multiple tracks, gantries, signalling infrastructure, lighting poles and grassed rail corridor reserves containing transmission lines and other utilities. The Kemp Street bridge is visible in the centre middle ground of view, passing over the rail corridor and Edgar Street. Beyond the bridge, the undulating landscape of the fields to the south of the town can be seen, providing a scenic backdrop to this view. The residences to the east of the rail corridor (left of view) are located within the Junee Heritage Conservation Area (Junee LEP 2012). While this part of the rail corridor is part of June Station, a local and State heritage listed place, the built features unique to the station are not visible.

Visual sensitivity: This view is from the platform of the heritage listed Junee Station. This view would be seen from groups of rail users accessing the station and also adjacent residences. This view is of **local visual sensitivity**.

Visual impact during construction: A construction site would be established in the background of this view, in the vicinity of the Kemp Street bridge. This would include glimpses to the construction compound on either side of the bridge, at Edgar and Seignior Streets and the removal of some trees and vegetation along Kemp Street in the east (left of view), western side of the track (right of view), and within the Endeavour Park to the west (right of view). There would be yard clearances work visible within the corridor near the bridge. Work to demolish and construct the new bridge would be visible largely unobstructed along the rail corridor. The use of large equipment such as piling rigs and cranes would be prominent, rising above the surrounding residential areas and trees. The gantries, in the middle ground of this view, would also be replaced. Overall, due to the distance, there would be a low magnitude of change during construction, and a **minor adverse visual impact**.

Visual impact during operation: Additional freight trains would be seen travelling across this view, on the adjusted tracks within the rail yard. These trains would be taller than those currently seen. These trains would pass in close proximity to this view and obstruct the view across the rail corridor as they pass. The Kemp Street bridge would be a taller structure with a larger visual mass and therefore more prominent in this view. The bridge would include concrete piers within the rail corridor, taller concrete abutment walls and bridge deck. As the bridge would rise about three metres taller than the existing bridge, it would rise above undulating rural landscape in the background of this view and be a new skyline feature. While the proposal would be seen in the context of the existing rail corridor, the bridge and trains would be a more dominant feature in this view. This would result in a moderate magnitude of change and a **moderate adverse visual impact** during operation.

#### 5.5.3.5 Assessment of night-time visual impact

Existing night time conditions and visual sensitivity: At night, Kemp Street and south Junee is an area of medium district brightness (A3) and has a **low visual sensitivity**. There would be lighting associated with the existing residential and commercial development on the outskirts of town. There is street lighting along the surrounding local roads including lighting on the Kemp Street bridge which contribute to the lighting levels in this area. Trains travelling along the existing rail corridor also contribute to the light levels within the intermittent passing of train headlights.

Night time visual impact during construction: There would be night works required at the Kemp Street bridge site, including lighting at the bridge replacement site, and rail side support facilities. There would also be headlights from construction vehicles accessing and moving along the rail corridor. This lighting would be visible from the residential properties overlooking the site, including from the Olympic Highway, Railway Parade, Pretoria Avenue, Seignior, George and Edgar and Ducker streets. These views would include general skyglow as well as direct light sources, however lighting would be designed to avoid direct light spill into private residences. Overall, there would be a moderate magnitude of change to this landscape and a **moderate-minor adverse visual impact** at night.

Night time visual impact during operation: During operation there would be lighting provided on the new Kemp Street bridge to illuminate the road and adjacent footpath. There would also be lighting along the newly diverted streets to the west of the rail corridor and linking pathways. There would be vehicles with headlights travelling across the bridge at a higher level and on these roads, bring the lighting closer to residential properties on the Olympic Highway, Pretoria Avenue, Seignior Street. The lighting on the bridge would be elevated higher above the adjacent residences and would be visible from a wider visual catchment of residential areas to the east and west of the corridor, as the landform rises and creates the opportunity for glimpses to the site. The lighting of the bridge, connecting roads and footpaths would be designed to minimise any light spill or direct light intrusion into the neighbouring residential properties.

There would also be additional headlights from the additional freight trains that would use the rail corridor at night. The track is straight in this section of the rail corridor reducing the potential for these train headlights to intrude into private property. There would, however, be views to more frequent headlights crossing the view from properties along Railway Parade and Edgar Street in particular. The existing vegetation along the rail corridor would provide some screening of this light for adjacent residences.

Overall, there would be a moderate magnitude of change due to the lighting associated with the elevated road bridge and linking roads. This would result in a **moderate-minor adverse visual impact** at night during operation.

### 5.5.4 Junee Station and surrounds

#### 5.5.4.1 Description of the proposal

The following enhancement sites are located within the Junee Station and surrounds:

- Kemp Street bridge
- Junee Station pedestrian bridge
- Junee Yard clearances

The proposal would be located within an existing rail corridor and include the following elements:

- Removal of disused Junee Station pedestrian bridge and redundant signal gantry
- Track realignment.

During construction there would be:

- Construction compound to the east of the rail corridor
- Construction access via Seignior and Lorne Streets.

Further details of construction are contained in Chapter 8 and operational elements in Chapter 9 of the EIS.

#### 5.5.4.2 Assessment of landscape impact

The following is an assessment of the landscape impact of the proposal on the Junee Station and town centre character area, which includes the Junee Station enhancement sites and surrounding areas.

*Junee Station and town centre*

Existing conditions: This landscape is centred on the state heritage listed railway station, which '*is a key element in the streetscape of this part of Junee'* (OEH, 2009c) and forms the central part of Junee Heritage Conservation Area (Junee LEP 2012). The main station building, together with several other buildings nearby, including the Junee Hotel and former Loftus Hotel, form an '*important component within the townscape of central Junee'* (OEH, 2009c). The rail corridor is separated from the adjacent commercial buildings by a low timber picket fence and street tree planting along Seignior and Main streets, including a mature avenue of ornamental palm trees. Within the open space to the northwest of the station there are ornamental gardens and a statue of local identity Ray Warren. A level crossing between Main Street and Broadway Street provides access through the town centre. To the east of the station is the main entry to the station, with a large entry plaza on Humphreys Street. The station addresses Lorne Street, the main street of Junee, which has a dense heritage character commercial street. To the south of the station there is surface car parking between the station platforms and the rear of the commercial properties facing Lorne Street. This includes the Junee Post Office which is on the national heritage register and also a Protected Matter under the EPBC Act. This building contributes to the '*historic streetscape qualities of central Junee'* with the aesthetic attributes of this building including … *'Its siting, location and all of the historic exterior of the building visible from the street'.* (Commonwealth Heritage List) Several tennis courts and the Junee Recreation and Aquatic Centre and skate park are located to the south of town between the rail corridor and Lorne Street.

FIGURE 5-76 JUNEE STATION AND TOWN CENTRE CHARACTER IMAGES

Landscape sensitivity: This area is a main arrival point for Junee and would be experienced by local residents and visitors to Junee. The station is a local landmark and is among a concentration of heritage character buildings and landscape features. This landscape is of **local landscape sensitivity**.

Landscape impact during construction: During construction much of the work would be undertaken within the rail corridor. There would be access via Seignior Street and a compound established to the southeast of the station on an area of exiting car parking. The works would not be substantial at this site, being mainly the removal of the redundant pedestrian bridge. These works would be set back from Lorne Street, and the main entry to the station so that there would not be any disruption to access to or within the station and permeability in the centre of town. The east west connectivity across the rail corridor would not be altered as the existing pedestrian bridge is not in use and connects to a redundant platform. Overall, there would be a negligible magnitude of change and a **negligible landscape impact** during construction.

Landscape impact during operation: While the redundant pedestrian bridge would no longer be present, there would not be any other appreciable change to the setting of the station following construction. There would, however, be additional freight trains passing along the rail corridor. These trains would be taller and more frequent and would increase the visual and physical division of the town when the trains pass. This would reduce the permeability of the centre of town and accessibility of the station precinct to areas in the west. Overall, there would be a low magnitude of change and a **minor adverse landscape impact** during construction.

#### 5.5.4.3 Assessment of daytime visual impact

##### *Visual catchment of the proposal*

Due to the concentration of built form within Junee town centre, including the station buildings and commercial buildings along Seignior, Humphreys and Lorne streets, views to the proposal would be restricted by intervening built form. The visual catchment of the proposal would generally extend north to the level crossing, east to the rear or back-of-house area of commercial buildings along Humphreys and Lorne streets, south to the station platform and Kemp Street bridge, and west to the commercial buildings along Seignior Street. The proposal would also be seen from nearby recreational areas, such as the tennis courts along Lorne Street and the open space to the northwest of the station, surrounding Ray Warren Statue. The proposed construction access at Seignior Street would also be seen from the road and nearby commercial properties during construction.

*Representative viewpoint assessment*

The following viewing location has been selected as representative the views to the proposal:

- Viewpoint 25: View north along the Junee Station platform
- Viewpoint 26: View south along Seignior Street

Figure 5-74 identifies the location of this viewpoint.

Note, the potential for a view from the Junee Post Office, a national heritage listed property, was considered in this visual assessment. However, the important view lines associated with this heritage item are views to the post office façade from Lorne Street, which is oriented away from this proposal site. Due to intervening vegetation and existing car parking area to the west (rear) of this property, separating this property from the works, there would not be a visual impact from this property.

VIEW ALONG LORNE STREET, INCLUDING THE JUNEE POST OFFICE (LEFT OF VIEW)

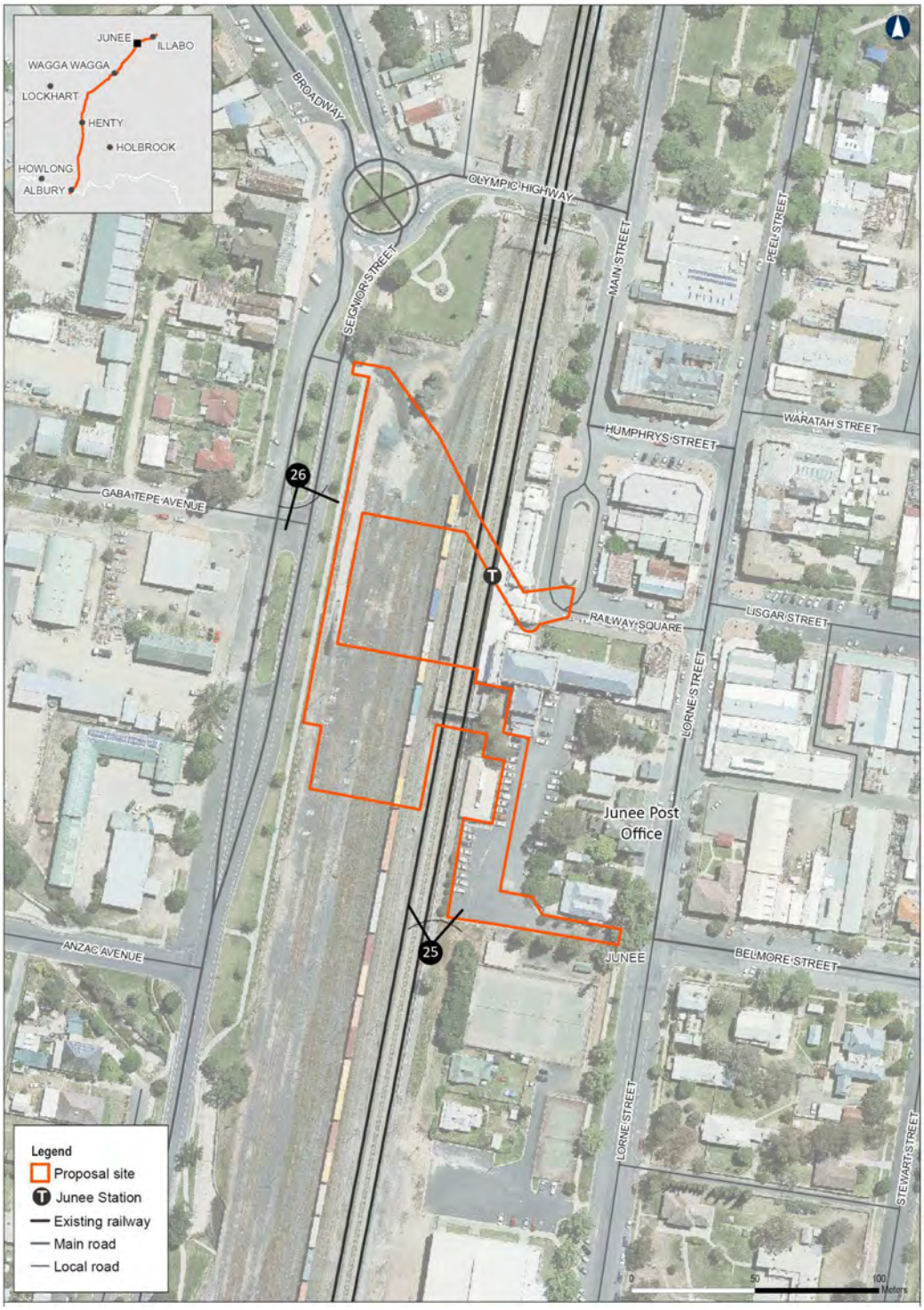


FIGURE 5-77 VIEWPOINT LOCATION PLAN – JUNEE STATION PEDESTRIAN BRIDGE

The following sections summarise the daytime visual impact identified in the representative viewpoint assessment.

Viewpoint 25: View south along Seignior Street

FIGURE 5-78 VIEWPOINT 25: VIEW SOUTH ALONG SEIGNIOR STREET

Existing view: This view shows the southern approach to Junee town centre along the Seignior Street (Olympic Highway). The rail corridor is generally level with the street, with traditional low timber picket fencing and ornamental streetscape planting along the road. The State heritage listed railway station building and platforms are s visible from this location. The station is a *'key element in the streetscape'* of Junee (OEH, 2009c) and part of Junee Heritage Conservation Area (Junee LEP 2012). The steel pedestrian bridge is located to the south of the station and can be seen from this location (partly obstructed by the train in this view), however, it is not prominent and does not contribute substantially to the aesthetic value of the station precinct in views from this location. Freight trains can be seen in this view, passing in both directions through the station.

Visual sensitivity: This view is located within a heritage conservation area and contains several visual and landscape features such as the streetscape planting as well as several landmark buildings including the station building. This is a main route through town and would be seen by a large number of road users and from the commercial and residential properties to the west of Seignior Street. This view is of **local visual sensitivity**.

Visual impact during construction: Construction vehicles would access the site via Seignior Street (left of view) and construction traffic would be seen in the middle ground of this view. The construction footprint would extend across the rail corridor towards the viewer and the removal of the existing station pedestrian bridge and works to realign of the track would be seen from this location. There would be no removal of vegetation required to undertake this work. Overall, this would result in a moderate magnitude of change, and a **moderate visual impact** during construction.

Visual impact during operation: There would be additional freight trains seen from this location which are taller than those currently seen. The additional height of these trains would obstruct the view across the rail corridor and obstruct the view to the station building and adjacent character buildings within Junee heritage conservation area. Overall, the additional trains would be prominent and intensify the rail character of this view. This would result in a low magnitude of change and a **minor adverse visual impact** during operation.

Viewpoint 26: View north from the Junee Station platform

FIGURE 5-79 VIEWPOINT 26: VIEW NORTY FROM THE JUNEE STATION PLATFORM

Existing view: This view along the platform of the Junee Station shows the disused pedestrian bridge in the background of the view alongside the southern façade of the main station platform building. This building is State heritage listed, however, the visible portion of the southern façade is not a part of the main entry and a side elevation. There is also a surface car park adjacent to this area of the station, visible in the middle ground of the view. The tracks and trains, including freight trains, can be seen passing through the station and under the existing disused bridge.

Visual sensitivity: This view is from a heritage conservation area and includes an oblique view to the heritage listed station building and pedestrian bridge. This is a location where locals would gather to access passenger trains and is a point of arrival for visitors to Junee. This is of **local visual sensitivity**.

Visual impact during construction: There would be a construction compound established to the east of the rail corridor on the existing carpark (right of view). Works to remove the existing pedestrian bridge would be seen to the west (left of view) within the rail corridor. This would include the use of equipment such as cranes and heavy vehicles. There would be no removal of vegetation required to undertake this work. Overall, this would result in a moderate magnitude of change, and a **moderate visual impact** during construction.

Visual impact during operation: Additional freight trains would be seen in close proximity to this view. These trains would be taller than those currently seen. The additional height of these trains would obstruct the view across the rail corridor to the gardens within Seignior Street and the adjacent commercial buildings. Overall, the additional trains would be prominent in this view and intensify the rail character. This would result in a low magnitude of change and a **minor adverse visual impact** during operation.

#### 5.5.4.4 Assessment of night-time visual impact

Existing night time conditions and visual sensitivity: At night, Junee is an area of medium district brightness (A3) and has a **low visual sensitivity**. There is lighting associated with the existing train station and commercial centre of town. There is street lighting and vehicles using the surrounding roads including Seignior, Humphreys and Lorne Streets which would contribute to the lighting levels in this area. There is also the intermittent passing of headlights from trains using the existing rail corridor.

Night time visual impact during construction: There would be night works required at all sites within the Junee Precinct during rail possessions and during other extending hours. This would include task lighting during bridge demolition, and lighting of rail side support facilities. There would also be headlights from construction vehicles accessing and moving along the rail corridor. This lighting would be visible within the context of the existing brightly lit station and town centre an absorbed into the night setting. Overall, there would be a negligible magnitude of change and a **negligible visual impact** during construction at night.

Night time visual impact during operation: During operation there would be more frequent train headlights directed along the rail corridor. The site is located in a predominantly commercial area the track is straight in this section of the rail corridor reducing the potential for these train headlights to intrude into private property. The residences to the north of Seignior Street would be set back and partly screened by existing vegetation. There would, however, be views to more frequent headlights crossing the view from a small number of residential properties backing onto the rail corridor to the south east of the platform. Overall, there would be a low magnitude of change due to the additional train headlights and a **minor adverse visual impact**.

### 5.5.5 Olympic Highway underbridge

#### 5.5.5.1 Description of the proposal

The proposal would be located within the existing rail corridor and include the following elements:

- Track realignment and removal of redundant main track
- Minor modification (strengthening) to the existing Olympic Highway underbridge and down track slewing.

During construction there would be:

- Construction compounds to the west of the rail corridor to the south of the Olympic Highway underpass near Illabo Road, and south within the triangular junction
- Construction access via Main Street, Illabo Road and The Olympic Highway.

Further details of construction are contained in Chapter 8 and operational elements in Chapter 9 of the EIS.

#### 5.5.5.2 Assessment of landscape impact

The following is an assessment of the landscape impact of the proposal on the Olympic Highway and north Junee landscape character area, which includes the Olympic Highway underbridge site and surrounding areas.

*Olympic Highway and north Junee*

Existing conditions: This site is located within a low-density residential area in the north of the Junee town centre. The existing rail corridor continues north from the town centre elevated on an embankment and the Olympic Highway crosses the highway via an underbridge. The landform in this location is undulating with the landform rising to the east and north west of the site. A linear open space corridor is located along the western side of the rail corridor, separating the corridor from a residential area to the west of Illabo Road. To the east of the track, and south of the underbridge, a row of mature trees along Main Street (part of the Olympic Highway) provides some screening of the rail corridor from residences east of the Olympic Highway, overlooking the rail corridor. To the north of the underbridge, the rail corridor is slightly raised on embankment and almost level with the residences on Main Street.

FIGURE 5-80 OLYMPIC HIGHWAY AND NORTH JUNEE CHARACTER IMAGES

Landscape sensitivity: This area is experienced by a moderate number of road users on the Olympic Highway, recreational users of the linear parkland and local residents and their visitors within the surrounding residential areas. This area is of **local landscape sensitivity**.

Landscape impact during construction: There would be construction undertaken within the rail corridor elevated above and level with the adjacent residences along the eastern side of the rail corridor. There would be laydown areas within the open space to the west of the rail corridor and set back from the residential properties to the west. This work would temporarily reduce the area of open space within the linear parkland and impact access through the park and amenity of this parkland for recreational use. While this construction activity would alter the character of the rail corridor and adjacent open space, there would not be a direct impact upon the existing open space and trees. Overall, there would be a moderate magnitude of change to this landscape and a **moderate adverse landscape impact** during construction.

Landscape impact during operation: The adjustments to the track would be absorbed into the character of the existing rail corridor and the areas of open space would be reinstated. There would be more frequent freight trains passing through the site which are taller than the existing trains. This change would detract from the amenity of the adjacent open space for recreation, however, the road and pedestrian access under the rail bridge would be maintained so that

there would be no impact upon local connectivity and access. Overall, there would be a low magnitude of change to this landscape and a **minor adverse landscape impact** during operation.

#### 5.5.5.3 Assessment of daytime visual impact

*Visual catchment of the proposal*

The rail corridor is located on embankment, elevating the track above the surrounding residential areas, with the rail bridge passing over the Olympic Highway. Views to the proposal would extend north to Waterworks Road, east to the elevated residences overlooking the rail corridor between Main and Boundary streets, and to the south and west to Illabo Street and areas of the Olympic Highway. Views to the proposal would be filtered through existing trees between the rail corridor and Main Street, south of the underbridge. Trees within the park at Illabo Street would also filter views to the proposal from residences to the west.

*Representative viewpoint assessment*

The following viewing locations have been selected as representative of the range of views to the proposal:

- Viewpoint 27: View north east from Illabo Road
- Viewpoint 28: View south west from Waterworks Road

Figure 5-78 identifies the location of these viewpoints.

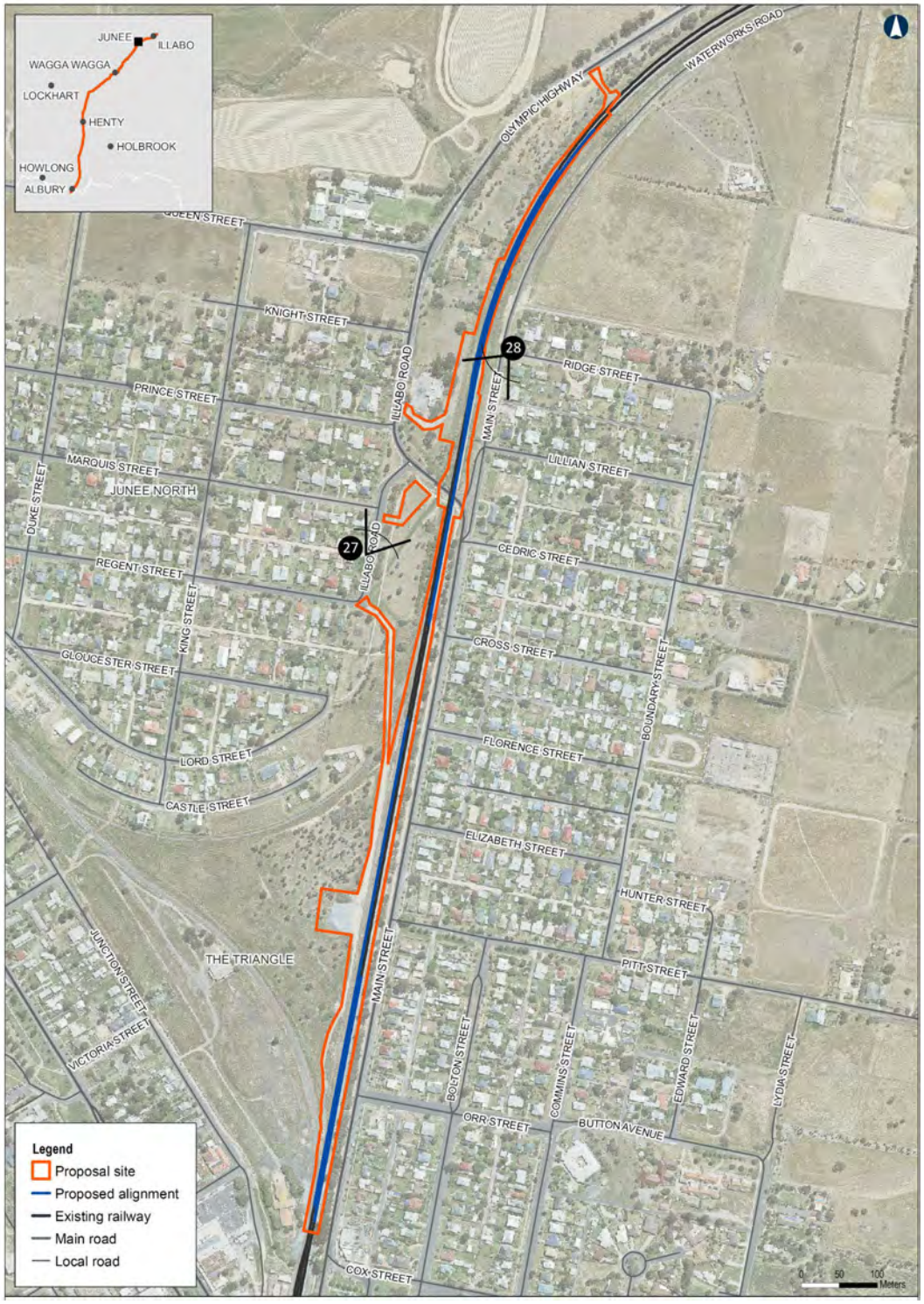


FIGURE 5-81 VIEWPOINT LOCATION PLAN – OLYMPIC HIGHWAY UNDERBRIDGE

The following section summarises the daytime visual impact identified in the representative viewpoint assessment.

Viewpoint 27: View north east from Illabo Road

FIGURE 5-82 VIEWPOINT 27: VIEW NORTH EAST FROM ILLABO ROAD

Existing view: This view adjacent to the residences on Illabo Road, shows the rail corridor, as it passes over the Olympic Highway in the background of the view. The rail bridge is a simple steel truss structure with tinted concrete abutments. The rail corridor is located on an embankment, elevating it above the surrounding residential area. A linear open space can be seen in the middle and foreground of this view, between the rail corridor and Illabo Road. This parkland includes mature trees, grassed areas, and pathways. The trees within this parkland filters views to the rail corridor and freight trains that would be seen passing along the track.

Visual sensitivity: This view is generally experienced by local residents within the residences on Illabo Road and from recreational users of the parkland which would attract users from the surrounding residential area. This view is of **local visual sensitivity.**

Visual impact during construction: A construction site would be established in the parkland adjacent to the rail corridor. Works to realign the track and strengthen the bridge would be seen in the background of this view. The grassed area at the northern part of the park, at the corner of Illabo Road and the Olympic Highway, would be used as a construction compound, with vehicles seen accessing the site from Illabo Road in the middle ground of view. The mature trees seen in this view within the park and along the track would be protected and retained and filter this view to the works. Overall, there would be a moderate magnitude of change in this view and a **moderate visual impact** during construction.

Visual impact during operation: The works to the rail corridor and underbridge would be consistent with the existing rail corridor and not notably alter the character of this view due to the distance and intervening vegetation. However, there would be additional freight trains seen on the track. The trains would be taller than those currently seen and elevated above this location. The prominence of these trains would be reduced by the distance and intervening vegetation so that they would be seen but not visually dominant from this location. Overall, there would be a low magnitude of change and a **minor adverse visual impact** in this view during operation.

Viewpoint 28: View south west from Waterworks Road

FIGURE 5-83 VIEWPOINT 28: VIEW SOUTH WEST FROM WATERWORKS ROAD

Existing view: This view from Waterworks Road shows the rail corridor as it becomes level with the adjacent residential areas to the east of the corridor. The rail is set within a narrow grassy rail corridor, with no trees or shrubs, allowing clear views to the track and the Olympic Highway underbridge can be seen in the middle ground of view. The elevated areas to the west of Junee form an attractive background of the view, with predominantly low-density leafy residential development. Power poles and wires follow the rail corridor and there would be passenger and single stacked freight trains visible passing along the rail corridor, set below the ridgeline in the background.

Visual sensitivity: This view is experienced by local residents within the adjacent residential area which includes existing dwellings and new lots. This view is of **neighbourhood visual sensitivity.**

Visual impact during construction: Construction work would be seen along the rail corridor, in the middle ground of this view. This would include activities to realign the track and strengthen the bridge. The compound sites to the west of the rail corridor would be located below the level of the rail corridor and out of view. The existing trees within the park along Illabo Road and along the western side of the track would be retained and continue to be seen in the background of this view. Overall, while there would be works in close proximity, these works would be minor and there would be a low magnitude of change to this view and a **negligible visual impact**.

Visual impact during operation: There would be additional trains seen unobstructed in the middle ground of view. These trains would be taller and would obstruct the view across the corridor to the ridgeline and residential areas to the west. These trains would be a more dominant feature in this view, resulting in a moderate magnitude of change and a **minor adverse visual impact** during operation.

#### 5.5.5.4 Assessment of night-time visual impact

Existing night time conditions and visual sensitivity: At night, this part of Junee is an area of medium district brightness (A3) and has a **low visual sensitivity**. There is lighting associated with the predominantly residential areas surrounding the rail corridor. There is also the intermittent passing of headlights from vehicles on the Olympic Highway and also trains using the existing rail corridor.

Night time visual impact during construction: There would be night works required at the Olympic Highway underbridge site during rail possessions and for extended construction hours. This would include task lighting along the rail corridor and lighting at construction compounds and rail side support areas. There would also be headlights from construction vehicles accessing and moving along the rail corridor. The compound sites would be located within the existing open space and set away from the residential areas to the west of Illabo Street and also screened by the rail corridor embankment from the residences to the east of the Olympic Highway. However, works on the rail corridor would be elevated and in close proximity to the residences on Main Street and Waterworks Road. Overall, there would be a moderate magnitude of change due to the proximity of residences and a **moderate-minor visual impact** during construction at night.

Night time visual impact during operation: During operation there would be more frequent train headlights directed along the rail corridor. While the site is located in a predominantly residential area, the track is straight and vertically separated from the adjacent residential areas within the southern areas of this enhancement site. In this area there is not likely to be any direct light intrusion from train headlights.

To the north of the rail corridor, where the rail corridor begins to curve, there is the potential for headlights to be directed over an area to the west of the rail corridor including a service station and some adjacent residential for southbound trains, and to some scattered residences to the northwest of the site for northbound trains. These areas are set back from the rail corridor and there is intervening vegetation that would minimise any direct light intrusion. Overall, there would be a low magnitude of change due to the additional train headlights and a **minor adverse visual impact**.

### 5.5.6 Junee to Illabo clearances

#### 5.5.6.1 Description of the proposal

The proposal would be located within an existing rail corridor and include the following elements:

- Realignment of sections of the track (about 15 kilometres in total)
- Modifications to culverts and level crossings, including changes from passive to active control at some level crossings.

During construction there would be:

- Laydown areas to the north east and north west of the rail corridor south of Marinna Road, to the south of Womesgate Lane, north east and south west of the grain silos at Illabo, and north of the rail corridor at the Olympic Highway crossing
- Construction access via multiple locations along Waterworks Road and the Olympic Highway.

Further details of construction are contained in Chapter 8 and operational elements in Chapter 9 of the EIS.

### 5.5.6.2 Assessment of landscape impact

The following is an assessment of the landscape impact of the rural landscape between Junee and Illabo, which includes the Junee to Illabo clearances site and surrounding areas.

*Junee to Illabo rural landscape*

Existing conditions: The landscape between Junee and Illabo is predominantly rural uses on undulating landform. It is largely cleared with corridors of vegetation along the road and rail corridors. The existing rail corridor is aligned generally parallel to the Olympic Highway as it extends through this landscape. The rail corridor and Olympic Highway pass through the town of Illabo. Illabo has a small centre and some residential properties. Within the town there is a group of concrete grain silos within the rail corridor which are local visual landmarks and characteristic of the region. There is a rest stop and recreational reserve, containing several groups of mature trees, between the highway and rail corridor in the town.

FIGURE 5-84 OLYMPIC HIGHWAY AND NORTH JUNEE CHARACTER IMAGES

Landscape sensitivity: This area is experienced by local residents, including the town of Illabo, and a moderate number of road users on the Olympic Highway. The grain silos at Illabo are a local visual feature and the highway rest stop at Illabo is a local recreational resource. This area is of **neighbourhood landscape sensitivity**.

Landscape impact during construction: There would be construction undertaken within the rail corridor at several locations along this section of the rail corridor, including the modification of several level crossings. This work would not substantially alter any publicly accessible areas. There would be temporary stockpiles and construction work along the corridor and a laydown area within the rail corridor adjacent to the rest stop. While this construction activity would alter the character of the rail corridor and adjacent open space, there would not be a direct impact upon the existing open space and trees. Overall, there would be a low magnitude of change to this landscape and a **negligible landscape impact** during construction.

Landscape impact during operation: The adjustments to the track would be absorbed into the character of the existing rail corridor. There would be more frequent freight trains passing along the rail corridor which are taller than the existing trains. This change would detract from the amenity of the adjacent rest stop and open space for recreation use. There may also be reduced

cross corridor access due to the trains passing through the level crossing more frequently. Overall, there would be a low magnitude of change to this landscape and a **negligible landscape impact** during operation.

### 5.5.6.3 Assessment of visual impact

#### *Visual catchment of the proposal*

The rail corridor is aligned generally parallel to the Olympic Highway and the works would be seen from the highway and surrounding rural areas. At the town of Illabo, views to the rail corridor are partly screened by the existing vegetation along the rail corridor and within the rest stop and open space to the east of the highway. The visual catchment of the proposal would extend west to the Olympic Highway and the adjacent rest stop and reserve, to several retail and residential properties facing the highway and rail corridor.

#### *Representative viewpoint assessment*

The following viewing location was selected as representative of the range of views to the proposal:

- Viewpoint 29: View southwest from the Olympic Highway rest stop, Illabo
- Viewpoint 30: View south from Wood Street, Illabo

Figure 5-82 identifies the location of this viewpoint.


FIGURE 5-85 VIEWPOINT LOCATION PLAN – JUNEE TO ILLABO CLEARANCES

The following section summarises the daytime visual impact identified in the representative viewpoint assessment.

Viewpoint 29: View south west from the Olympic Highway rest stop, Illabo

FIGURE 5-86 VIEWPOINT 29: VIEW SOUTH WEST FROM THE OLYMPIC HIGHWAY REST STOP, ILLABO

Existing view: This view from the rest stop shows the rail corridor to the east (left of view) and open space to the west (right of view). The rail corridor is generally level with the rest stop and there is a row of mature trees which filter views to the corridor and trains from this location. In the background of the view there is an at grade crossing and there is a glimpse to the undulating, open rural landscape.

Visual sensitivity: This view would be experienced by a moderate number of people including those using the rest stop and open space, and from vehicles travelling along the adjacent highway. This view is of **local visual sensitivity**.

Visual impact during construction: A laydown area would be established within the rail corridor (left of view) and there would be works along the rail corridor. The existing trees would filter the views to this work which would be seen in the context of existing rail corridor activity. Overall, there would be a negligible magnitude of change and a **negligible visual impact** during construction.

Visual impact during operation: There would be more frequent freight trains that are taller than those currently seen in close proximity to this view. These trains would be seen through the existing trees along the rail corridor, but would obstruct views through the trees and across the rail corridor to the wider rural landscape as they pass. These trains would be more visually prominent than the current trains seen from this location. Overall, there would be a moderate magnitude of change, and a **moderate adverse visual impact** during operation.

Viewpoint 30: View south from Wood Street, Illabo

FIGURE 5-87 VIEWPOINT 30: VIEW SOUTH FROM WOOD STREET, ILLABO

Existing view: This view includes the existing concrete gain silos and large storage shed along the rail corridor. The rail corridor includes a row of power poles and wires and there is a backdrop of trees. The Olympic Highway can be seen aligned parallel to the rail corridor in the middle ground of this view. The residential areas of Illabo can be seen to the west (right of view) and are set back from the Highway. There are mature trees which provide screening of the highway, residences and the centre of town which is in the background and out of view.

Visual sensitivity: This view would be experienced by residents in adjoining residential properties and from vehicles, travelling along this local road. The historic character concrete silo is an important local visual feature in the view. This view is of **neighbourhood visual sensitivity**.

Visual impact during construction: The construction works would occur within the existing rail corridor and laydown area would be established to the north of the silos, in the middle ground of this view. The existing trees would screen part of the works from this location and the laydown area would be seen in the context of existing rail corridor activity. Overall, there would be a negligible magnitude of change and a **negligible visual impact** during construction.

Visual impact during operation: There would be more frequent freight trains which are taller than those currently visible passing along the rail corridor. These trains would be seen in the context of the of the existing shed and silos and obstruct the view across the rail corridor and vegetation beyond when they pass. These trains would be more visually prominent and taller than the predominantly low rise dwellings that are located within the town. Overall, this would result in a moderate magnitude of change and a **minor adverse visual impact** during operation.

#### 5.5.6.4 Assessment of night-time visual impact

Existing night time conditions and visual sensitivity: At night, Illabo and the surrounding rural landscape would have low light levels. There would be lighting in the town from residences and the small commercial area, and lights from rural residences scattered across the surrounding landscape. Vehicles travelling along the Olympic Highway and other local roads, and existing trains travelling along the existing rail corridor would have moving headlights and contribute to

the light levels. This landscape is an area of low district brightness (A2) and has a **moderate visual sensitivity** at night.

Night time visual impact during construction: There would be night works required at the Junee to Illabo clearances site, including task lighting and lighting at rail side support facilities. There would also be headlights from construction vehicles accessing and moving along the rail corridor. Along the rail corridor there may be views of this work from the Highway and from rural dwellings where there is not intervening vegetation. However, due scale of the surrounding rural areas, all residential properties are set back from the rail corridor so that this lighting would not alter views from any sensitive locations. Through the town of Illabo, the rail side vegetation would filter views from the Highway, commercial properties and residences, which are set back from the rail corridor. Overall, during construction there would be a low magnitude of change and a **moderate-minor adverse visual impact** at night during construction.

Night time visual impact during operation: There would be additional freight trains using the rail corridor and therefore more frequent train headlights would be seen at night. This lighting would be directed along the corridor and not towards the nearby residences. There may be additional direct light sources seen and a skyglow above the rail corridor seen from adjacent residences and the highway. Overall, there would be a low magnitude of change to this landscape which is of moderate sensitivity and a **moderate-minor adverse visual impact** at night during operation.

### 5.5.7 Summary of impacts

The following tables contain a summary of the landscape and visual impacts identified in the Junee precinct assessment.

TABLE 5-10 SUMMARY OF LANDSCAPE IMPACTS – JUNEE

| | | Construction | | Operation | |
|---|---|---|---|---|---|
| **Landscape character area** | **Sensitivity** | **Magnitude of change** | **Impact** | **Magnitude of change** | **Impact** |
| **Harefield Yard clearances** | | | | | |
| Harefield rural landscape | Neighbourhood | Negligible | Negligible | Negligible | Negligible |
| **Kemp Street bridge** | | | | | |
| Kemp Street and south Junee | Local | High | High-moderate adverse | Moderate | Moderate adverse |
| **Junee Station and surrounds** | | | | | |
| Junee Station and town centre | Local | Negligible | Negligible | Low | Minor adverse |
| **Olympic Highway underbridge** | | | | | |
| Olympic Highway and north Junee | Local | Moderate | Moderate adverse | Low | Minor adverse |
| **Junee to Illabo clearances** | | | | | |
| Junee to Illabo rural landscape | Neighbourhood | Low | Negligible | Low | Negligible |

TABLE 5-11 SUMMARY OF DAYTIME VISUAL IMPACTS – JUNEE

| | | Construction | | Operation | |
|---|---|---|---|---|---|
| **Representative viewpoint** | **Sensitivity** | **Magnitude of change** | **Impact** | **Magnitude of change** | **Impact** |
| **Kemp Street bridge** | | | | | |
| 22. View east along Kemp Street | Local | High | High-moderate | Moderate | Moderate adverse |
| 23. View northwest from Edgar Street | Local | Moderate | Moderate adverse | Moderate | Moderate adverse |
| 24. View south from the Junee Railway Station platform | Local | Low | Minor adverse | Moderate | Moderate adverse |
| **Junee Station and surrounds** | | | | | |
| 25. View north along the Junee Station platform | Local | Moderate | Moderate adverse | Low | Minor adverse |
| 26. View north from the Junee Station platform | Local | Moderate | Moderate adverse | Low | Minor adverse |
| **Olympic Highway underbridge** | | | | | |
| 27. View north east from Illabo Road | Local | Moderate | Moderate adverse | Low | Minor adverse |
| 28. View south west from Waterworks Road | Neighbourhood | Low | Negligible | Moderate | Minor adverse |
| **Junee to Illabo clearances** | | | | | |
| 29. View southwest from the Olympic Highway rest stop, Illabo | Local | Negligible | Negligible | Moderate | Moderate adverse |
| 30. View south from Wood Street, Illabo | Neighbourhood | Negligible | Negligible | Moderate | Minor adverse |

TABLE 5-12 SUMMARY OF NIGHT TIME VISUAL IMPACTS – JUNEE

| | | Construction | | Operation | |
|---|---|---|---|---|---|
| **Night time visual receiver location:** | **Sensitivity** | **Magnitude of change** | **Impact** | **Magnitude of change** | **Impact** |
| **Harefield Yard clearances** | | | | | |
| Harefield rural landscape | Moderate | Low | Moderate-minor | Low | Moderate-minor |
| **Kemp Street bridge** | | | | | |
| Kemp Street and south Junee | Low | Moderate | Moderate-minor adverse | Moderate | Moderate-minor adverse |
| **Junee Station and surrounds** | | | | | |
| Junee Station and town centre | Low | Negligible | Negligible | Low | Minor adverse |
| **Olympic Highway underbridge** | | | | | |
| Olympic Highway and north Junee | Low | Moderate | Moderate-minor adverse | Low | Minor adverse |
| **Junee to Illabo clearances** | | | | | |
| Junee to Illabo rural landscape | Moderate | Low | Moderate-minor | Low | Moderate-minor adverse |

# 6. Cumulative impact

## 6.1 Overview

For an EIS, cumulative impacts can be defined as the successive, incremental, and combined effect of multiple impacts, which may in themselves be minor but could become significant when considered together. The methodology for the cumulative impact assessment is provided in detail in the EIS (Chapter 26).

Projects identified with sufficient information to undertake assessment of potential cumulative impacts from the proposal are shown on Figure 6.1, and include:

Adjacent sections of Inland Rail, including:

- Tottenham to Albury (Victoria)
- Illabo to Stockinbingal.

Other projects, including:

- Thurgoona Link Road
- Nexus Industrial Precinct
- Jindera Solar Farm
- Glenellen Solar Farm
- Walla Walla Solar Farm
- Culcairn Solar Farm
- Uranquinty Solar Farm (200MW)
- Sandy Creek Solar Farm
- Gregadoo Solar Farm
- Solar Farm Uranquinty (5MW)
- HumeLink
- Solar farm (5MW) – Bomen
- Wagga Wagga Special Activation Precinct
- Riverina Intermodal Freight and Logistics Hub
- Project EnergyConnect (NSW – Eastern Section)
- Junee Station Upgrade
- Junee to Griffith Line Upgrade
- Illabo Solar Farm
- Olympic Highway intersection upgrades.

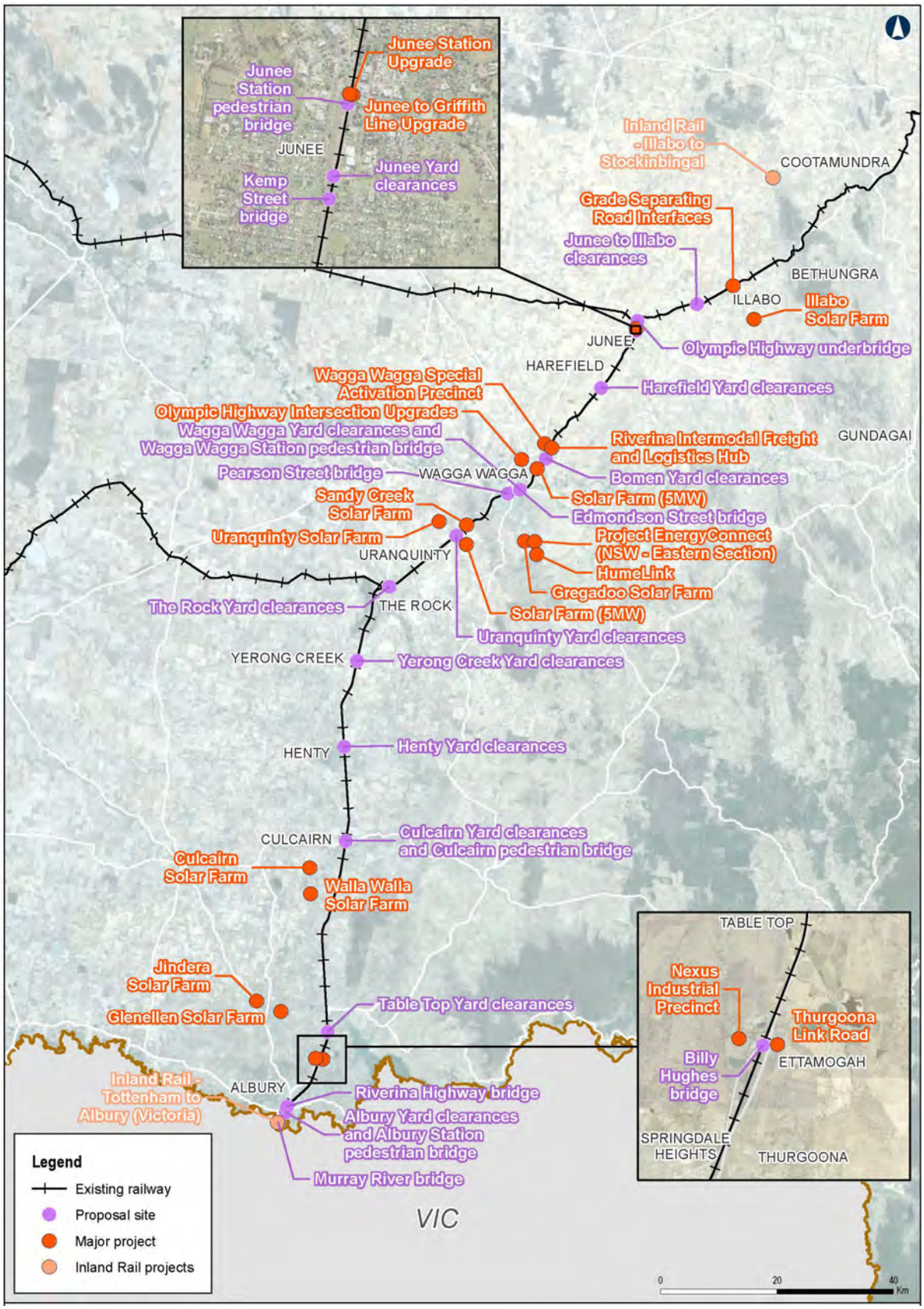


FIGURE 6-1 PROJECTS ASSESSED FOR POTENTIAL CUMULATIVE IMPACTS FROM THE PROPOSAL

## 6.2 Cumulative impacts during construction and operation

The cumulative landscape and visual impact assessment for both construction and operation is summarised in Table 6-1.

TABLE 6-1 CUMULATIVE IMPACT ASSESSMENT

| Project name | Potential impact during construction and operation |
|---|---|
| Inland Rail – Tottenham to Albury (Victoria) | The project would not be viewed together with the proposal at the Murray River, however, there would be sequential views when traveling through the landscape to both sections of the Inland Rail program. This would result in a **cumulative visual impact** during both construction and operation. |
| Thurgoona Link Road | This project would be viewed together with the proposal at the Billy Hughes bridge enhancement site.<br>The visual impacts of the proposal are not substantial at this location and the development of this road would not be an adverse cumulative landscape or visual impact. |
| Nexus Industrial Precinct | The Nexus Industrial Precinct would be seen in sequential views near the Billy Hughes bridge enhancement site.<br>The visual impacts of the proposal are not substantial at this location and the development of this area as industry would be consistent with the character of the existing uses in this area. There would not be an adverse cumulative landscape or visual impact from this project. |
| Jindera Solar Farm | This solar farm would not be viewed together with the proposal.<br>Any sequential view between this solar farm and the proposal would not be associated with the visual impacts of the proposal. |
| Glenellen Solar Farm | This solar farm would not be viewed together with the proposal.<br>Any sequential view between this solar farm and the proposal would not be associated with the visual impacts of the proposal. |
| Walla Walla Solar Farm | This solar farm would not be viewed together with the proposal.<br>Any sequential view between this solar farm and the proposal would not be associated with the visual impacts of the proposal. |
| Culcairn Solar Farm | This solar farm would not be viewed together with the proposal.<br>Any sequential view between this solar farm and the proposal would not be associated with the visual impacts of the proposal. |
| Uranquinty Solar Farm (200MW) | This solar farm would not be viewed together with the proposal.<br>Any sequential view between this solar farm and the proposal would not be associated with the visual impacts of the proposal. |
| Uranquinty Solar Farm (5MW) | This solar farm would not be viewed together with the proposal.<br>Any sequential view between this solar farm and the proposal would not be associated with the visual impacts of the proposal. |
| Humelink | The proposal would not be viewed together with the proposal.<br>Any sequential view between Humelink and the proposal would not have similar visual character and would not be associated with the visual impacts of the proposal. |
| Sandy Creek Solar Farm | This solar farm would be viewed together with the proposal.<br>Construction activity may overlap and this would result in an increased presence of construction activity to the north of the town of Uranquinty. There may be a **cumulative visual impact** during this time.<br>While the scale and form of the solar farm is not similar and would be different to this proposal, there would be a **cumulative visual impact** in areas to the north of Uranquinty during operations. |

| Project name | Potential impact during construction and operation |
|---|---|
| Gregadoo Solar Farm | The proposal would not be viewed together with the proposal.<br>Any sequential view between this solar farm and the proposal would not be associated with the visual impacts of the proposal. |
| Solar farm (five MW) - Bomen | The proposal would be viewed together with the proposal. There may be a **cumulative visual impact** during construction if the project construction programs were to overlap.<br>During operation, the solar farm would have different visual and landscape characteristics and would not be associated with the landscape character and visual impacts of the proposal. This project is not likely to be visible from the Bomen Axe Quarry Aboriginal Heritage Place during operation. |
| Wagga Wagga Special Activation Precinct | The proposal would be viewed in the context of the Wagga Wagga Special Activation Precinct. There would be a visual compatibility between the proposed uses within the precinct which would not result in a cumulative landscape or visual impact generally.<br>There may, however, be a **cumulative visual impact** in views from the Bomen Axe Quarry Aboriginal Heritage Place during construction and operations. |
| Riverina Intermodal Freight and Logistics Hub | The proposal would be viewed sequentially with the Riverina Intermodal Freight and Logistics Hub. There would be a visual compatibility between the proposal and the freight hub and the Wagga Wagga Special Activation Precinct. However, there would be a cumulative landscape and visual impact with this proposal and the uses during both construction and operation of these projects.<br>There may, however, be a **cumulative visual impact** on views from the Bomen Axe Quarry Aboriginal Heritage Place during construction and operations. |
| Olympic Highway intersection upgrades | The proposal would not be viewed together with these intersection upgrades.<br>Any sequential view between these upgraded intersections and the proposal would not be associated with the visual impacts of the proposal. |
| Project EnergyConnect (NSW – Eastern Section) | The proposal would not be viewed together with the proposal.<br>Any sequential view between Project EnergyConnect (NSW – Eastern Section) and the proposal would not have similar visual character and would not be associated with the visual impacts of the proposal. |
| Junee Station Upgrade | The upgrades to the Junee Station would be seen together with the proposal.<br>These upgrades would not be visually prominent or alter the character of the station noticeably and therefore there would not be a cumulative landscape or visual impact |
| Junee to Griffith Line Upgrade | This project would be viewed together with the proposal.<br>This further upgrade of the rail line in the vicinity of the Junee Station would result in a further intensification of rail infrastructure and train movements in the vicinity of the Junee Station. This would result in a **cumulative visual impact** during both construction and operation of these projects. |
| Illabo Solar Farm | The proposal would not be viewed together with this solar farm.<br>Any sequential view between this solar farm and the proposal would not be associated with the visual impacts of the proposal. |
| Inland Rail – Illabo to Stockinbingal | The proposal would be seen together with this project north of Illabo and there would be sequential views when traveling through the landscape to both sections of the Inland Rail program. There would also be multiple landscape impacts experienced sequentially across the landscape. This would result in a **cumulative landscape and visual impact** experienced over a broader area. |
| Grade separating road interfaces | The proposal would intersect with the Junee to Illabo clearances and would be viewed together with this proposal. Impacts during construction would only occur if these works are carried out concurrently.<br>During operation there would be **cumulative landscape and visual impact** experienced in the vicinity of this intersection where a potential bridge structure would be seen together with the proposal and sequentially along this section of the Inland Rail program. |

## 6.3 Summary of cumulative impacts during construction

During construction there is the potential for additional construction activity seen in views to the proposal from several projects whose construction timeframe may overlap with this proposal. These projects are the Inland Rail projects, Tottenham to Albury (Victoria) and Illabo to Stockinbingal; the Thurgoona Link Road; Project EnergyConnect (NSW – Eastern Section); Sandy Creek Solar Farm, the Bomen Solar Farm and the Wagga Wagga Special Activation Precinct in Bomen.

In summary:

- The works at the **Thurgoona Link Road** would be seen together with the proposal at the Billy Hughes site, however, there is not expected to be a cumulative landscape or visual impact due to the minor scale of the works and the capacity of the surrounding landscape to absorb the new road infrastructure alongside the existing Hume Highway.
- At **Sandy Creek Solar Farm**, there may be a cumulative visual impact if the timing of construction activity overlaps with the proposal. This would increase the presence of construction activity in the area to the north of the town of Uranquinty, including construction vehicles using local streets and the at grade rail crossing.
- At the Bomen Yard clearances enhancement site, construction activity associated with the **Wagga Wagga Special Activation Precinct** and **Bomen Solar Farm** would be seen together with this proposal from Byrnes Road and the surrounding rural landscapes. In particular, there is the potential for a cumulative visual impact from the Bomen Axe Quarry Aboriginal Heritage Place, which has glimpses towards the proposal, but from which the broader Special Activation Precinct is likely to be seen and include an increased presence of construction activity and vehicles.

There would also be cumulative landscape and visual impacts where multiple enhancement sites along the route are experienced together or sequentially. This would include:

- There would potentially be additional trains viewed together with this proposal for the **Inland Rail – Tottenham to Albury (Victoria)** and **Illabo to Stockinbingal** proposals in the vicinity of the Murray River bridge construction site and Junee to Illabo clearances which would result in a potential cumulative visual impact.
- In **Greater Hume – Lockhart and Uranquinty**, where there would be construction works associated with the proposal seen at multiple locations along the Hume Highway.
- In **Wagga Wagga**, where there would be a cumulative landscape and visual impact due to three rail crossing locations being impacted during construction, and the presence of construction activity would be seen from multiple locations within the local area that may be seen sequentially, particularly when moving between residential areas, the Wagga Wagga Station and local schools.
- The potential for a cumulative effect would not be as pronounced in **Albury**, where the works are focused around the station and along the rail corridor.
- Similarly, in **Junee** the works are largely centred on the Kemp Street bridge replacement and with other works being contained mainly within the rail corridor, reducing the potential for a cumulative landscape and visual impact.

There would also be a cumulative landscape character and visual impact on passengers using services on the existing line, who would view construction activity in multiple locations between Murray River Bridge and Illabo sequentially.

## 6.4 Summary of cumulative impacts during operation

During operation, the proposal would potentially be seen together with several other projects, whose construction timeframe may overlap with this proposal. These projects are the Inland Rail projects, Tottenham to Albury (Victoria) and Illabo to Stockinbingal; the Thurgoona Link Road; Henty Rail Crossing; Project EnergyConnect (NSW – Eastern Section); Sandy Creek Solar Farm and the Wagga Wagga Special Activation Precinct in Bomen.

In summary:

- There would be views to the operation of this proposal seen together with other stages of the Inland Rail program, particularly the Tottenham to Albury (Victoria) and Illabo to Stockinbingal proposals. While these projects are different stages of the same program, the combined experience of this proposal viewed sequentially across the landscape would combine to intensify the rail character of the existing broader Melbourne to Sydney rail corridor and presence of this corridor in the broader landscape. Furthermore:
    - The new infrastructure would collectively replace heritage character bridges with larger structures in multiple locations the route, the other rail infrastructure would be largely absorbed into the rail corridor.
    - The increased length, height and frequency of trains would intensify the rail character of the rail corridor at a regional scale, forming a more visually prominent visual feature across this area of regional NSW and northern Victoria.
    - There would be a cumulative landscape impact where there is an impact on rail side open space at multiple locations along the route, and east west connectivity is reduced both locally and regionally as the proposal across multiple enhancement sites and also other Inland Rail projects reduces regional accessibility and connectivity.
- The Sandy Creek Solar Farm would be seen together with the proposal at the Uranquinty Yard clearances enhancement site during operation of the proposal. While the form and scale of the Sandy Creek Solar Farm would be different to this proposal at Uranquinty, combined these proposals would alter the character of the areas to the north of Uranquinty, intensifying the infrastructure character of this area, resulting in a cumulative visual impact.
- The new Thurgoona Link Road would be seen together with the proposal at the Billy Hughes site, however, there is not expected to be a cumulative landscape or visual impact during operation due to the minor scale of the works and the capacity of the surrounding landscape to absorb the new road infrastructure alongside the existing Hume Highway.
- At the Bomen Yard clearances enhancement site the Wagga Wagga Special Activation Precinct would be seen together with this proposal from Byrnes Road and the surrounding rural landscapes. In particular, there is the potential for a cumulative visual impact from the Bomen Axe Quarry Aboriginal Heritage Place, which has glimpses towards the proposal, but from which the broader Special Activation Precinct is likely to be seen and include an increased presence of industrial scale uses including heavy vehicles and freight rail.
- North of Illabo, there would be cumulative landscape and visual impact during operation of the grade separating road interface at the Olympic Highway at Harris Gates. The proposal would intersect with the Junee to Illabo clearances and an additional road bridge structure would be viewed together with this proposal.

There would not be a cumulative landscape and visual impacts expected associated with most of the solar farms surrounding this proposal due to the different scale and form and landscape impacts associated with these developments. As such, there is not likely to be an association

between the landscape and character change from the solar farm developments and this proposal or the Inland Rail program as a whole. There is also no opportunity for the identified solar farms to be viewed together with the proposal apart from the Sandy Creek Solar Farm at Uranquinty.

In addition to the potential cumulative impacts with other projects, there would also be cumulative landscape and visual impacts where multiple enhancement sites along the route are experienced together or sequentially during operations. This would include:

- Greater Hume – Lockhart and Uranquinty, where the proposal would be seen at multiple locations along the Hume Highway.
- In Wagga Wagga, there would also be a cumulative landscape and visual impacts where the Cassidy Parade pedestrian bridge, Edmondson Street bridge and Wagga Wagga Station pedestrian bridge enhancement sites would be experienced concurrently and sequentially. This cumulative impact would be both adverse and beneficial where, for example, there would be improvements to cross corridor accessibility for pedestrians and the removal of vegetation would be replaced with an increased number of trees and refreshed landscape areas.

There would also be a cumulative landscape character and visual impact on passengers using services on the existing line, who would view less heritage bridge structures along the route, several additional larger scale bridges, and more frequent, taller trains within the rail corridor, passing more frequently on adjacent tracks.

# 7. Mitigation and management measures

## 7.1 Approach to mitigation and management

Environmental management for the proposal would be carried out in accordance with the environmental management approach as detailed in Chapter 27 of the EIS (Synthesis of the environmental impact statement). Specific measures to mitigate and manage the landscape and visual impacts of the proposal are identified in section 7.2. Urban design, landscape and rehabilitation objectives have been prepared for this proposal, to guide the development of these mitigation measures (refer to section 7.3).

These measures are supported by landscape and urban design opportunities and constraints which have been prepared for each of the bridge sites, where the greatest opportunity for landscape and urban design treatments to minimise landscape and visual impact on the surrounding community and capitalise on opportunities to improve amenity.

Landscape and urban design opportunities and constraints have been identified for each of the proposed bridges (Refer to Appendix A Albury Landscape and Urban Design and Concept Report, Appendix B Wagga Wagga Landscape and Urban Design and Concept Report, Kemp Street Landscape and Urban Design and Concept Report).

## 7.2 Summary of mitigation and management measures

The measures to mitigate and manage the landscape and visual impacts from the proposal during detailed design / pre-construction, construction and operation are outlined in Table 7-1.

TABLE 7-1 MITIGATION AND MANAGEMENT MEASURES

| Impact type | Mitigation management measure | Project phase |
|---|---|---|
| Landscape and visual impact | Detailed design and construction planning will seek to further minimise the construction and operation footprints to avoid impacts on mature vegetation, as far as reasonably practicable. | Detailed design / pre-construction |
| Landscape and visual impact | An urban design and landscape plan would be prepared to provide a consistent approach to design, landscaping and landform rehabilitation. The urban design and landscape plan would include:<br>• vegetation screening in strategic locations to minimise impacts from new structures and rail operations, including around bridges and locations where the proposal would be visible from sensitive receivers, where the presence of screening does not impact safe rail operations<br>• integration of batter slopes into the surrounding landscape as far as practicable and inclusion of appropriate slope stabilisation measures to ensure successful rehabilitation and slope stability<br>• appropriate treatment of cuttings to minimise the need for shotcrete, and use of appropriate urban design finishes where shotcrete is unavoidable<br>• appropriate species that respond to the existing landscape character setting and environmental conditions<br>• design guidelines to minimise the visual impacts of infrastructure, with consideration of the existing landscape and visual context | Detailed design / pre-construction |

| Impact type | Mitigation management measure | Project phase |
|---|---|---|
| | Detailed design would be undertaken in accordance with the urban design objectives developed for the design, and the urban design and landscape plan. | |
| Landscape and visual impact | All trees removed for the project will be replaced at a ratio of 2:1 in locations within the enhancement sites and on adjacent property where appropriate in consultation with stakeholders and local councils. | Detailed design / pre-construction |
| Landscape and visual impact | The final urban design treatments and landscaping at Kildare Street park (Wagga Wagga) and Endeavour Park (Junee) will be identified in consultation with the relevant council and informed by community consultation. This includes park embellishments where possible.<br>Where possible, these improvements will provide screening of rail corridor and enhance local landscape character. | Detailed design/pre-construction |
| Landscape and visual impact | Detailed design of the new road and pedestrian bridges will have regard to Bridge aesthetics: design guideline to improve the appearance of bridges in NSW (TfNSW, 2019). | Detailed design/pre-construction |
| Landscape and visual impact | Any landscape works are to be completed in accordance with the Inland Rail's *Landscape and Rehabilitation Framework*, Landscape Rehabilitation Strategy, and Landscape Specification.<br>Rehabilitation of disturbed areas will be undertaken progressively in accordance with the urban design and landscape plan and individual property agreements, where relevant.<br>Landscaping works will be monitored and maintained until vegetation has established in accordance with ARTC's procedures or as agreed with the relevant landholder. | Detailed design/pre-construction / construction |
| Night-time visual impacts | Temporary lighting will be designed and sited to minimise light spill on adjacent receivers as far as practicable with consideration of *AS 4282-2019 Control of the Obtrusive Effects of Outdoor Lighting* (Standards Australia, 2019). | Detailed design/pre-construction |
| Night-time visual impacts | Light spill onto private property due to permanent lighting and train headlights will be managed in accordance with *AS 4282-2019 Control of the Obtrusive Effects of Outdoor Lighting* (Standards Australia, 2019) as far as practicable. | Detailed design/pre-construction |
| Landscape and visual impact | Construction compounds will be located, as far as practicable, within cleared areas and away from sensitive receivers. Compounds will be designed and orientated to minimise visual impacts. This will include locating areas of low visual amenity away from sensitive receivers and erecting boundary screening around compounds, where appropriate. | Construction |
| Landscape and visual impact | Trees to be retained will be protected prior to the commencement of construction in accordance with AS4970-2009 Protection of trees on development sites (Standards Australia, 2009a). | Construction |
| Landscape and visual impact | All trees removed for the proposal (that are not subject to biodiversity offsets) will be replaced at a ratio of 2:1 in locations within the enhancement sites or in the general locality to the | Construction |

| Impact type | Mitigation management measure | Project phase |
|---|---|---|
| | enhancement sites as determined in consultation with stakeholders and relevant local council. A tree is defined as woody perennial plants above three metres in height. | |
| Landscape and visual impact | During detailed design and in consultation with the relevant council, opportunities to screen the rail corridor and enhance local landscape character through the provision of additional trees and shrubs within local parks and streets adjoining enhancement sites will be investigated in locations such as Culcairn, Henty, Yerong Creek and Uranquity. | Detailed design/pre-construction |

## 7.3 Landscape, urban design and rehabilitation objectives

The following sections outline the landscape, urban design and rehabilitation objectives for the proposal, that will guide the development of the design.

### 7.3.1 Program-wide

#### 7.3.1.1 Inland Rail landscape and rehabilitation strategy

The Inland Rail Landscape and Rehabilitation Strategy (ARTC, 2019a) (the Strategy) establishes program-wide governing landscape objectives and principles, and landscape and rehabilitation treatment solutions for the construction and operation of Inland Rail.

Key objectives include the following, with a number of relevant design principles under each objective within the Strategy:

- conserve and connect
- self-sustaining solutions
- integrated outcomes beyond delivery.

Additional objectives have been developed under the four typical landscape scenarios:

- rural landscapes
- ecologically sensitive areas
- townships
- temporary treatments.

#### 7.3.1.2 Inland Rail landscape and rehabilitation framework

The Inland Rail Landscape and Rehabilitation Framework (ARTC, 2019b) (the Framework) has been developed to establish governing landscape objectives and principles for the Inland Rail program. The Framework provides guidance for detailed design and construction, including performance outcomes for the design of landscape treatments, the objectives of the Framework are to:

- Support the Objectives and Principles of the Landscape and Rehabilitation Strategy, with respect to 'Conserve and connect, 'Self-sustaining solutions', 'Integrated outcomes', and 'Beyond delivery'.
- Capture the landscape and rehabilitation measures in the Primary Approval Document, Conditions of Approval and operational requirements for implementation and maintenance.
- Support compliance with the relevant project Conditions of Approval (when available).

- Provide the framework for the development of completion criteria that can be applied consistently program-wide as well as be tailored to individual projects to achieve the required outcomes for reinstatement, rehabilitation and revegetation of disturbed areas, meeting statutory requirements.
- Define a list of contractual requirements for the design and implementation of landscape/rehabilitation treatments. Contractual requirements to be incorporated into project schedules, forecasts and bill of quantities.

Ensure collaboration across multiple disciplines, such as engineering and environment (including noise, ecology, heritage, sustainability, geotechnics, etc) as well as Construction and Operations Teams, to deliver a sensitive, informed and integrated outcome.

### 7.3.2 Proposal detailed design

#### 7.3.2.1 Landscape and urban design objectives for this proposal

The following general urban design objectives should be used to guide the development of the detailed design for the proposal:

- to fit sensitively within the setting and topography of each landscape typology it passes through
- to minimise impacts to cross connectivity and maximise active transport permeability for communities
- to design built form elements that fit well in their setting, are legible and minimise disturbance to existing connectivity
- to design built form elements that respect the setting of heritage items and places
- to respond to the local natural and cultural context to integrate the proposal into the local setting
- to minimise landscape and visual impacts for communities
- to deliver a fully integrated resilient landscape corridor that that requires minimal maintenance.
- The following would be undertaken during the detailed design phase of the proposal. This work would respond to potential impacts identified and mitigation measures recommended in the EIS, including within section 9.1.1 of this report.

The following would be undertaken during the detailed design phase of the proposal. This work would respond to potential impacts identified and mitigation measures recommended in the EIS, and also ongoing community engagement activities.

#### 7.3.2.2 Urban design and landscape plan

During detailed design, an urban design framework and associated urban design and landscape plan would be prepared by a suitably qualified consultant in consultation with relevant stakeholders (including councils and the community). This would be context specific and include a vision and place-specific objectives and principles to ensure the design is well integrated into its surrounding environment as far as practicable. The strategy would employ a suite of strategies that include the following:

- Design of bridges and retaining walls, to incorporate anti-graffiti treatments and finishes
- The height of retaining walls to be minimised where possible, and incorporated into landscaped areas to minimise their visibility
- Retaining walls and engineered structures to be finished with a colour and materials that recede and blend into the landscape where possible
- Cycle and footpath connectivity to be restored where impacted to maintain local access and permeability and support local legibility and wayfinding
- Opportunities for cycle and footpath connections that connect to wider regional networks to be established where possible
- Footpaths to be shaded by trees where feasible with an aim of achieving a 40% canopy cover at maturity
- Colours, forms and materials of the Albury Station pedestrian bridge and Wagga Wagga Station pedestrian bridge to be sympathetic to the heritage setting
- The impacted play equipment at Cassidy Parade is to be replaced with play equipment appropriate to service local community needs and in accordance with current standards
- Opportunities for heritage interpretation and placemaking to be explored at the Cassidy Parade pedestrian bridge, Wagga Wagga Station pedestrian bridge and Kemp Street bridge
- Where open space is located alongside the rail corridor additional vegetation should be provided to screen passing trains from recreational facilities such as seating areas, picnic shelters, public amenities, playgrounds and monuments where feasible
- Screening vegetation to be provided where space within the rail corridor allows, to screen views of passing trains and engineered structures from adjacent residential areas
- Opportunities for off site screening of the rail corridor, to minimise views to passing trains and engineered structures, to be coordinated with local stakeholders and the relevant local government authority
- Screening panels to be incorporated into bridges where there is a potential for overlooking or direct light spill onto private property, such as at the Cassidy Parade pedestrian bridge
- Opportunities for enhancement of open space areas impacted by construction and adjacent to the enhancement sites, including at the Kemp Street bridge, to be explored in consultation with the local government authority, where opportunities exist, including the provision of trees and gardens, passive recreation facilities and shared user paths
- Street trees to be provided along the rail corridor where appropriate and in consultation with relevant local council
- Garden areas to incorporate sufficient soil depth and width to ensure the establishment of healthy planting

- Plant palette to incorporate planting identified as resilient to future climate conditions in urban areas
- Incorporate water sensitive urban design measures into the design of landscaped and public domain areas
- Maximum 1:4 slopes to be used in areas of open space and slopes greater than 1:4 to be mass planted
- CPTED to be considered through the detail design of public domain areas including ensuring clear site lines and maximising opportunities for passive surveillance.

#### 7.3.2.3 Rehabilitation strategy

Large areas of landscape and habitat rehabilitation would be required along the length of the proposal site. The urban design and landscape plans developed during the detailed design phase would incorporate a landscape and rehabilitation strategy. The strategy would include consideration of the following:

- rehabilitation of riparian areas disturbed during construction
- rehabilitation of temporary construction areas to agreed pre-existing conditions
- rehabilitation of temporary construction areas where existing native vegetation is adjacent and the landholder agrees
- to minimise exposed surfaces
- establishment of appropriate native grass species within the rail corridor where practicable.

The specific landscape rehabilitation recommendations would be developed in response to the following proposal requirements:

- implement a low maintenance landscape
- reinstate native vegetation to match local ecological communities
- provide for fauna habitat and connectivity as far as possible
- select species to ensure biosecurity issues and adjoining landholder activities are considered
- consideration of a staged approach to provide initial stabilisation and long term self-sustaining landscape treatments.

#### 7.3.2.4 Reference documents

The urban design framework, landscape and urban design plan, and rehabilitation strategy would be prepared in accordance with relevant guidelines, policies and strategies, including:

- Conditions of approval for the proposal
- AS4282-2019 Control of the obtrusive effects of outdoor lighting
- *Beyond the Pavement: Urban design policy, procedures and design principles* (Transport for NSW, Centre for Urban Design, 2020)
- *Bridge Aesthetics: Design guidelines to improve the appearance of bridges in NSW* (Transport for NSW, Centre for Urban Design, 2019)
- Crime prevention through environmental design (CPTED) principles
- *Better Placed Design Guide for Heritage Implementing the Better Placed policy for heritage*

*buildings, sites, and precincts* (NSW State Government Architect, 2019)

- Technical guideline for Urban Green Cover in NSW: technical guidelines (Office of Environment and Heritage, 2015)
- NSW Sustainable Design Guidelines Version 4.0 (Transport for NSW, 2017)
- *Landscape design guideline: Design guideline to improve the quality, safety and cost effectiveness of green infrastructure in road corridors* (Roads and Maritime Services, 2018)
- *Urban Design for Regional NSW: A guide for creating healthy built environments in regional NSW* (NSW Government Architect, 2020)
- Inland Rail Landscape and Rehabilitation Strategy (ARTC, 2019)
- Inland Rail Landscape and Rehabilitation Framework (ARTC, 2019)
- Inland Rail Landscape and Landscape and Rehabilitation Specification (ARTC, 2019).

## 7.4 Predicted effectiveness of the mitigation and management measures proposed

The mitigation measures specified above are anticipated to reduce the likelihood and/or consequence of the identified risks. Mitigation measures which rely upon landscape screening would have limited effectiveness in the short term and reduce the impact level slowly over time. Where an identified impact is reduced but not eliminated, it would be assessed further through all project stages to determine if further action is required. Overall, there will be residual visual impacts due to the scale and extent of the proposal that cannot be reduced or eliminated.

Landscape and urban design opportunities and constraints have been identified (Refer to Appendix A, B and C) and would be further explored during detailed design. These measures, combined with implementing the urban design and landscape plan and rehabilitation strategy, would develop a solution that maximises the protection of the existing visual values and landscape character of the proposal site and adjoining areas. Audits and reporting of the effectiveness of environmental management measures is generally carried out to show compliance with management plans and other relevant approvals and would be outlined in detail in the CEMP. The rehabilitation strategy would include procedures for monitoring and maintaining landscaped areas to ensure planting becomes established and ensure the effectiveness of these treatments are appropriately implemented and maintained.

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TECHNICAL PAPER

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Landscape and visual impact assessment

# **Appendix A** Albury landscape and urban design concept report

**ALBURY TO ILLABO** ENVIRONMENTAL IMPACT STATEMENT

# INLAND RAIL

## Albury to Illabo

### ALBURY

## LANDSCAPE & URBAN DESIGN CONCEPT REPORT

**18 August 2021**

Revision: C

Prepared by: cuspiris

Prepared for: WSP ARTC

**Document Control Sheet**

| | |
|---|---|
| Project | Albury to Illabo, Albury |
| Report Title: | Albury Landscape and Urban Design Concept Report |
| Revision / Version: | Issue Rev A |
| Approved by: | Philip Kleinschmidt |
| File Location: | Z:\Synergy\Projects\20\20094 Inland Rail - A21 & S2P\03 Working\02 InDesign |

| Revision | Date | Approved |
|---|---|---|
| Rev A | 12.08.2021 | PK |
| Rev B | 18.08.2021 | PK |
| Rev C | 18.08.2021 | PK |



# Contents

# 01. Landscape & Urban Design Statement

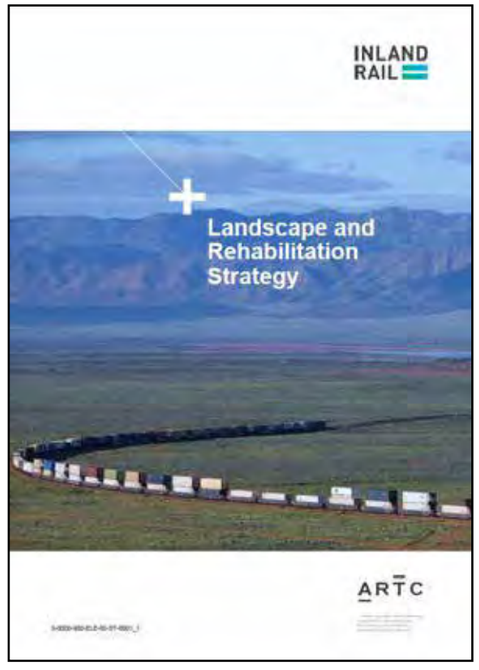
The Landscape and Urban Design Concept Design for Inland Rail Albury to Illabo – Albury - has been developed to integrate the new infrastructure within the urban setting.

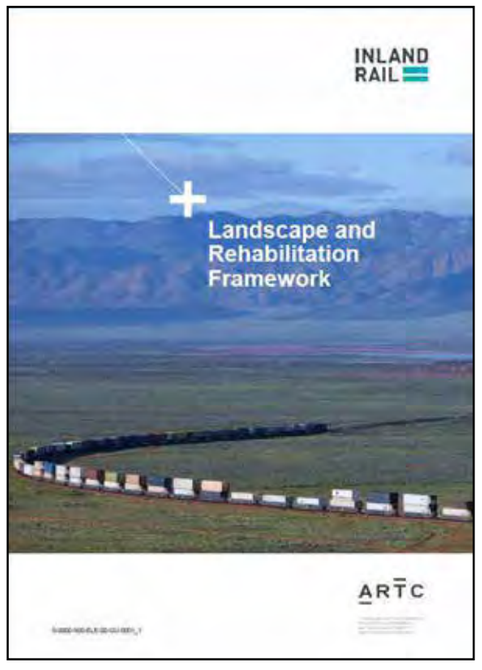
The concepts will employ a suite of strategies including:

- **selection of materials and forms that are sympathetic to the heritage qualities**
- **a focus on integrating good urban design into the structural design of bridges;**
- **maximising local connectivity and permeability wherever possible;**
- **enhancing the natural qualities of the urban environment through provision of shade, screening and amenity planting where ever possible;**
- **considering CPTED design principles with a focus on activation and passive surveillance; and**
- **minimising ongoing maintenance through the selection of robust materials and fast establishing soft landscape areas that stabilise disturbed areas.**

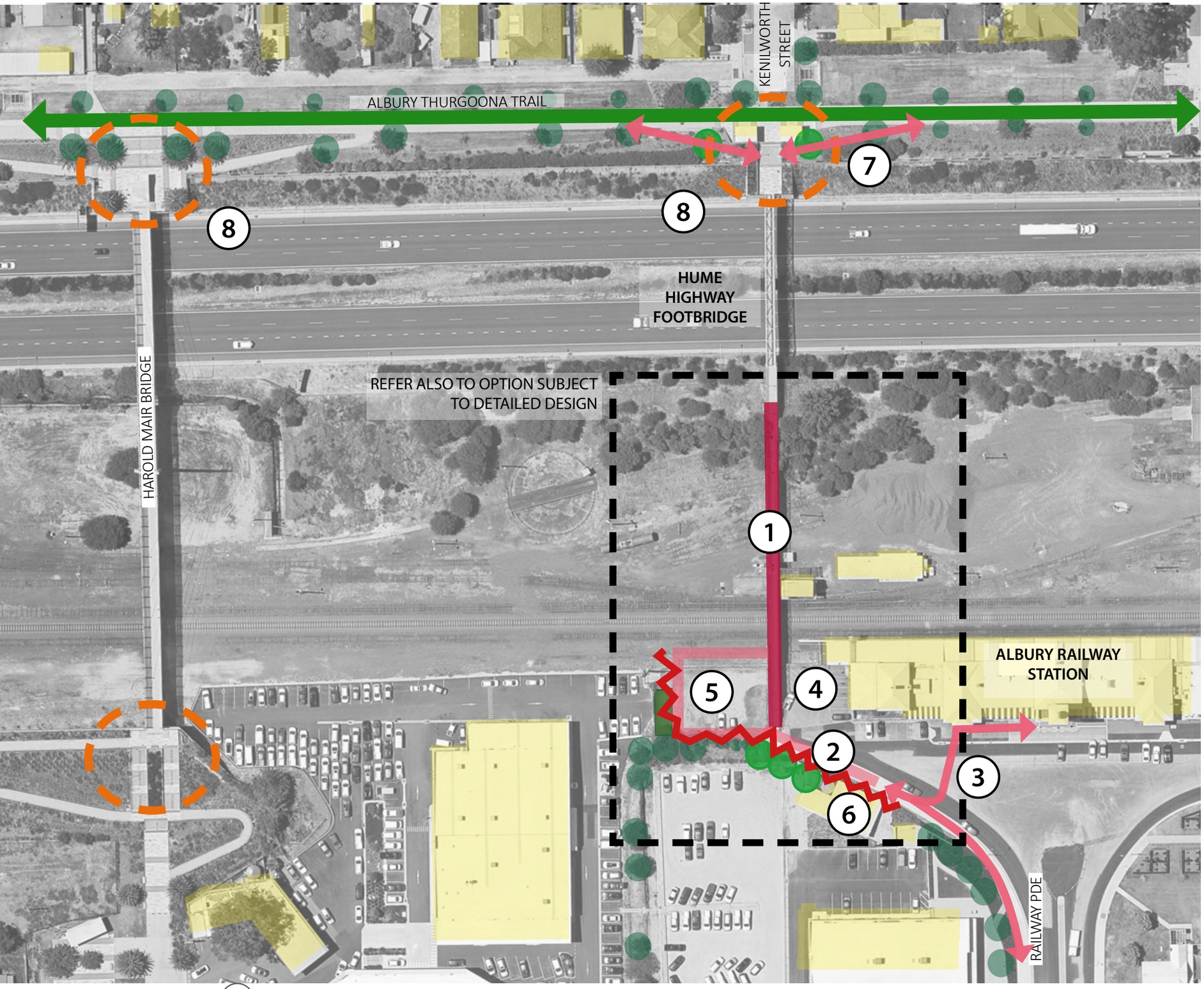
The landscape & urban design concepts have been developed to respond to the requirements of relevant Inland Rail landscape and rehabilitation design guidelines, as well as the RMS 'Beyond the Pavement'.

Future detailed design will be developed in accordance with the full list of Australian Standards and NSW Government design guidelines listed in the Inland Rail Landscape and Rehabilitation Framework.




# 02. Albury Station Footbridge Opportunities & Constraints




## BRIDGE URBAN DESIGN OPPORTUNITIES

The truss structure on the Hume Highway footbridge is visually heavy. Detailing of safety screens should match the Harold Mair Bridge which is visually more transparent.

Align the bridge, stairs and elevated ramps orthogonal to the building to be sympathetic to the architectural forms.

Detailing of the connection between the new and existing bridge should create a neat junction. The underside of the superstructures should align.

Blade columns (not round) to create an architectual form more sympathetic to the heritage station building.

Painted metalwork in colours sympathetic to the heritage setting. Safety screens should be as visually light as possible whilst meeting safety requirements.

Integrate functional lighting and bridge drainage.

## LANDSCAPE OPPORTUNITIES & CONSTRAINTS

1. New Albury Footbridge
2. Improve the legibility & amenity of pedestrian connection from bridge to Station and Railway Parade. Current connection through back of house carparking does not provide good CPTED or wayfinding outcomes.
3. Ramp to start at existing pedestrian crossing. Use brick walls to visually integrate the ramp structure with the station setting. Provide landscaping and shade tree planting - clear trunked specimens - where space allows
4. Existing carparking
5. Existing gravel parking.
6. Filter views over adjacent commercial back of house area
7. Provide DDA compliant access to existing Hume Highway footbridge. Ramps & retaining walls to match detailing on the Harold Mair Bridge
8. Existing bridge nodes

WAYFINDING NODE

FOOTPATH CONNECTION

SCREEN / FILTER VIEWS (INTERNAL, EXTERNAL)

EXISTING TREES

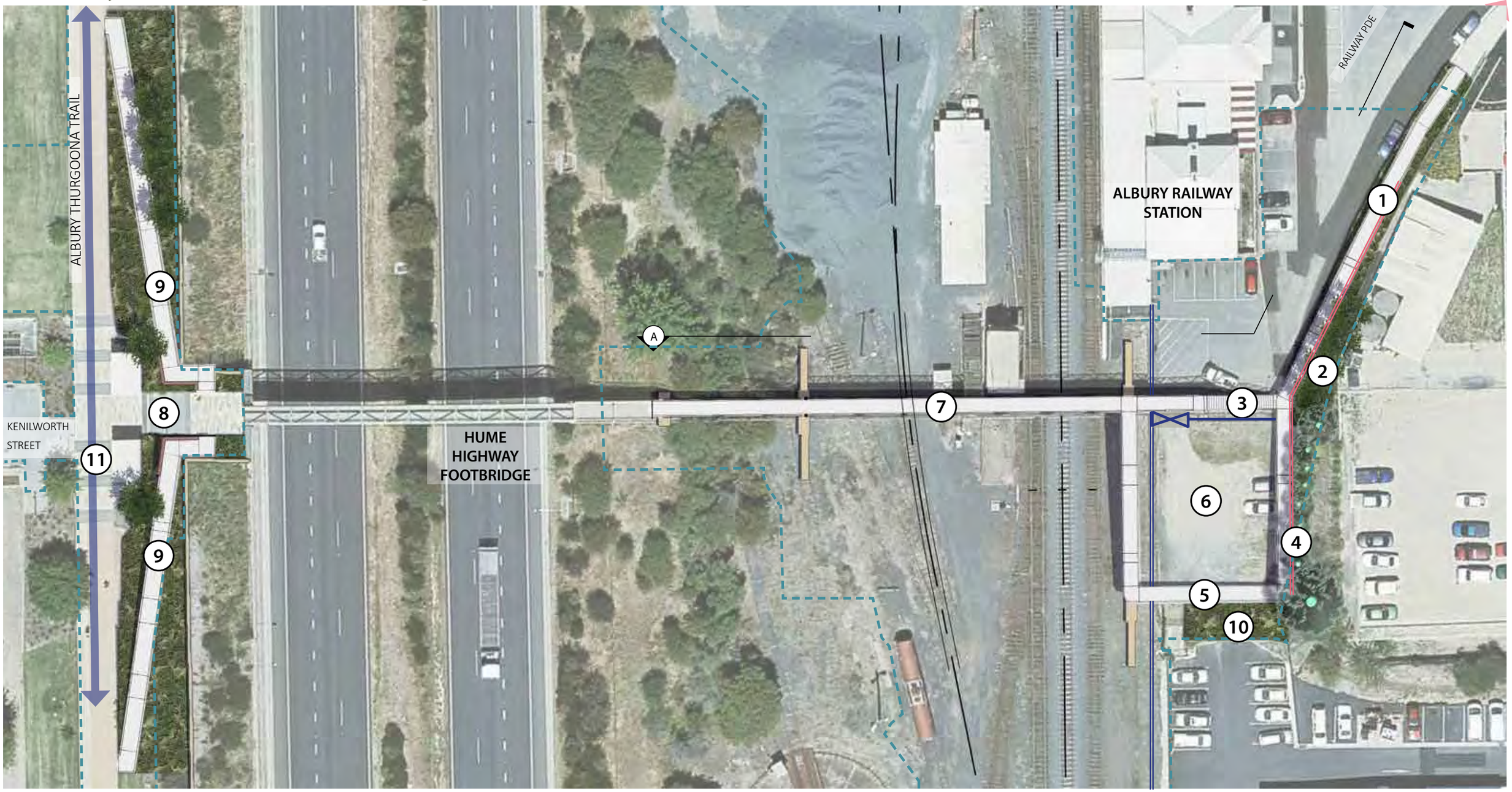
OPPORTUNITY FOR NEW TREES

OPPORTUNITY FOR NEW PLANTING

Scale 1:1000 @ A3

0 10 20 50m

# Albury Station Footbridge Landscape Masterplan




**LEGEND**

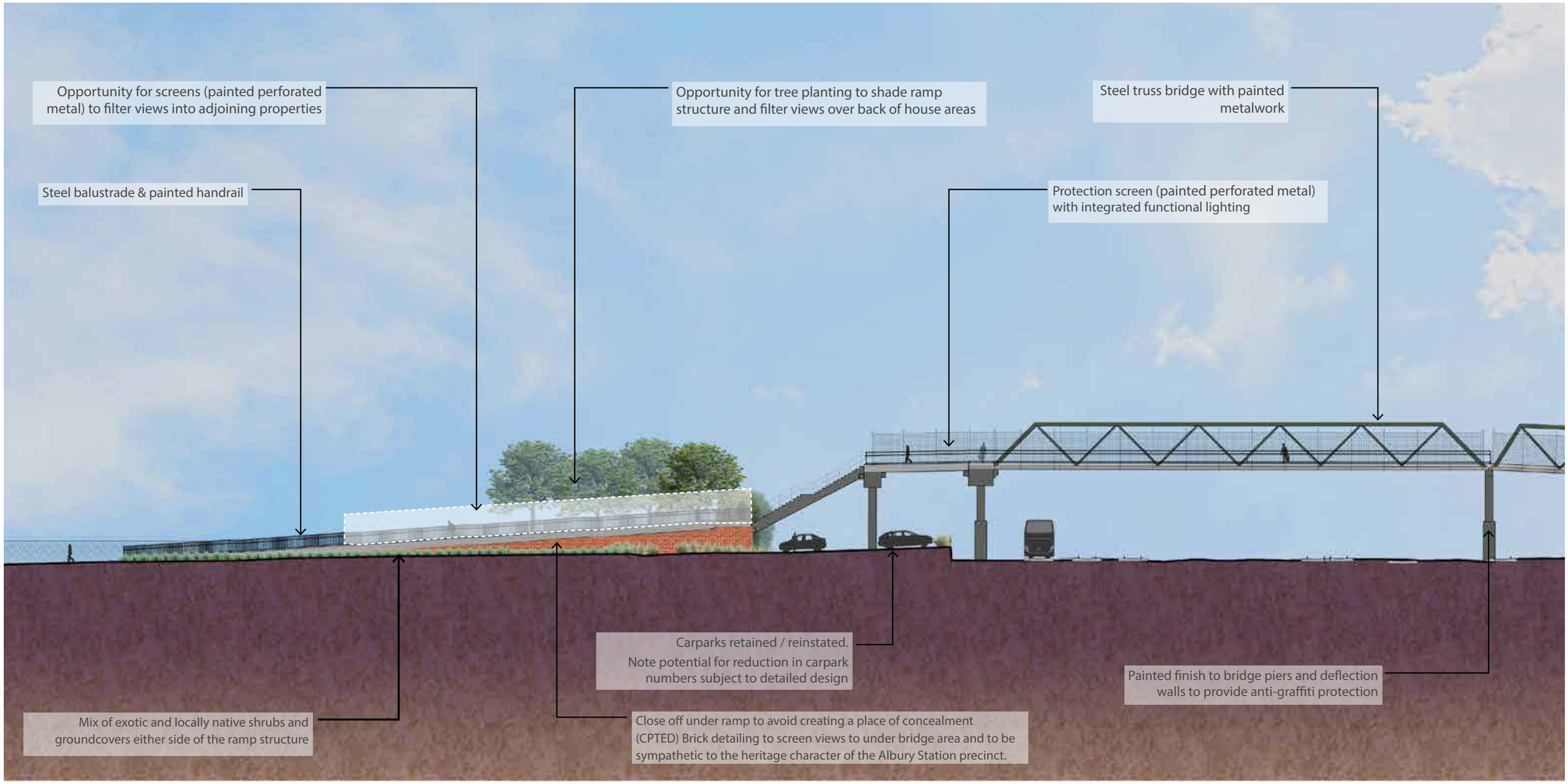
1. Landscaping & urban design treatments to visually integrate the ramp structure, secure & conceal the under bridge area, and provide a public realm sympathetic to the heritage setting
2. Opportunity for tree planting to shade ramp structure and filter views over back of house areas
3. Stairs with compliant treads, handrails and tactiles
4. Opportunity for screen (PINK LINE) - painted perforated metal - to filter views into adjoining properties
5. Elevation ramp structure with reinforced concrete deck and steel balustrade & painted handrail.
6. Existing secure gravel carpark
7. Steel truss bridge with cast-in-place concrete deck and steel protection screen
8. Existing stairs
9. New DDA compliant ramp, retaining walls and planting. Replace existing tree to be removed to accommodate new works. Ramp alignment to avoid impacts on existing structure. (Subject to detailed design)
10. Mix of locally native shrubs & ground covers in mounded gardens
11. Existing shade shelters

RAIL CORRIDOR SECURITY FENCE
DEFLECTION WALLS
CONSTRUCTION IMPACT ZONE
EXISTING FOOTPATH
ALBURY - THAGOONA TRAIL

Scale 1:500 @ A3

0 5 10 25m

# Albury Station  Footbridge Elevation A




Scale 1:250 @ A3

0 5 10m

# 03. Planting Palette

| | TREES | | | | | | LOCATION | |
|---|---|---|---|---|---|---|---|---|
| | BOTANICAL NAME | COMMON NAME | NATIVE | EXOTIC | MATURE HEIGHT | MATURE WIDTH | KENILWORTH STREET | ALBURY STATION |
| 1 | Brachychiton populneus | Kurrajong | N | | 10-15m | 10-20m | | √ |
| 2 | Quercus palustris | Pin Oak | | E | 10-15m | 5-7m | √ | |
| 3 | Melia azedarach 'Elite' | White Cedar (low fruiting variety) | N | | 6-10m | 8-10m | √ | |
| 4 | Pyrus calleryana 'Aristocrat' | Aristocrat Pear | | E | 9-11m | 5-7m | | √ |





* Note: Minimum pot size to be 100 litre

# Planting Palette

| | SHRUBS > 1M | | | | | | LOCATION | |
|---|---|---|---|---|---|---|---|---|
| | BOTANICAL NAME | COMMON NAME | NATIVE | EXOTIC | MATURE HEIGHT | MATURE WIDTH | KENILWORTH STREET | ALBURY STATION |
| 5 | Atriplex spp | Saltbush | N | | 2-3m | 2-4m | √ | √ |
| 6 | Banksia spp | Banksia | N | | 3-5m | 2-4m | √ | √ |
| 7 | Callistemon spp | Bottlebrush | N | | 2-4m | 1-2m | √ | √ |
| 8 | Eremophila spp | Dogwood | N | | 3-5m | 2-4m | √ | √ |
| 9 | Grevillea spp | Grevillea | N | | vary | vary | √ | √ |
| 10 | Kunzea baxteri | Scarlet Kunzea | N | | 2-3m | 2-3m | √ | √ |
| 11 | Leptospermum spp | Tea-tree | N | | vary | vary | √ | √ |
| 12 | Photinia × fraseri 'Red Robin' | Red robin Photinia | | E | 2-4m | 2-4m | √ | √ |
| 13 | Viburnum odoratissimum | Sweet Viburnum | | E | 3-4m | 3-5m | √ | √ |
| | | | | | | | | |
| | **SHRUBS < 1M** | | | | | | | |
| 14 | Agapanthas africanus | Agapanthus | | E | 0.5m-1m | 0.5m-1m | √ | √ |
| 15 | Dietes bicolor | Peacock Iris | | E | 1m | 1m | √ | √ |


* Note:

Minimum pot size to be 200mm. Minimum planting density for screen planting to be double staggered row at 500mm centres. Elsewhere, minimum shrub planting density to be 2/m2

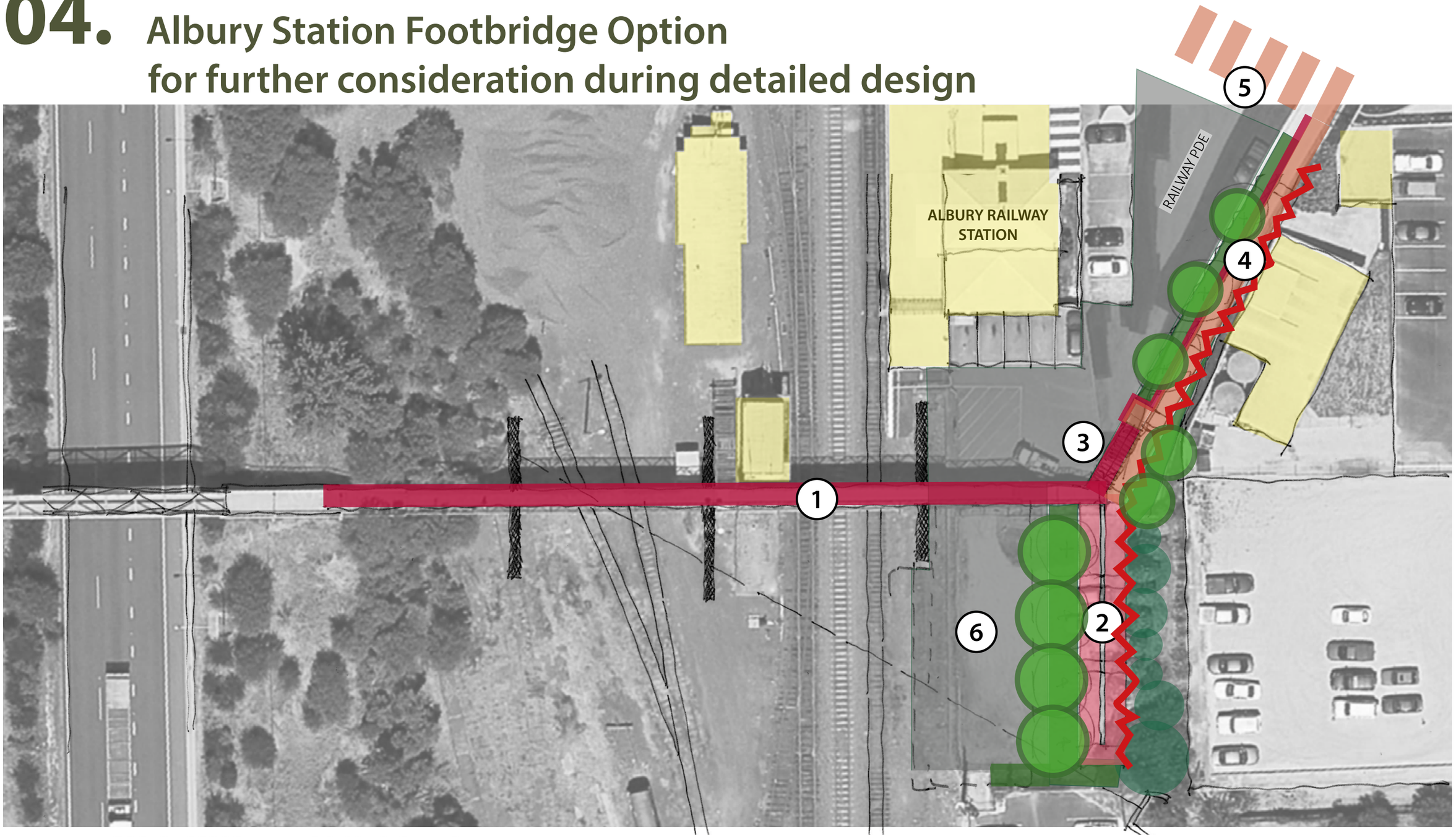
# Planting Palette

| | GROUNDCOVERS | | | | | | LOCATION | |
|---|---|---|---|---|---|---|---|---|
| | BOTANICAL NAME | COMMON NAME | NATIVE | EXOTIC | MATURE HEIGHT | MATURE WIDTH | KENILWORTH STREET | ALBURY STATION |
| 16 | Atriplex semibaccata | Australian Saltbush | N | | 0.2m | 1-2m | √ | √ |
| 17 | Grevilea 'Mt Tamboritha' | Mt Tamboritha Grevillea | N | | 0.3m | 1-2m | √ | √ |
| 18 | Grevillea × gaudichaudii | Prostrate Grevillea | N | | 0.5m | 2-3m | √ | √ |
| 19 | Grevillea juniperina | Juniper Grevillea | N | | 0.3-2m | 0.5-2m | √ | √ |
| 20 | Grevillea rosmarinifolia | Rosemary Grevillea | N | | 0.3-2m | 0.5-2m | √ | √ |
| | | | | | | | | |
| | **GRASSES** | | | | | | | |
| 21 | Dianella cultivars | | N | | Vary | Vary | √ | √ |
| 22 | Lomandra longifolia | Lomandra | N | | 1-2m | 1-2m | √ | √ |
| 23 | Lomandra 'Tanika' | Tanika Lomandra | N | | 0.5-1m | 0.3-0.6m | √ | √ |
| 24 | Poa labillardieri | Tussock Grass | N | | 0.5-1m | 0.5-1m | √ | √ |
| 25 | Liriope 'Evergreen Giant' | Evergreen Giant Liriope | | E | 0.4-0.6m | 0.2-0.4m | √ | √ |


* Note:

Minimum pot size for ornamental / amenity planting to be 140mm. Minimum planting density to be 3/m2

# 04. Albury Station Footbridge Option for further consideration during detailed design




## LANDSCAPE OPPORTUNITIES & CONSTRAINTS

1. New Albury Footbridge
2. Opportunity to reconfigurelevated ramp stucture (subject to additional survey and detailed design). Screen to filter views over adjacent commercial back of house areas. Shade tree planting - clear trunk specimens - within carpark.
3. Opportunity to realign stairs to improve legibility & wayfinding.
4. Ramp to start at existing pedestrian crossing. Use brick walls to visually integrate the ramp structure with the station setting. Provide landscaping and shade tree planting - clear trunked specimens - where space allows
5. Existing pedestrian crossing
6. Existing gravel carpark. Ensure bridge & ramp structures allow access to be maintained

SCREEN / FILTER VIEWS (INTERNAL, EXTERNAL)

EXISTING TREES

OPPORTUNITY FOR NEW TREES

OPPORTUNITY FOR NEW PLANTING

TECHNICAL PAPER

10

Landscape and visual impact assessment

# **Appendix B** Wagga Wagga landscape and urban design concept report

**ALBURY TO ILLABO** ENVIRONMENTAL IMPACT STATEMENT

# INLAND RAIL

## Albury to Illabo

### WAGGA WAGGA

## LANDSCAPE and URBAN DESIGN CONCEPT REPORT

**28 September 2021**

Revision: C

Prepared by:

cusp

iris

Prepared for:

wsp

ARTC

**Document Control Sheet**

| | |
|---|---|
| Project: | Albury to Illabo, Wagga-wagga Wagga Station Footbridge |
| Report Title: | Landscape DA Package |
| Revision / Version: | Issue Rev A |
| Approved by: | Philip Kleinschmidt |
| File Location: | Z:\Synergy\Projects\20\20094 Inland Rail - A21 & S2P\03 Working\02 InDesign |

| Revision | Date | Approved |
|---|---|---|
| Rev A | 23.07.21 | PK |
| Rev B | 23.07.21 | PK |
| Rev C | 28.09.21 | PK |



# Contents

# 01. Landscape & Urban Design Statement

The Landscape and Urban Design Concept Design for Inland Rail Albury to Illabo – Wagga Wagga -has been developed to sensitively integrate this new piece of critical infrastructure within the urban setting. The concepts for Cassidy Parade Footbridge, Wagga Wagga Station Footbridge and Edmondson Street road bridge are site responsive and will minimise the immediate impacts of the infrastructure on the local character, amenity and visual qualities.

The concepts will employ a suite of strategies including:

**- selection of materials and forms that are sympathetic to the heritage qualities**

**- a focus on integrating good urban design into the structural design of bridges;**

**- seeking opportunities for engagement with the place and community through integrating interpretation and artwork;**

**- maximising local connectivity and permeability wherever possible;**

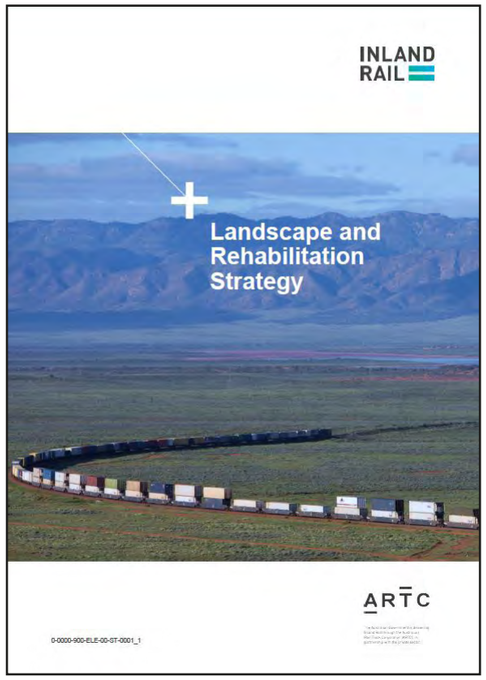
**- enhancing the natural qualities of the urban environment through generous provision of shade, screening and amenity planting;**

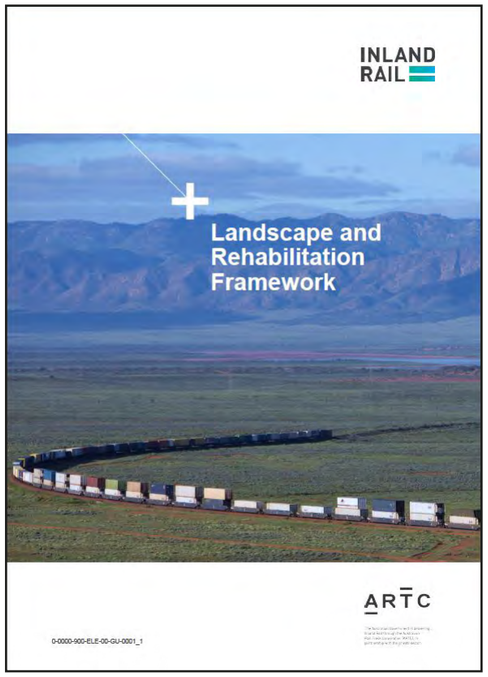
**- implementing CPTED design principles with a focus on activation and passive surveillance; and**

**- minimising ongoing maintenance through the selection of robust materials and fast establishing soft landscape areas that stabilise disturbed areas.**

The landscape & urban design concepts have been developed to respond to the requirements of relevant Inland Rail landscape and rehabilitation design guidelines, as well as the RMS 'Beyond the Pavement'.

Future detailed design will be developed in accordance with the full list of Australian Standards and NSW Government design guidelines listed in the Inland Rail Landscape and Rehabilitation Framework.




# 02. Context Plan


**LEGEND**

1. WAGGA WAGGA STATION
2. WAGGA WAGGA RAIL HERITAGE MUSEUM
3. RAIL HERITAGE MUSEUM GANG SHEDS
4. MULTICULTURAL COUNCIL OF WAGGA WAGGA
5. SOUTH WAGGA PUBLIC SCHOOL
6. MOUNT ERIN HERITAGE CENTRE
7. ERIN EARTH
8. KILDARE CATHOLIC COLLEGE
9. MOUNT ERIN BOARDING SCHOOL
10. TELSTRA DEPOT. FUTURE WAGGA WAGGA HEALTH & KNOWLEDGE PRECINCT

CITY CENTRE TO BOTANIC GARDENS WALKING TRAIL

BOURKE LINK CYCLE ROUTE

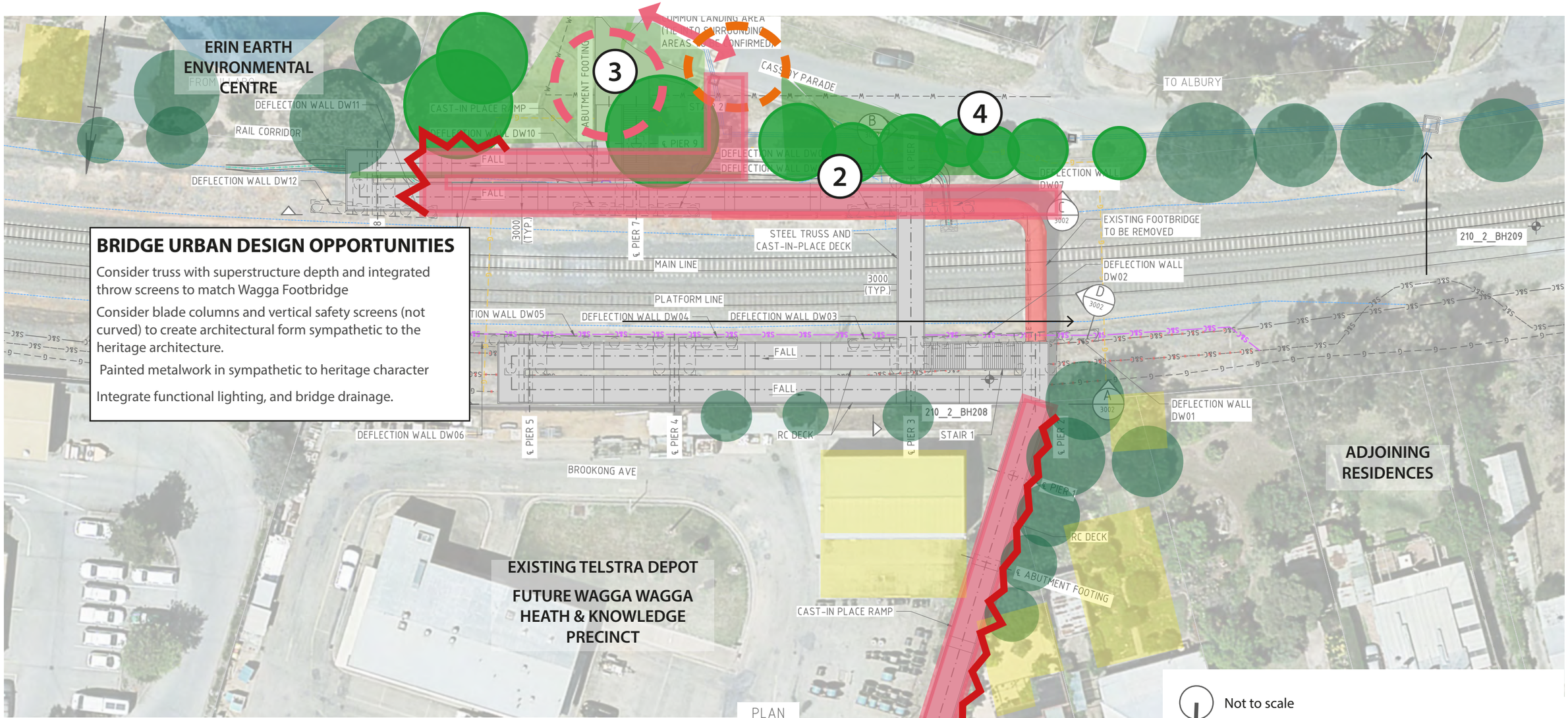
CENTRAL LINK CYCLE ROUTE

Source: Wagga City Council Active Travel Plan & Wagga Wagga + Surrounds Trail Map

Scale 1:2000 @ A3

0 20 40 100m 200m

# 03. Cassidy Parade Footbridge Opportunities & Constraints




## BRIDGE URBAN DESIGN OPPORTUNITIES

Consider truss with superstructure depth and integrated throw screens to match Wagga Footbridge

Consider blade columns and vertical safety screens (not curved) to create architectural form sympathetic to the heritage architecture.

Painted metalwork in sympathetic to heritage character

Integrate functional lighting, and bridge drainage.

PLAN
SCALE 1:250

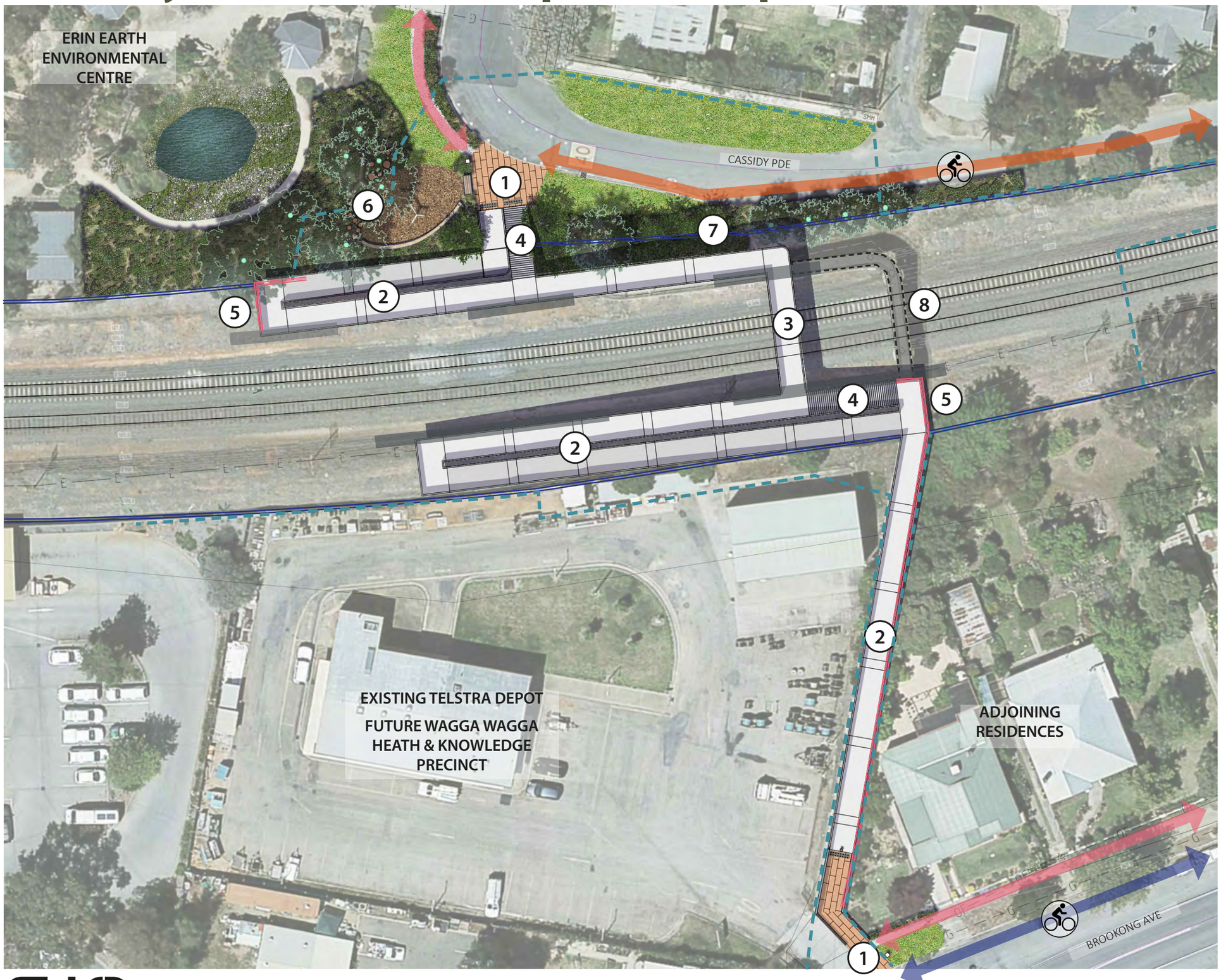
Not to scale

- WAYFINDING NODE
- OPPORTUNITY FOR PUBLIC REALM NODE
- FOOTPATH CONNECTION
- SCREEN / FILTER VIEWS (INTERNAL, EXTERNAL)
- EXISTING TREES
- PROPOSED TREES

## LANDSCAPE OPPORTUNITIES & CONSTRAINTS

1. Create wayfinding node at bridge landing with connections to Bourke Link & Central Link cycle route at Brookong Avenue. Wayfinding signage & pavement treatments to create pedestrian priority.
2. Detailing of under bridge areas should avoid creating places of concealment (CPTED).
3. Opportunity to reinstate pocket park play equipment *(Subject to community / stakeholder feedback)*
4. Connect bridge with the Bourke Link cycle route and pedestrian footpaths

# Cassidy Parade Landscape Masterplan




**LEGEND**

1. Wayfinding node
2. Elevation ramp structure with reinforced concrete deck and steel balustrade & painted handrail
3. Steel truss bridge with cast-in-place concrete deck and steel protection screen
4. Stairs with compliant treads, handrails and tactiles
5. Privacy screens (painted perforated metal) to minimise overlooking into adjoining properties
6. Reinstated playground equipment
7. New screen planting

RAIL CORRIDOR SECURITY FENCE

DEFLECTION WALLS

CONSTRUCTION IMPACT ZONE

EXISTING FOOTPATH

BOURKE LINK CYCLE ROUTE

CENTRAL LINK CYCLE ROUTE

Source: Wagga City Council Active Travel Plan & Wagga Wagga + Surrounds Trail Map

Scale 1:500 @ A3

0 5 10 25m

# Cassidy Parade Detail Plan

**LEGEND**

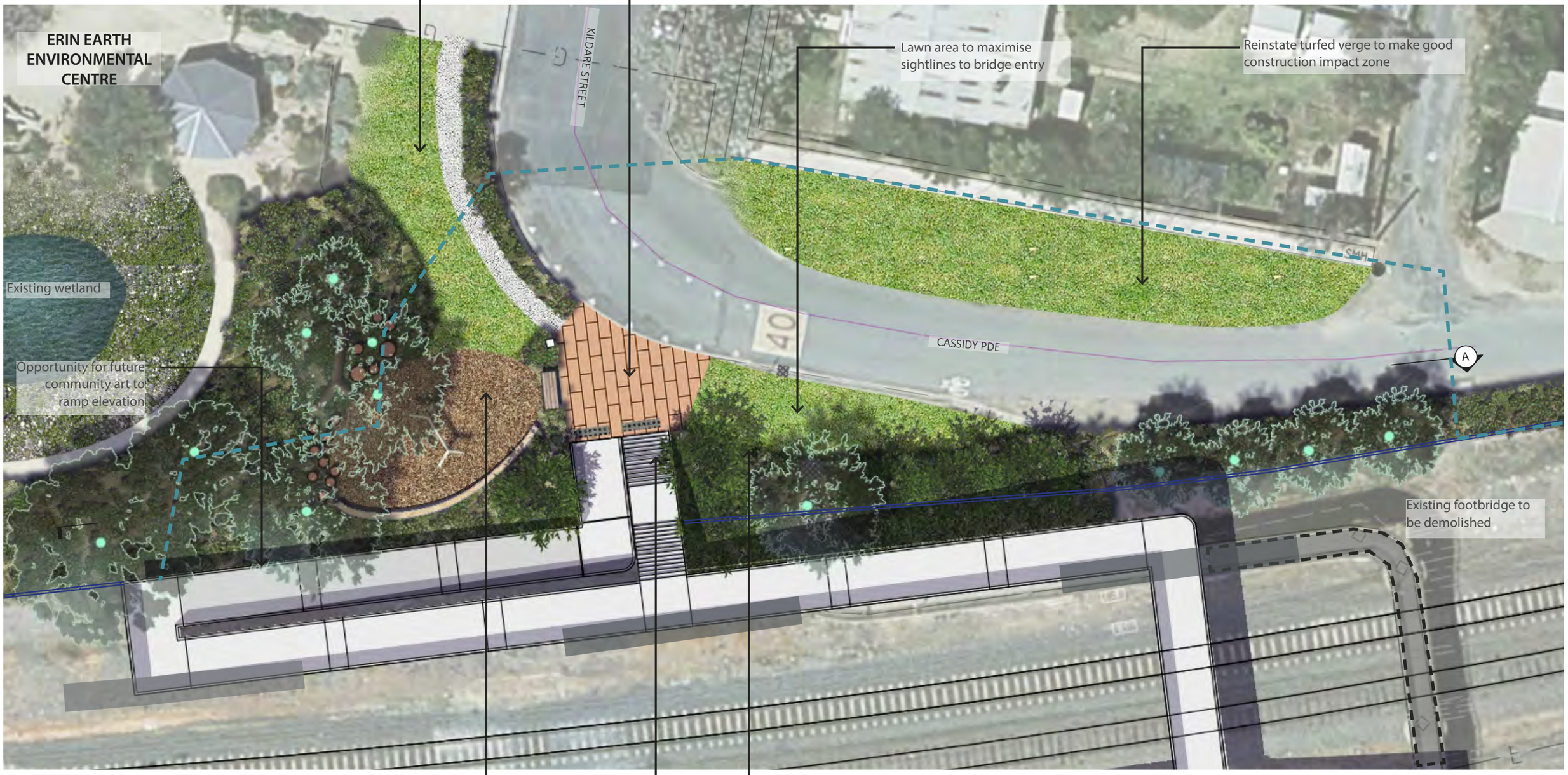
- RAIL CORRIDOR SECURITY FENCE
- DEFLECTION WALLS
- CONSTRUCTION IMPACT ZONE

Reinstate turf & planting to verge

Wayfinding node with contrast pavement, compliant seat & signage.
Opportunity to incorporate existing metalwork detail

Lawn area to maximise sightlines to bridge entry

Reinstate turfed verge to make good construction impact zone




Reinstate playground, including double swing set and nature play elements. Provide softfall to austalian standards

Provide informal seating wall and new shade & screen planting

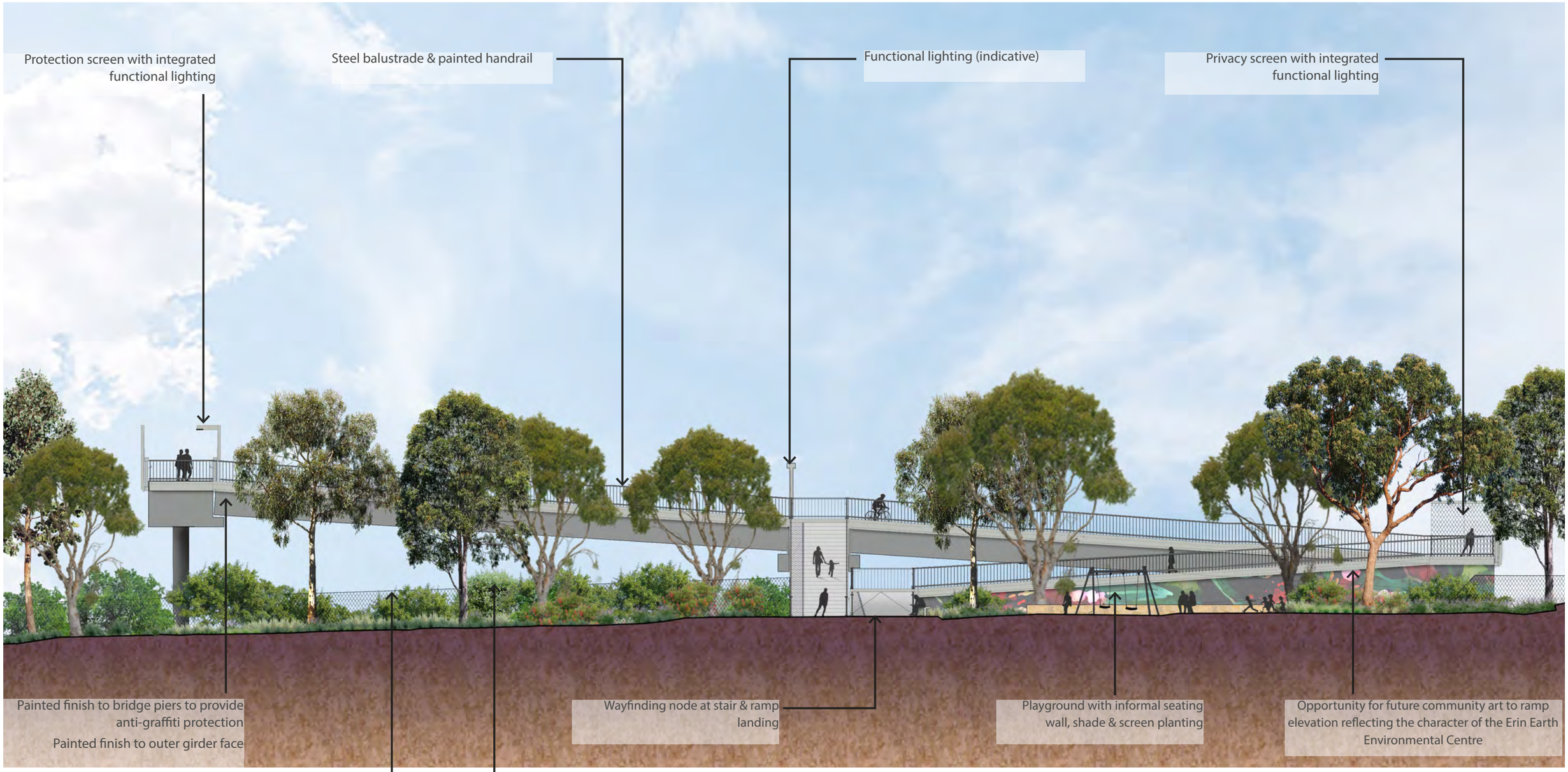
Close off under ramp & steps to avoid creating a place of concealment (CPTED)

New screen planting to filter views to the rail corridor and under bridge area.
Locally native small trees and large shrubs reflecting the character of the Erin Earth Environmental Centre.
Opportunity for vegetated swale in leiu of concrete spoon drain to meet WSUD objectives

Scale 1:250 @ A3

0 5 10m

# Cassidy Parade Ramp Elevation A



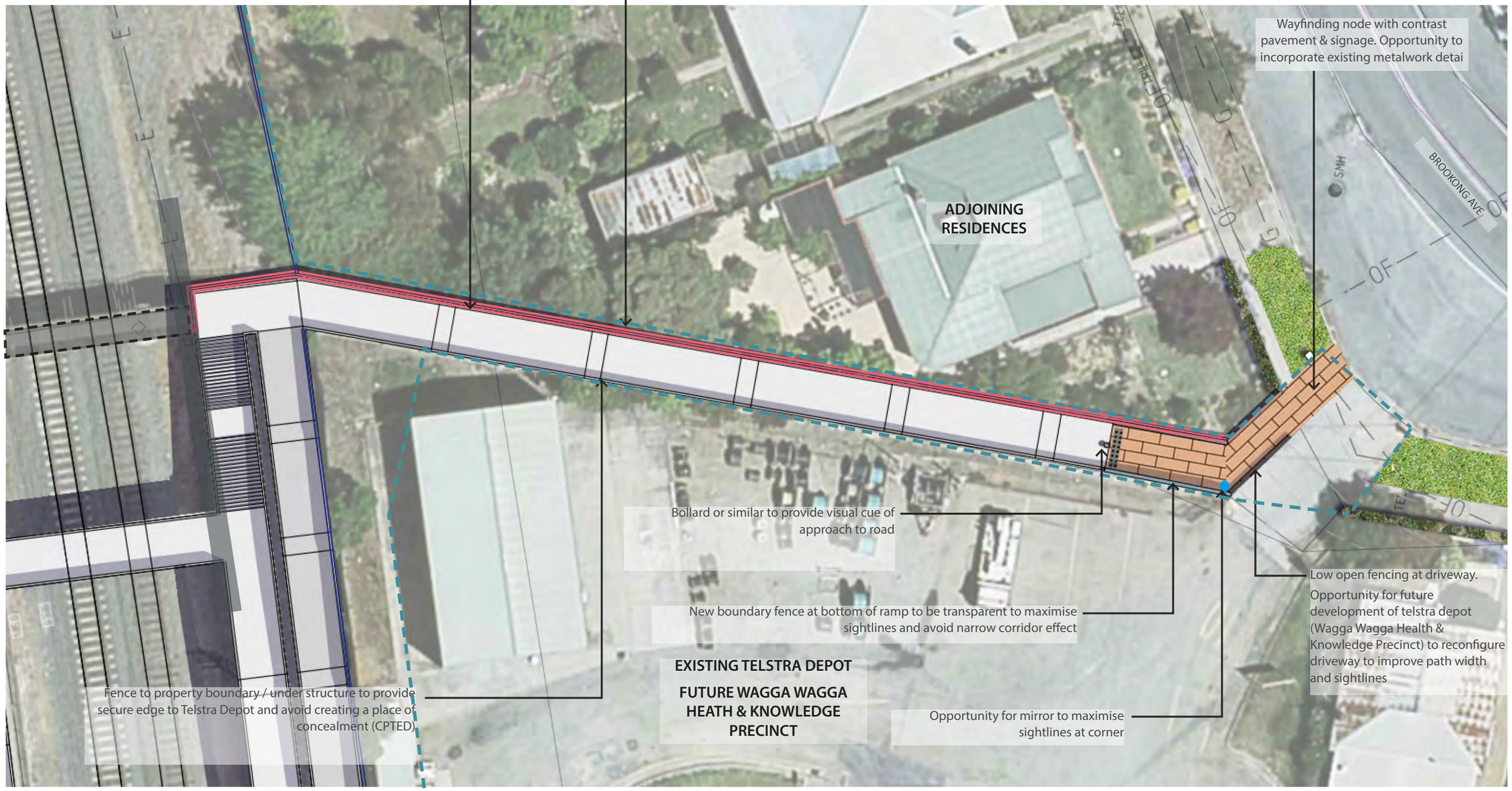

Scale 1:200 @ A3

0 1 2 3 5 10m

# Brookong Avenue Detail Plan

**LEGEND**

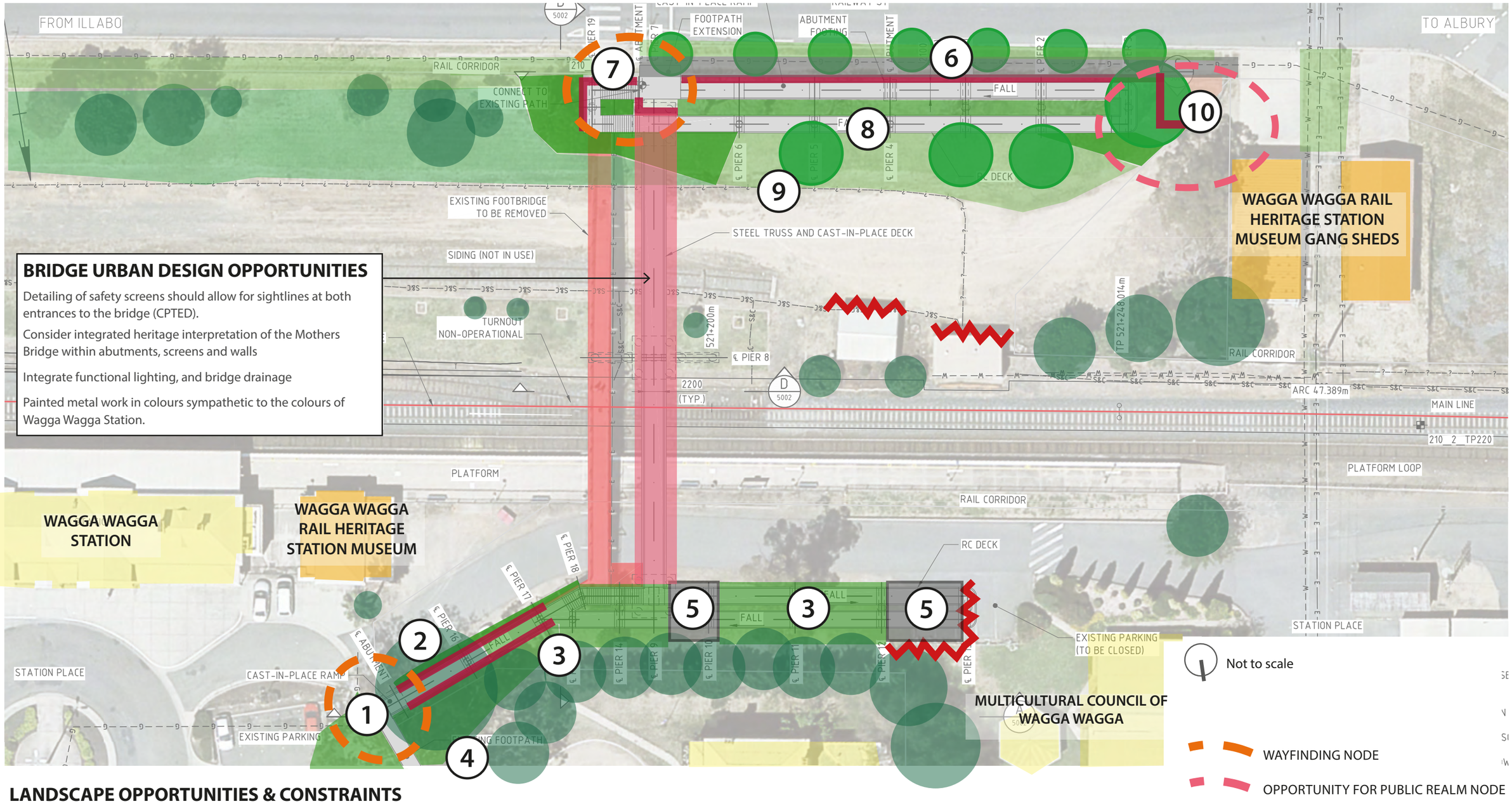
- RAIL CORRIDOR SECURITY FENCE
- DEFLECTION WALLS
- CONSTRUCTION IMPACT ZONE




Scale 1:250 @ A3

0 5 10m

# 04. Wagga Wagga Station Footbridge Opportunities & Constraints




## BRIDGE URBAN DESIGN OPPORTUNITIES

Detailing of safety screens should allow for sightlines at both entrances to the bridge (CPTED).

Consider integrated heritage interpretation of the Mothers Bridge within abutments, screens and walls

Integrate functional lighting, and bridge drainage

Painted metal work in colours sympathetic to the colours of Wagga Wagga Station.

Not to scale

WAYFINDING NODE

OPPORTUNITY FOR PUBLIC REALM NODE

RETAINING WALL WITH URBAN DESIGN / ANTI-GRAFITTI TREATMENT

SCREEN / FILTER VIEWS

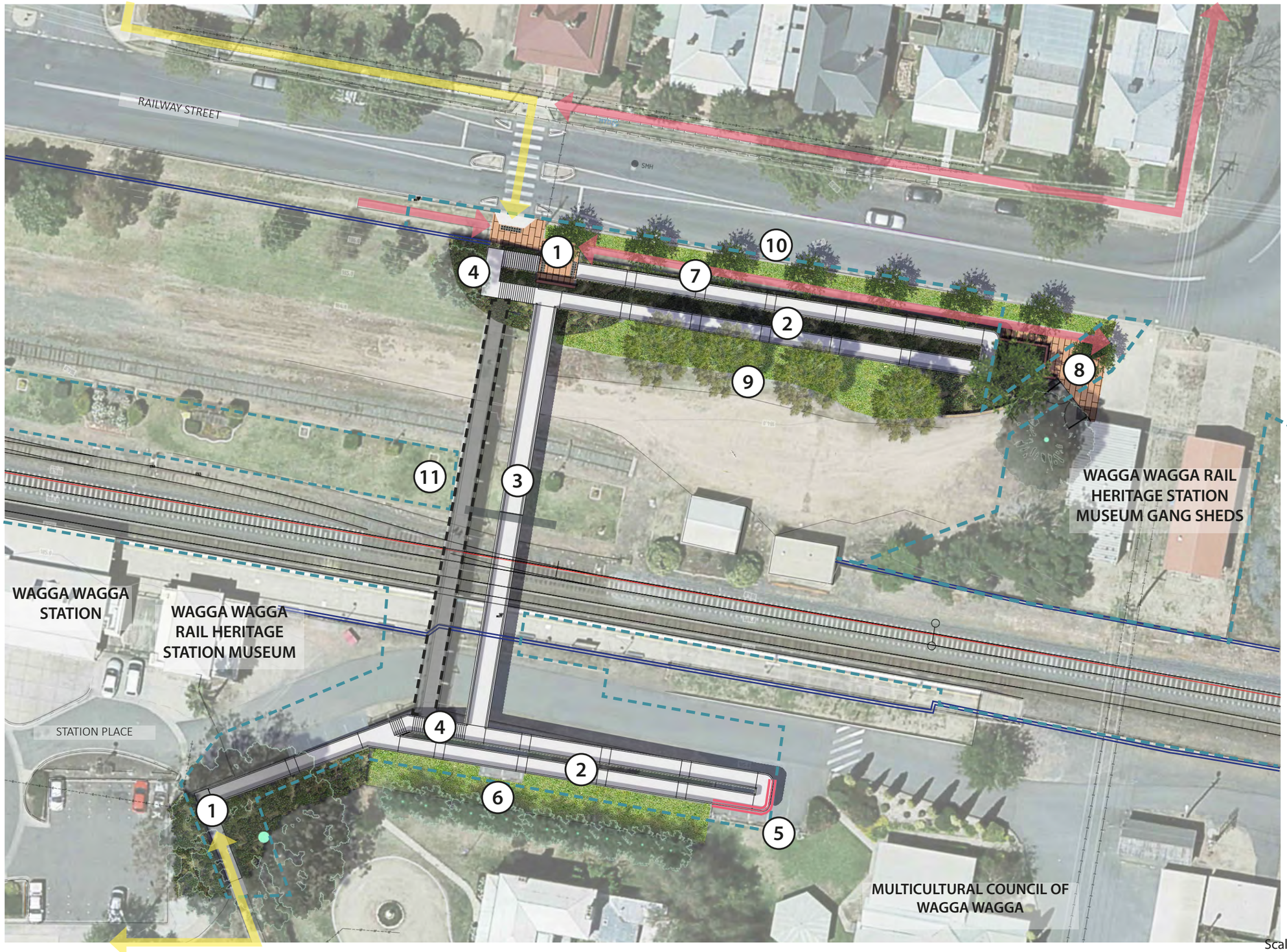
PROPOSED TREE PLANTING

EXISTING TREES

## LANDSCAPE OPPORTUNITIES & CONSTRAINTS

1. Create clear wayfinding with connections to the Station, Museum, Multicultural Council and Station Place
2. Use materials & architectural forms to visually integrate the ramp structure with the station setting. Consider mounded & landscaped lower ramp and/or use of walls to close off under structure
3. Opportunity to plant under ramp structure. Ensure ramp structure does not impact upon existing trees
4. Maintain pedestrian access to adjacent building and school
5. Opportunity to reinstate parking between bridge piers (with suitable vehicle barriers) where levels allow.
6. Opportunity for additional Street tree planting to strengthen avenue along Railway Street (planting to match existing Crepe Myrtle & Silky Oak species on opposite side of roadway)
7. Create wayfinding node at bridge landing with connections to City Centre, Gang Sheds & Edmondson St.
8. Use materials & architectural forms to visually integrate the ramp structure with the station setting. Consider mounded & landscaped lower ramp and/or use of walls to close off under structure
9. Shade tree planting - clear trunk specimens
10. Opportunity to create a node at the Gang Sheds integrating new compound entry

# Wagga Wagga Station Landscape Masterplan




**LEGEND**

1. Wayfinding node
2. Elevation ramp structure with reinforced concrete deck and steel balustrade & painted handrail.
3. Steel truss bridge with cast-in-place concrete deck and steel protection screen
4. Stairs with compliant treads, handrails and tactiles
5. Privacy screens (painted perforated metal) to minimise overlooking into adjoining properties
6. Opportunity to reinstate carparking under ramp structure where levels allow. Remaining under bridge areas to be reinstated as turf or new planting
7. Landscaping & urban design treatments to visually integrate the ramp structure, secure & conceal the under bridge area, and provide a high quality public realm. Landscape features to be co-ordianted with overland flow requirements
8. New seating node to provide public realm activation and surveillance. Opportunity for Gang Shed interpretation / break out space
9. Tree planting to shade ramp structure
10. Existing footbridge to be demolished
11. New street trees

RAIL CORRIDOR SECURITY FENCE

DEFLECTION WALLS

CONSTRUCTION IMPACT ZONE

EXISTING FOOTPATH

CITY CENTRE TO BOTANIC GARDENS WALKING TRAIL

Source: Wagga City Council Active Travel Plan & Wagga Wagga + Surrounds Trail Map

Scale 1:500 @ A3

0 5 10 25m

# Railway Street Detail Plan

**LEGEND**

RAIL CORRIDOR SECURITY FENCE

CONSTRUCTION IMPACT ZONE

Wayfinding node with contrast pavement, compliant seat & signage.
Opportunity for heritage interpretation of the original Mothers Bridge

New street trees

Existing pedestrian crossing

Existing footpath

SMH

RAILWAY STREET

C

B

Informal seating and new shade & screen planting. Opportunity for interpretation of Gang Sheds

Existng footbridge to be demolished

New shade tree planting

Close off under ramp & steps to avoid creating a place of concealment (CPTED)

Ornamental planting to filter views to the rail corridor and under bridge area.

Mix of exotic and locally native trees and shrubs sympathetic to the heritage character of the Wagga Wagga Station precinct

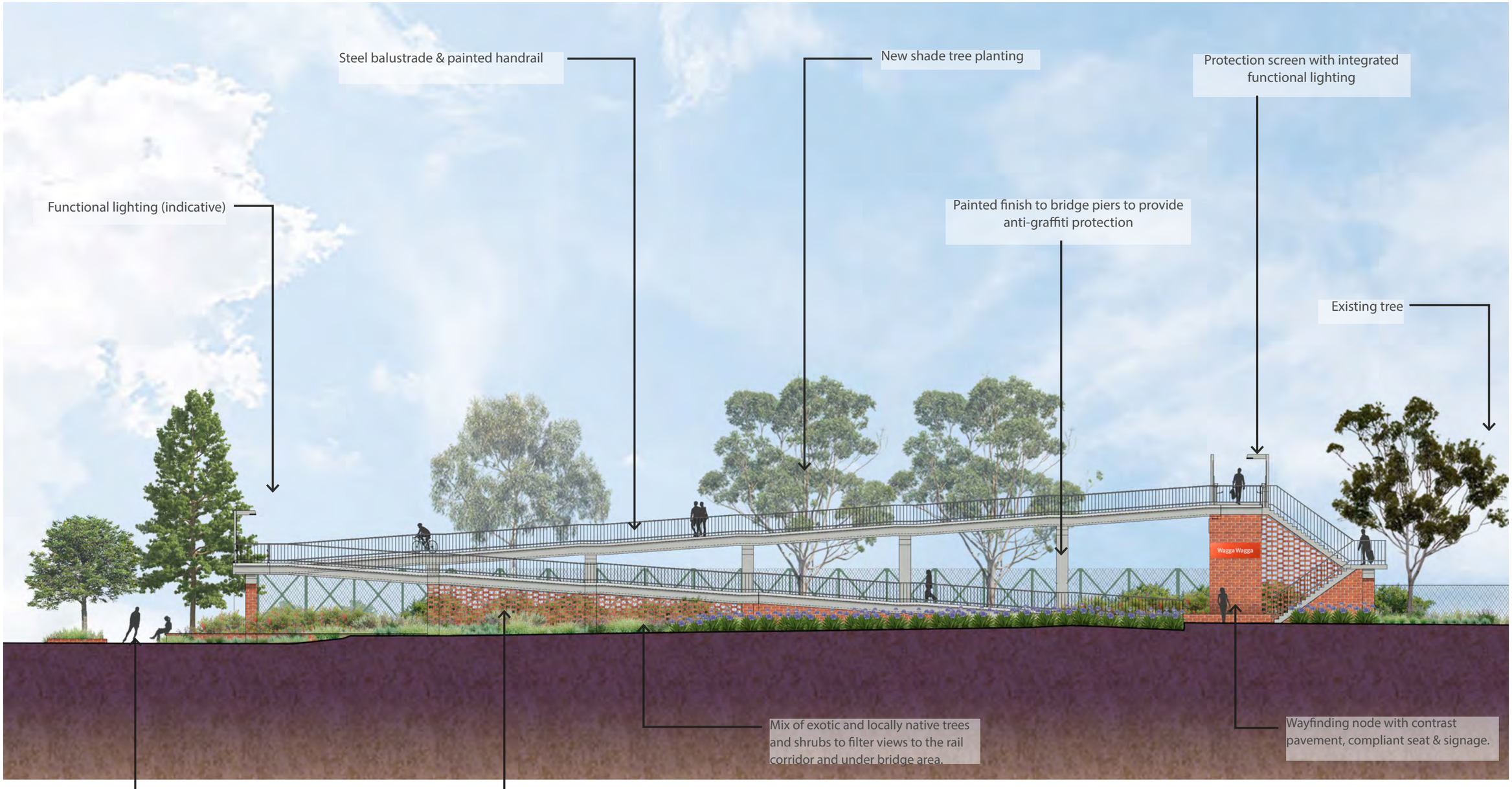
New compound entry gates. Vehicle access integrated into design of seating node to maximise public realm quality

**WAGGA WAGGA RAIL HERITAGE STATION MUSEUM GANG SHEDS**

Scale 1:250 @ A3

0 5 10m

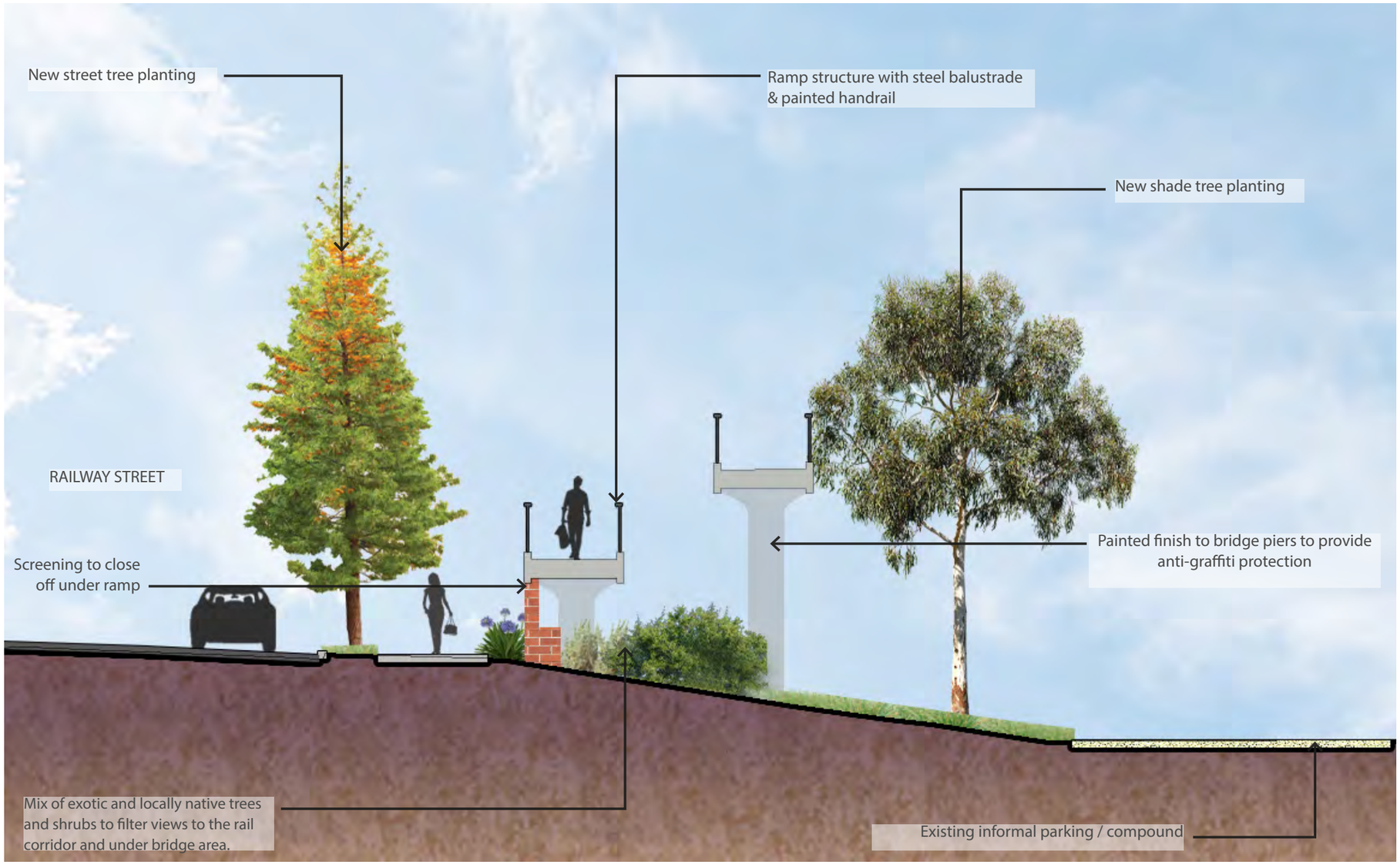
# Railway Street Ramp Elevation B




Scale 1:200 @ A3

0 1 2 3 5 10m

# Railway Street Ramp Section C



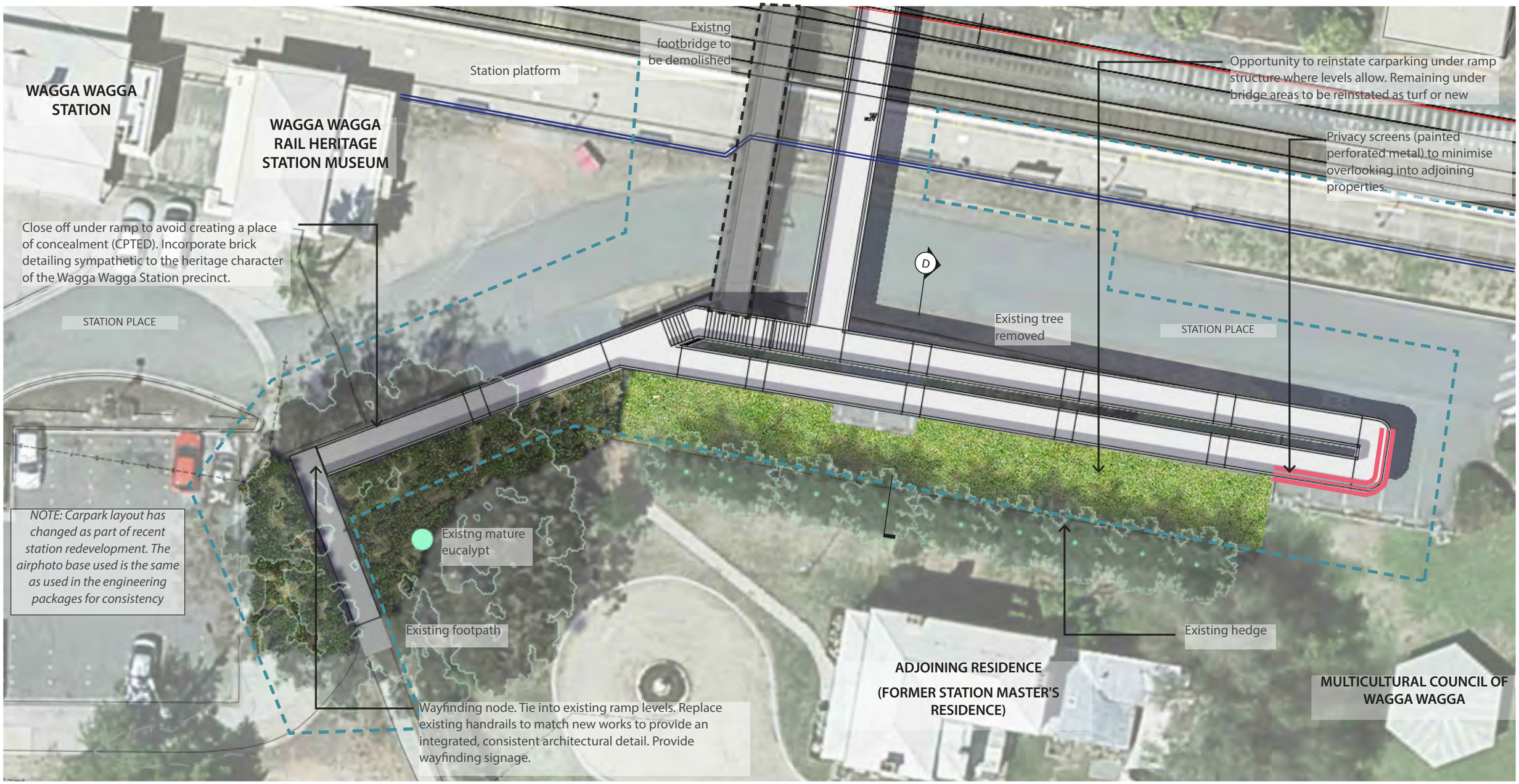

Scale 1:100 @ A3 0 1 2 5m

# Station Place Detail Plan

**LEGEND**

RAIL CORRIDOR SECURITY FENCE

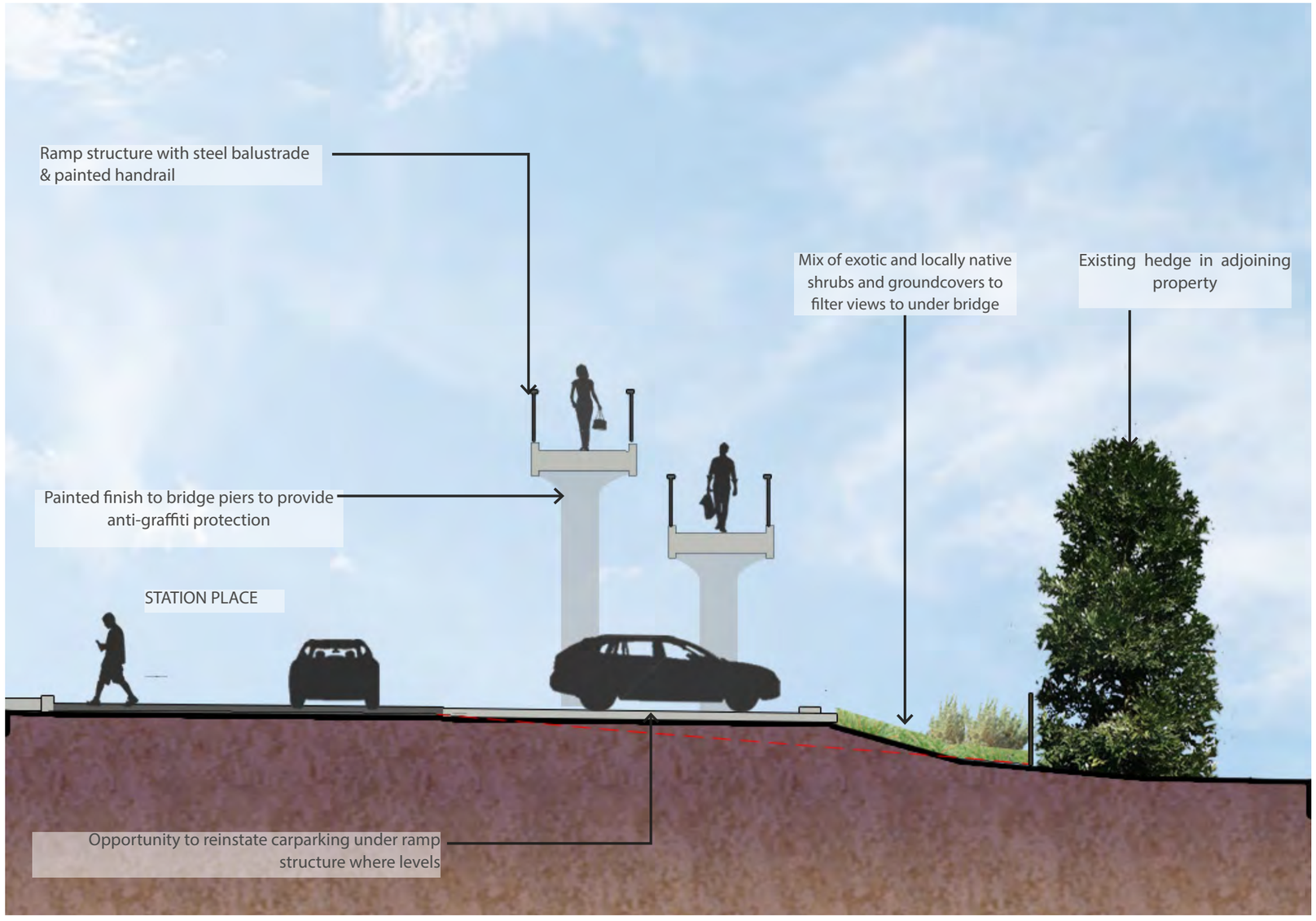
CONSTRUCTION IMPACT ZONE




Scale 1:250 @ A3

0 5 10m

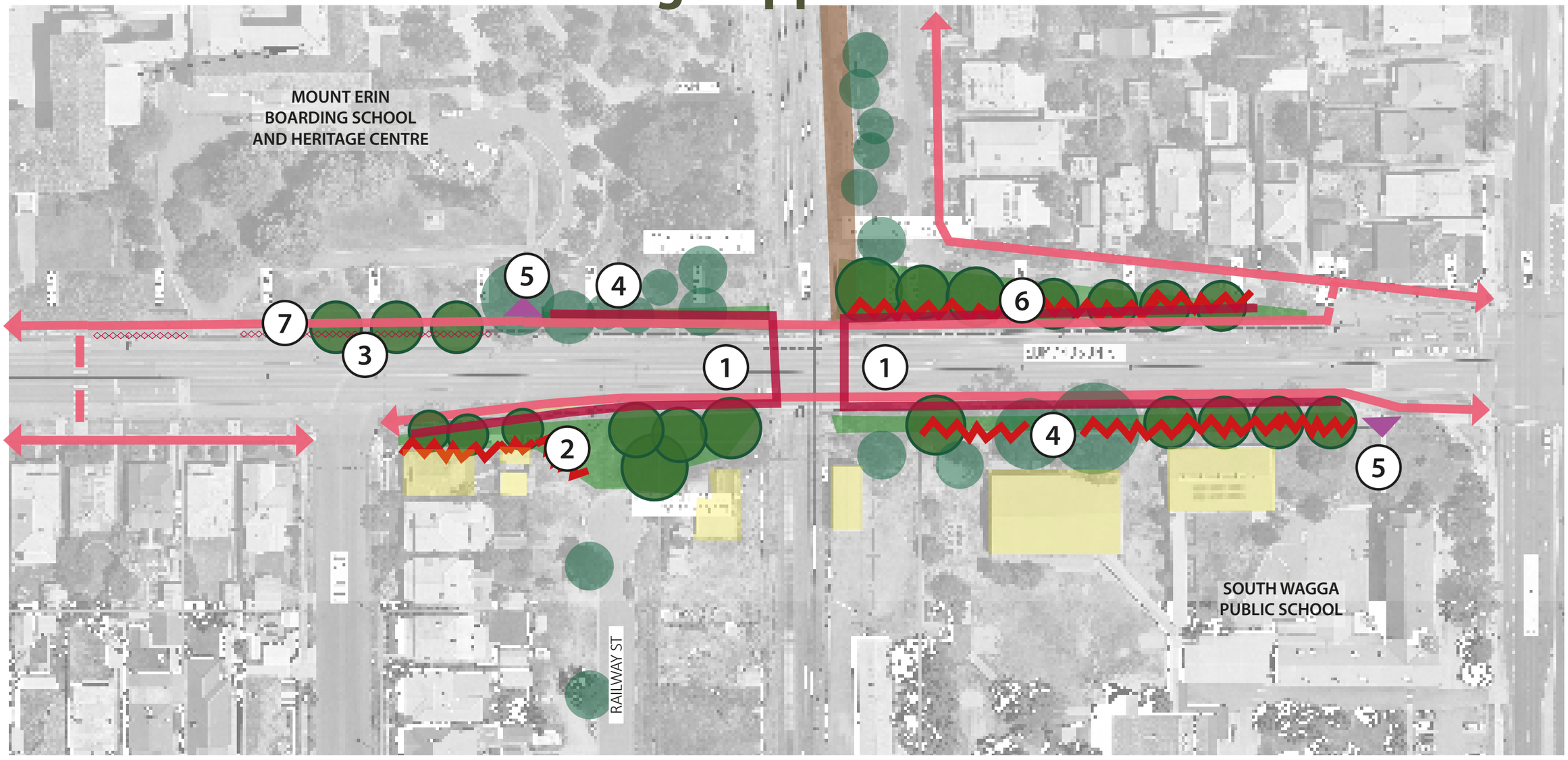
# Railway Street Ramp Section D




Scale 1:100 @ A3

0 1 2 5m

# 05. Edmondson Street Bridge Opportunities & Constraints




## LANDSCAPE OPPORTUNITIES & CONSTRAINTS

1. Opportunity for painted (anti-grafitti treatment) to new retaining wall panels.
2. Opportunity for new screen planting to filter views from Railway Street, and to provide privacy to adjoining residences. Planting to avoid creating places of concealment (CPTED) and meet WWCC streetscape requirements.
3. Opportunity for street trees to shade Edmondson Street footpath in accordance with WSC Street Tree Strategy.
4. Opportunity to retain existing trees by mitigating impact of retaining wall construction.
5. Maintain pedestrian access to Wagga South Public School and Mount Erin Boarding School and Heritage Centre.
6. Reinstate shade trees and screen planting to filter views to the wall from adjacent residences. Consider mounding gardens at 1:4 to reduce visible extent of wall.
7. Reinstate footpath on western side of Edmondson Street to School entry. Fencing to be provided to direct pedestrians to the pedestrian crossing.

Not to scale

RETAINING WALL WITH URBAN DESIGN / ANTI-GRAFITTI TREATMENT

FOOTPATH CONNECTION

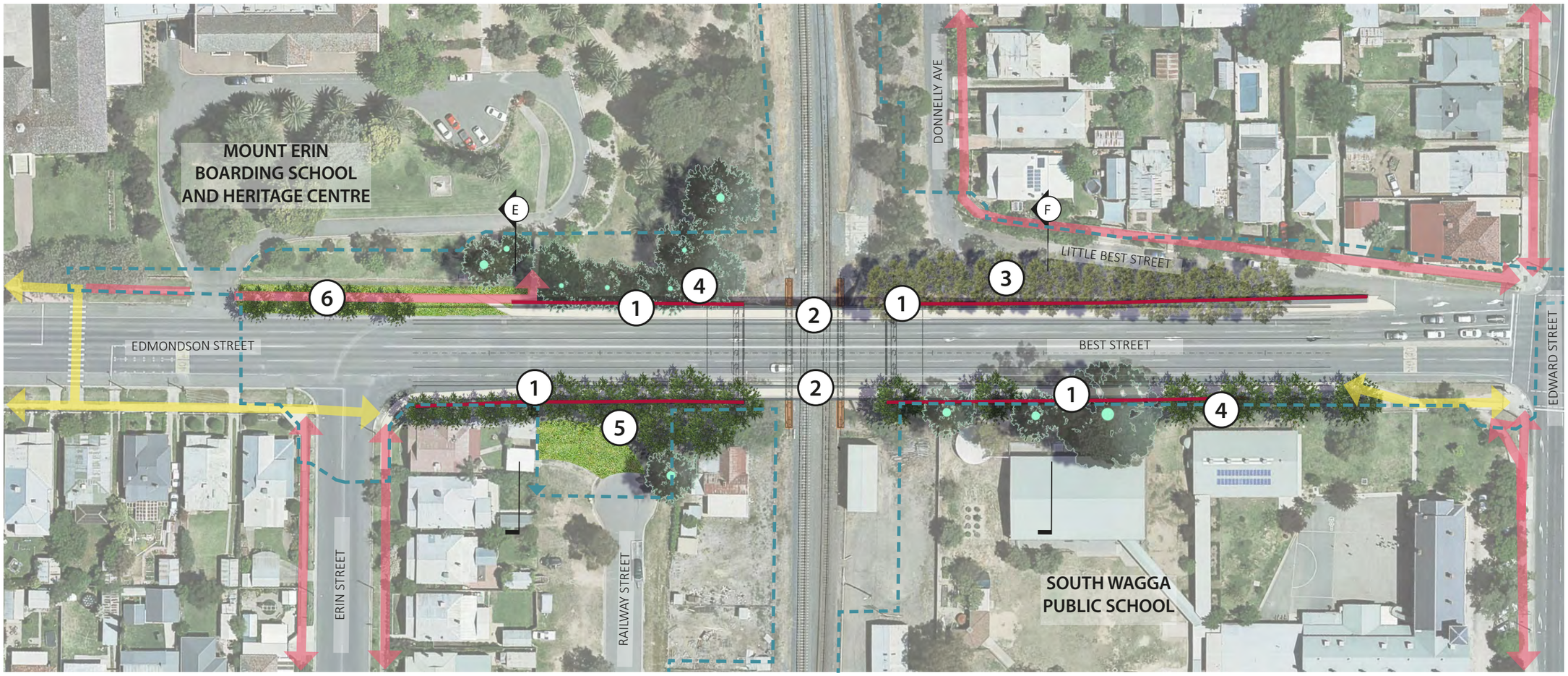
PEDESTRIAN FENCING

SCREEN / FILTER VIEWS (INTERNAL, EXTERNAL)

PROPOSED TREE PLANTING

EXISTING TREES

# Edmondson Street Bridge Landscape Masterplan




**LEGEND**

1. Painted finish to new precast concrete retaining wall panels. Colour to be sympathetic to the heritage character – "rust red" or similar
2. New footpath with steel balustrade and protection screens over railway lines
3. Reinstate ornamental shade trees with a mix of ornamental shrub & ground covers in mounded gardens under to filter views to retaining wall
4. Reinstate native shade trees with a mix of locally native shrubs & ground covers in mounded gardens under to filter views to retaining wall
5. Reinstate small ornamental shade trees with a mix of ornamental shrub & ground covers to batter slope to filter views to retaining wall. Select species to maintain sightlines for passive surveillance (CPTED) and avoid creating place of concealment alongside adjoining residence.

   Planting area shall allow for access to the structure for inspection & maintenance
6. New street tree planting to shade footpath access to school
7. New pedestrian crossing

DEFLECTION WALLS

CONSTRUCTION IMPACT ZONE

NEW RETAINING WALL

EXISTING FOOTPATH

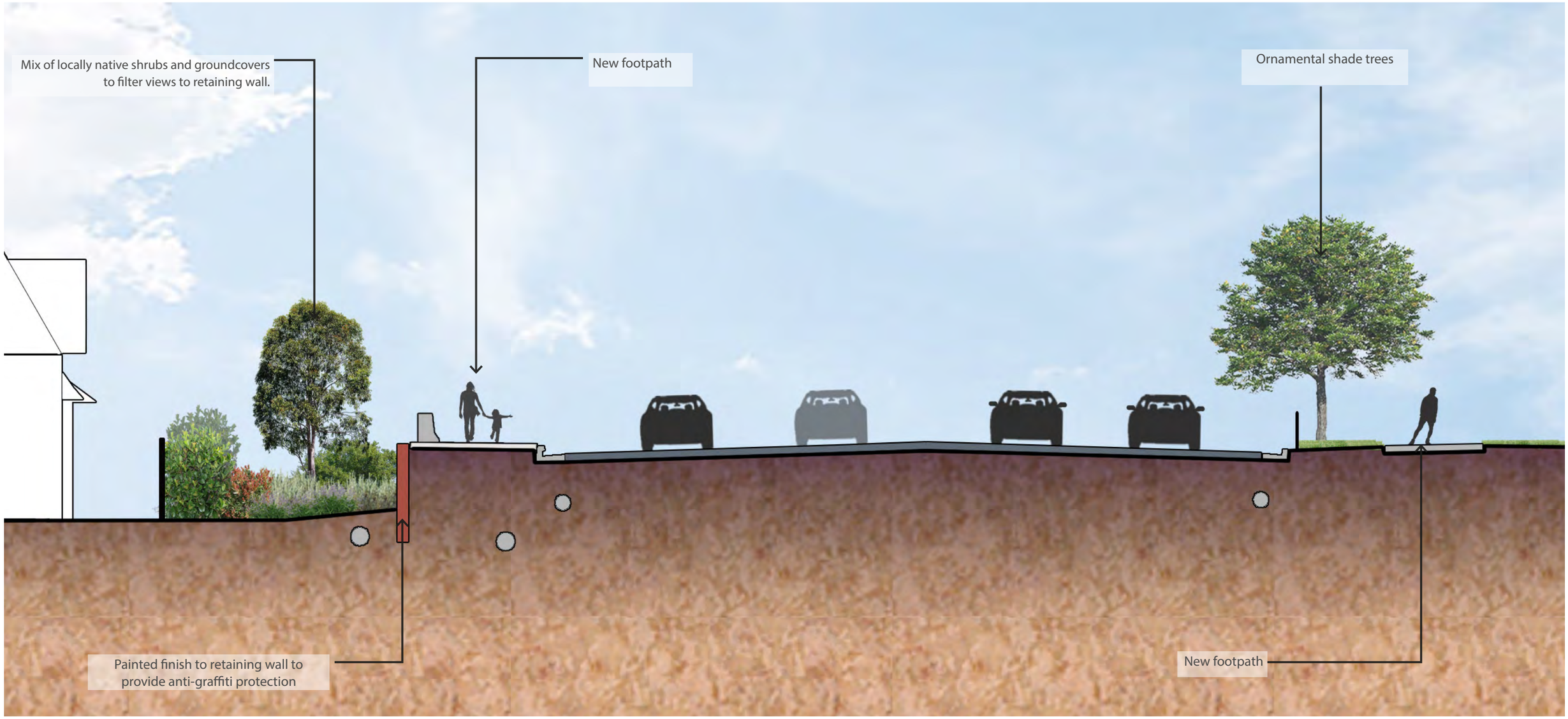
CITY CENTRE TO BOTANIC GARDENS WALKING TRAIL

Source: Wagga City Council Active Travel Plan & Wagga Wagga + Surrounds Trail Map

Scale 1:1000 @ A3

0 10 20 50m 100m

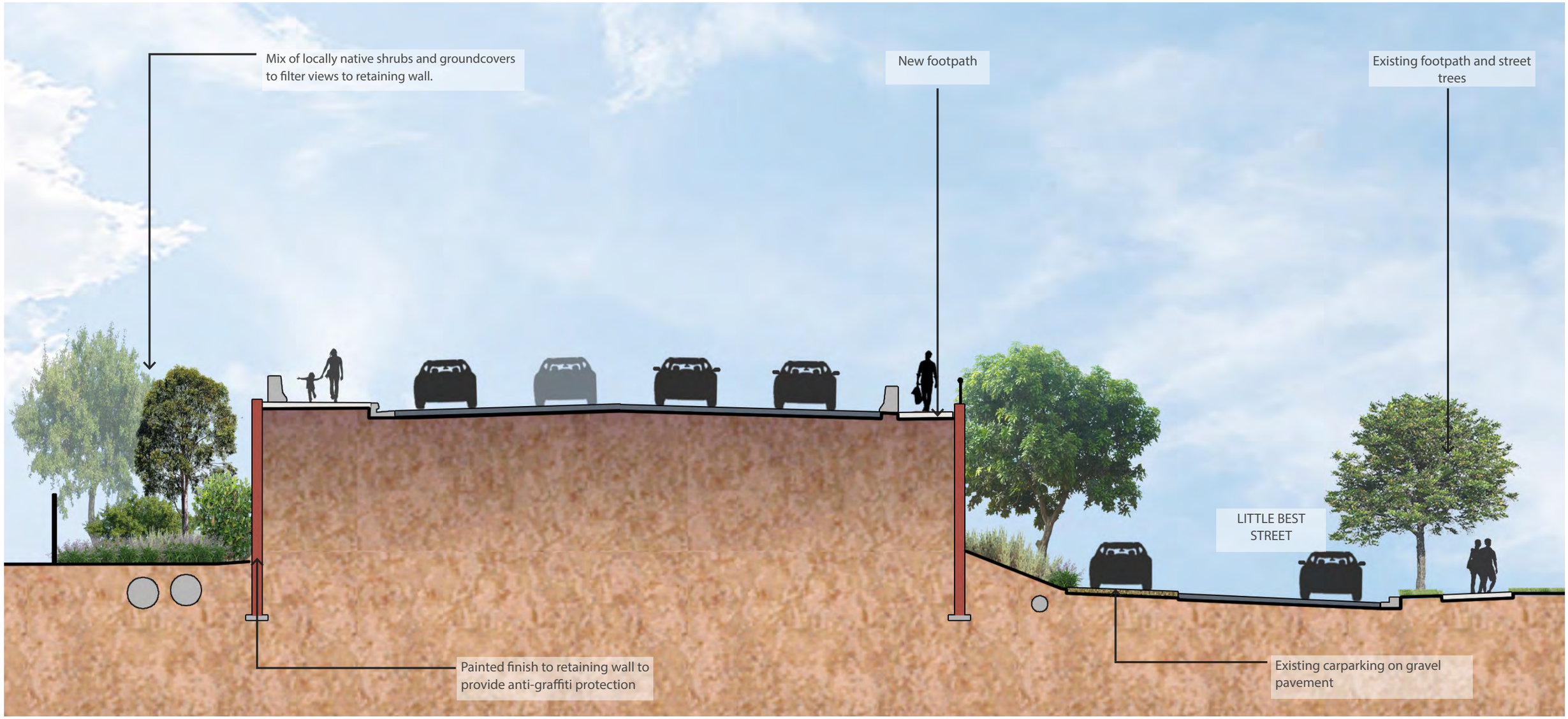
# Edmondson Street Bridge Section E




Scale 1:100 @ A3

0 1 2 5m

# Edmondson Street Bridge Section F

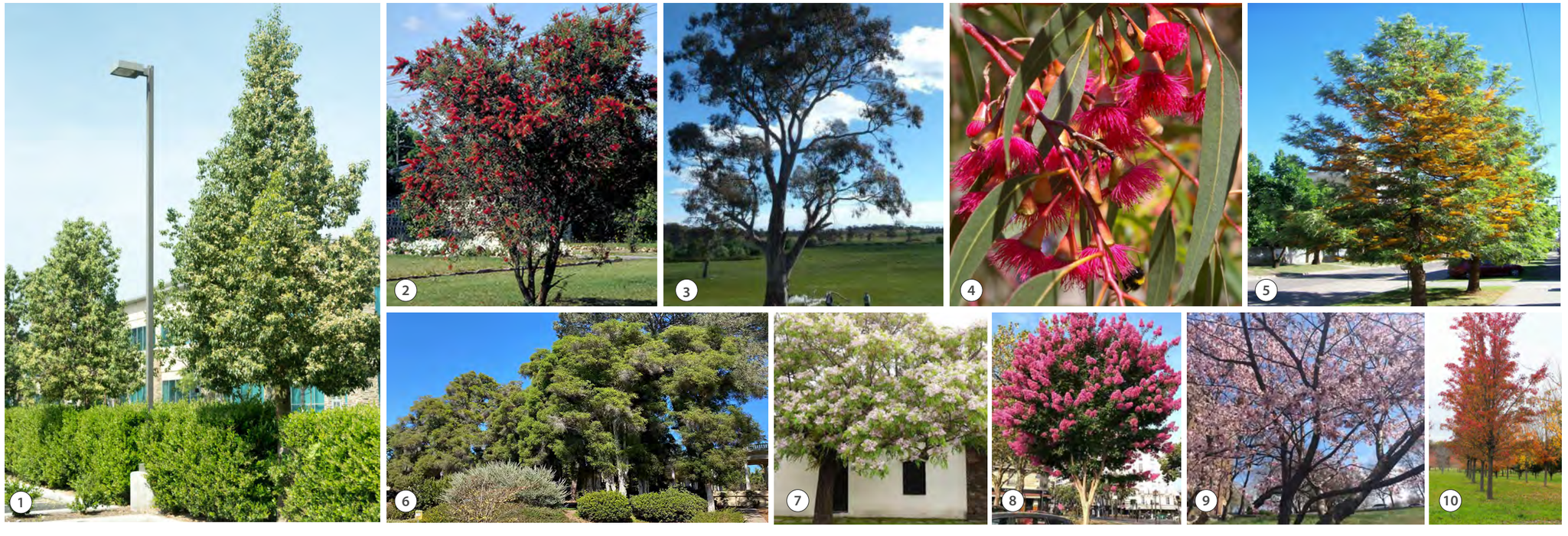



Scale 1:100 @ A3

0 1 2 5m

# 05. Planting Palette

| | TREES | | | | | | | LOCATION | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | BOTANICAL NAME | COMMON NAME | NATIVE | EXOTIC | MATURE HEIGHT | MATURE WIDTH | CASSIDY PARADE | WAGGA WAGGA STATION | RAILWAY STREET | EDMONDSON STREET | BEST STREET | LITTLE BEST STREET |
| 1 | Brachychiton populneus | Kurrajong | N | | 10-15m | 10-20m | √ | | √ | √ | | √ |
| 2 | Callistemon viminalis | Weeping Bottlebrush | N | | 5-7m | 5-7m | √ | | √ | | | √ |
| 3 | Eucalyptus blakelyi | Blakely's Red Gum | N | | 15-20m | 10-20m | √ | | √ | √ | | √ |
| 4 | Eucalyptus leucoxylon | White Ironbark | N | | 15-20m | 10-20m | √ | | √ | √ | | √ |
| 5 | Grevillea robusta | Silky Oak | N | | 15-20m | 10-20m | √ | | √ | | | √ |
| 6 | Melaleuca styphelioides | Prickly Paperbark | N | | 10-20m | 10-20m | √ | | | | | |
| 7 | Melia azedarach 'Elite' | White Cedar (low fruiting variety) | N | | 6-10m | 8-10m | √ | | √ | | | √ |
| 8 | Lagerstroemia indica | Crepe Myrtle | | E | 6-8m | 4-6m | | | √ | | | |
| 9 | Prunus spp | Ornamental Plum | | E | vary | vary | | | | √ | | |
| 10 | Pyrus calleryana 'Aristocrat' | Aristocrat Pear | | E | 9-11m | 5-7m | | | | √ | | |




* Note: All trees have been taken from the Wagga Wagga City Council landscape Guidelines.
Minimum pot size to be 100 litre

# Planting Palette

| | SHRUBS > 1M | | | | | | LOCATION | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | BOTANICAL NAME | COMMON NAME | NATIVE | EXOTIC | MATURE HEIGHT | MATURE WIDTH | CASSIDY PARADE | WAGGA WAGGA STATION | RAILWAY STREET | EDMONDSON STREET | BEST STREET | LITTLE BEST STREET |
| 11 | Atriplex spp | Saltbush | N | | 2-3m | 2-4m | √ | √ | √ | √ | | |
| 12 | Banksia spp | Banksia | N | | 3-5m | 2-4m | √ | √ | √ | √ | | |
| 13 | Callistemon spp | Bottlebrush | N | | 2-4m | 1-2m | √ | √ | √ | √ | | √ |
| 14 | Eremophila spp | Dogwood | N | | 3-5m | 2-4m | √ | √ | √ | √ | | √ |
| 15 | Grevillea spp | Grevillea | N | | vary | vary | √ | √ | √ | √ | | √ |
| 16 | Kunzea baxteri | Scarlet Kunzea | N | | 2-3m | 2-3m | √ | √ | √ | √ | | |
| 17 | Leptospermum spp | Tea-tree | N | | vary | vary | √ | √ | √ | √ | | |
| 18 | Photinia × fraseri 'Red Robin' | Red robin Photinia | | E | 2-4m | 2-4m | | | | | | √ |
| 19 | Viburnum odoratissimum | Sweet Viburnum | | E | 3-4m | 3-5m | | | | | | √ |
| | **SHRUBS < 1M** | | | | | | | | | | | |
| 20 | Agapanthas africanus | Agapanthus | | E | 0.5m-1m | 0.5m-1m | | | | | | √ |
| 21 | Dietes bicolor | Peacock Iris | | E | 1m | 1m | | | | | | √ |


* Note:  All shrubs have been taken from the Wagga Wagga City Council landscape Guidelines.

Minimum pot size to be 200mm. Minimum planting density for screen planting to be double staggered row at 500mm centres. Elsewhere, minimum planting density to be 1/m2

# Planting Palette

| | GROUNDCOVERS | | | | | | LOCATION | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | BOTANICAL NAME | COMMON NAME | NATIVE | EXOTIC | MATURE HEIGHT | MATURE WIDTH | CASSIDY PARADE | WAGGA WAGGA STATION | RAILWAY STREET | EDMONDSON STREET | BEST STREET | LITTLE BEST STREET |
| 22 | Atriplex semibaccata | Australian Saltbush | N | | 0.2m | 1-2m | √ | √ | √ | √ | | |
| 23 | Grevilea 'Mt Tamboritha' | Mt Tamboritha Grevillea | N | | 0.3m | 1-2m | | | | | | |
| 24 | Grevillea × gaudichaudii | Prostrate Grevillea | N | | 0.5m | 2-3m | | | | | | |
| 25 | Grevillea juniperina | uniper Grevillea | N | | 0.3-2m | 0.5-2m | | | | | | |
| 26 | Grevillea rosmarinifolia | Rosemary Grevillea | N | | 0.3-2m | 0.5-2m | | | | | | |
| | **GRASSES** | | | | | | | | | | | |
| 27 | Dianella cultivars | | N | | Vary | Vary | √ | √ | √ | √ | | |
| 28 | Lomandra longifolia | Lomandra | N | | 1-2m | 1-2m | √ | √ | √ | √ | | √ |
| 29 | Lomandra 'Tanika' | Tanika Lomandra | N | | 0.5-1m | 0.3-0.6m | √ | √ | √ | √ | | |
| 30 | Poa labillardieri | Tussock Grass | N | | 0.5-1m | 0.5-1m | √ | √ | √ | √ | | |
| 31 | Liriope 'Evergreen Giant' | Evergreen Giant Liriope | | E | 0.4-0.6m | 0.2-0.4m | | | | | | √ |


* Note:  All groundcovers have been taken from the Wagga Wagga City Council landscape Guidelines.
Minimum pot size for ornamental / amenity to be 140mm. Minimum pot size for revegetation to be tubestock. Minimum planting density  to be 3/m2

TECHNICAL PAPER

10

Landscape and visual impact assessment

# **Appendix C** Kemp Street landscape and urban design concept report

**ALBURY TO ILLABO** ENVIRONMENTAL IMPACT STATEMENT

# INLAND RAIL

## Albury to Illabo

### KEMP STREET, JUNEE

### LANDSCAPE & URBAN DESIGN CONCEPT REPORT

**20 September 2021**

Revision: A

Prepared by: cusp iris

Prepared for: WSP ARTC

**Document Control Sheet**

| | |
|---|---|
| Project | Albury to Illabo, Kemp Street, Junee |
| Report Title: | Landscape and Urban Design Concept Report |
| Revision / Version: | Issue Rev A |
| Approved by: | Philip Kleinschmidt |
| File Location: | Z:\Synergy\Projects\20\20094 Inland Rail - A21 & S2P\03 Working\02 InDesign |

| Revision | Date | Approved |
|---|---|---|
| Rev A | 20.09.2021 | PK |



# Contents

# 01. Landscape & Urban Design Statement

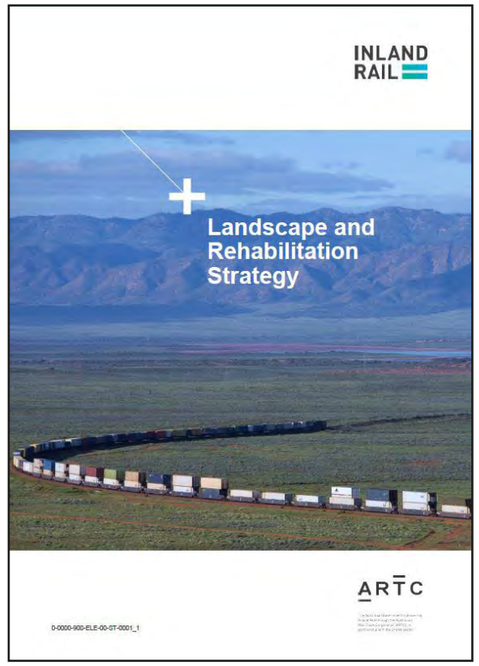
The Landscape and Urban Design Concept Design for Inland Rail Albury to Illabo – Kemp Street, Junee - has been developed to sensitively integrate this new piece of infrastructure within the urban setting.

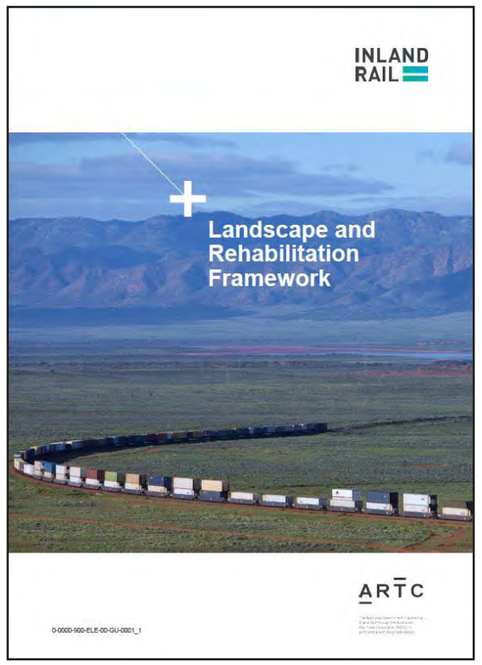
The concepts will employ a suite of strategies including:

- **selection of materials and forms that are sympathetic to the heritage qualities**
- **a focus on integrating good urban design into the structural design of bridges;**
- **maximising local connectivity and permeability wherever possible;**
- **enhancing the natural qualities of the urban environment through provision of shade, screening and amenity planting wherever possible;**
- **implementing CPTED design principles with a focus on activation and passive surveillance; and**
- **minimising ongoing maintenance through the selection of robust materials and fast establishing soft landscape areas that stabilise disturbed areas.**

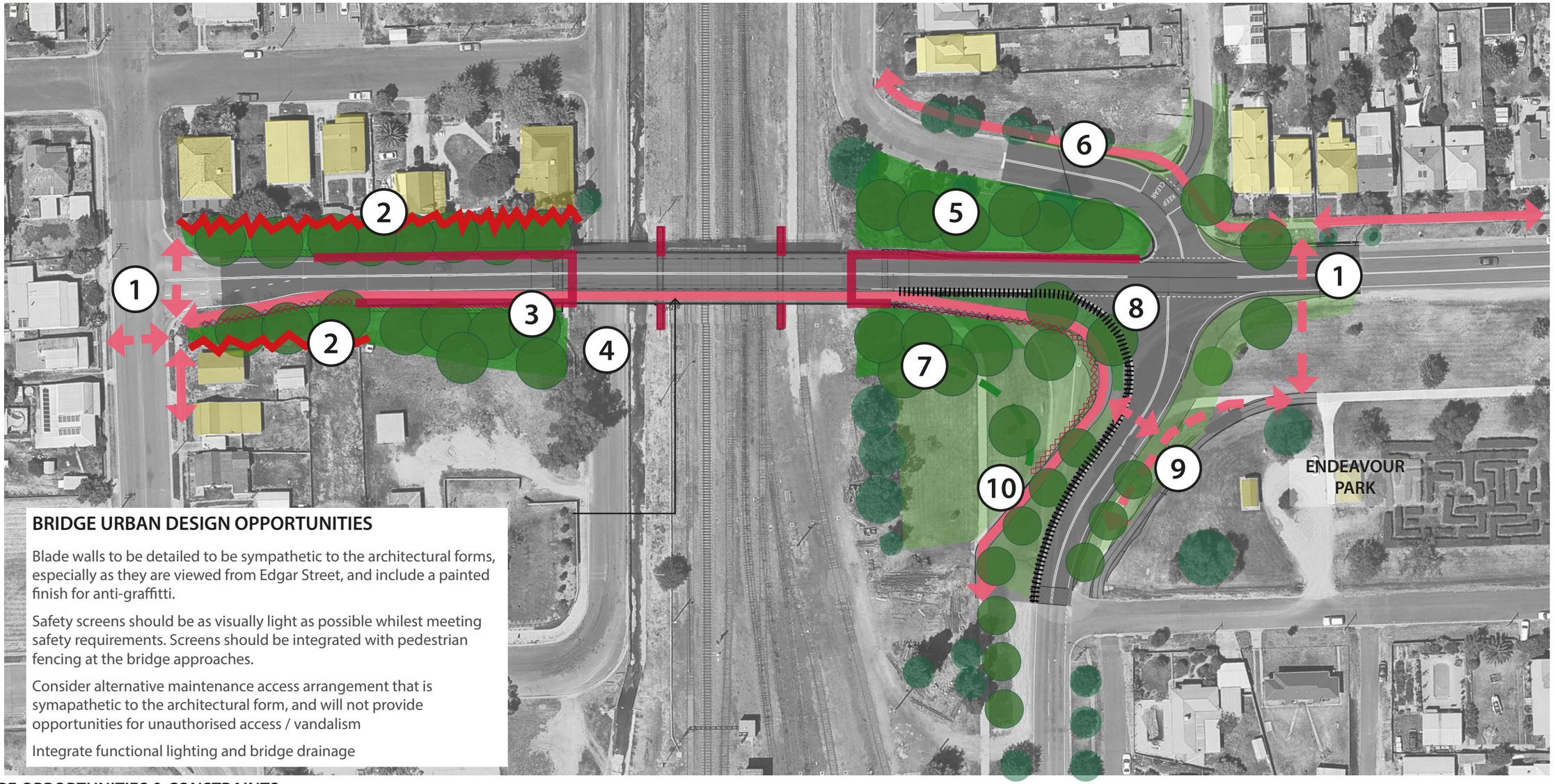
The landscape & urban design concepts have been developed to respond to the requirements of relevant Inland Rail landscape and rehabilitation design guidelines, as well as the RMS 'Beyond the Pavement'.

Future detailed design will be developed in accordance with the full list of Australian Standards and NSW Government design guidelines listed in the Inland Rail Landscape and Rehabilitation Framework.




# 02. Kemp Street Bridge, Junee Opportunities & Constraints




## BRIDGE URBAN DESIGN OPPORTUNITIES

Blade walls to be detailed to be sympathetic to the architectural forms, especially as they are viewed from Edgar Street, and include a painted finish for anti-graffitti.

Safety screens should be as visually light as possible whilest meeting safety requirements. Screens should be integrated with pedestrian fencing at the bridge approaches.

Consider alternative maintenance access arrangement that is symapathetic to the architectural form, and will not provide opportunities for unauthorised access / vandalism

Integrate functional lighting and bridge drainage

## LANDSCAPE OPPORTUNITIES & CONSTRAINTS

1. Provide safe crossing points to tie shared path into the surrounding footpath network and respond to local desire lines
2. Reinstate shade trees and screen planting to filter views from Kemp Street, and to provide privacy to adjoining residences. Planting to avoid creating places of concealment (CPTED) and meet local authority streetscape requirements
3. Opportunity for quality architectural & anti-graffiti treatment to new retaining wall panels. Concider brick detailing to respond to existing bridge character.

   Close existing non-DDA compliant stair to Edgar Street.
4. Opportunity for new stair.
5. Reinstate trees and provide screen planting to filter views from Railway Parade. Planting to avoid creating places of concealment (CPTED) and meet local authority streetscape requirements
6. Opportunities for new footpath to southern side of Railway Parade to encourage pedestrians to safe crossing at Kemp Street.
7. Reinstate trees and provide screen planting to filter views from Olympic Highway (Seignoir Street) & Endeavour Park. Utilise shallow gradients to the side of the new shared path to tie smoothly into existing slope and allow maintenance of trees in grass the provides clear sightlines for CPTED.
8. Utilise shallow gradients between the kerb and new shared path. If a traffic barrier is required, it should be open type that allows for passive surveillance of the path from surrounding streets and open spaces
9. Realign existing footpath within Endeavour Park. Provide a safe crossing point to connect the new shared path to Endeavour Park and Kemp Street east.
10. Opportunity for new shade tree planting to Olympic Highway (Seignoir Street) to extend the formal avenue commencing at Pretoria Avenue

- RETAINING WALL WITH URBAN DESIGN / ANTI-GRAFITTI TREATMENT
- FOOTPATH CONNECTION
- PEDESTRIAN FENCING
- SCREEN / FILTER VIEWS (INTERNAL, EXTERNAL)
- EXISTING TREES
- PROPOSED TREES

Scale 1:500 @ A3

0 5 10 25m

# Kemp Street Bridge, Junee Landscape Masterplan


**LEGEND**

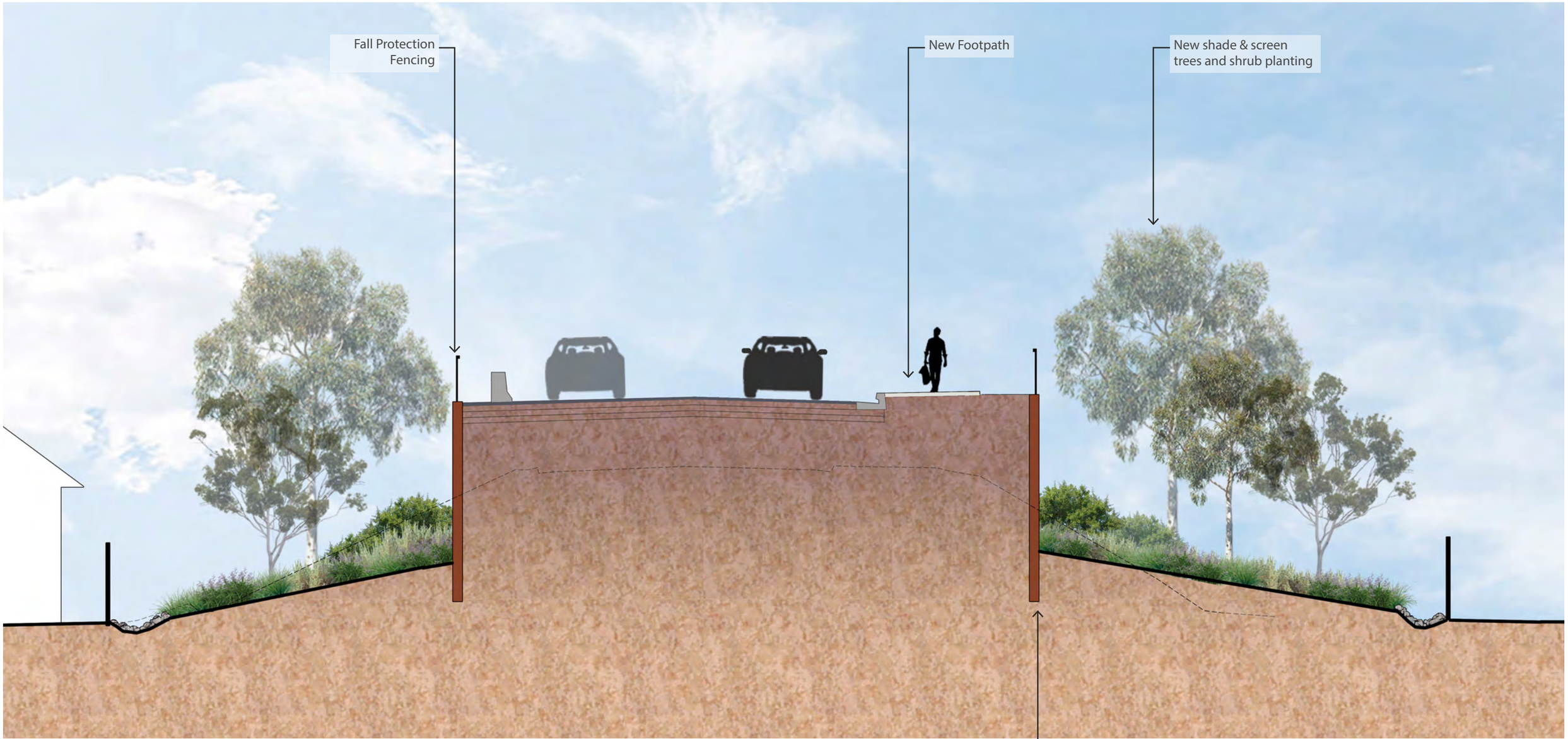
1. Painted finish to new precast concrete retaining wall panels. Colour to be sympathetic to the heritage character - "rust red" or similar
2. New footpath with protection screen over railway lines
3. Reinstate native shade and screening trees with a mix of locally native shrubs & ground covers under to filter views to retaining wall
4. Reinstate native shade trees with a mix of locally native shrubs & ground covers. Select species to maintain sight lines for passive surveillance (CPTED)
5. New footpath connection with shade tree planting to local authority streetscape requirements
6. Existing street furniture retained/ reinstated.

- CONSTRUCTION IMPACT ZONE
- EXISTING FOOTPATH
- NEW RETAINIG WALL

Scale 1:500 @ A3

0 5 10 25m

# Section A



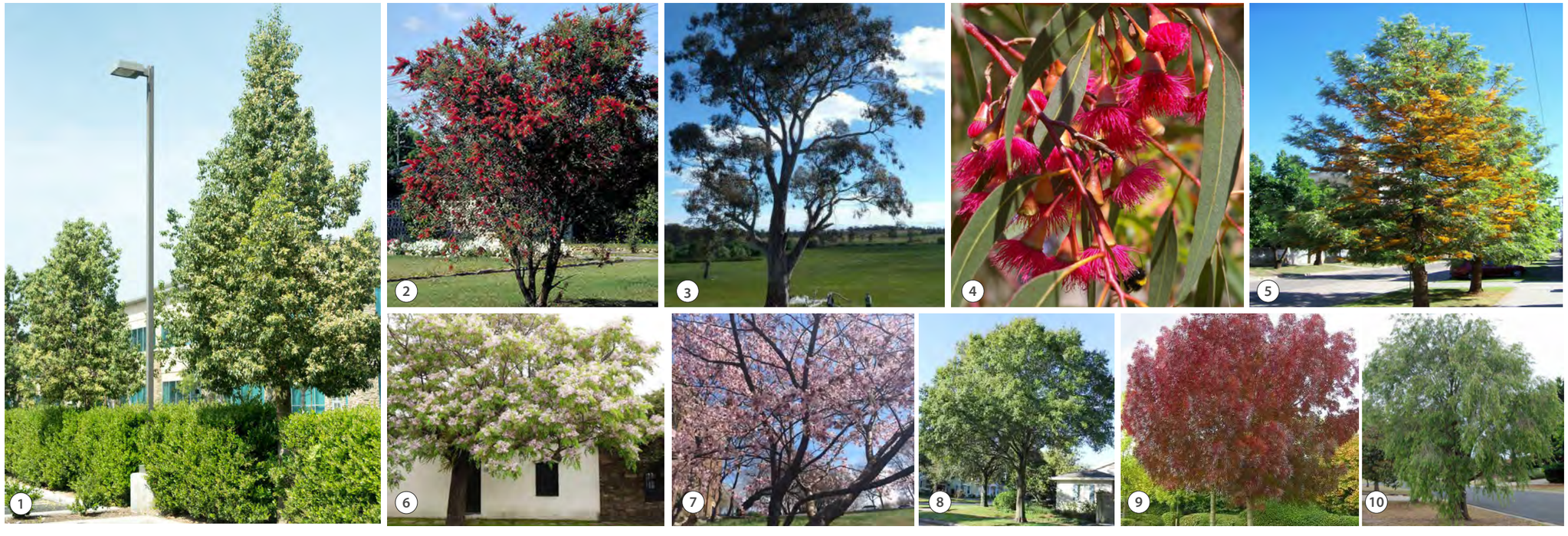

Scale 1:250 @ A3 0 5 10m

# Section B


Scale 1:250 @ A3 0 5 10m

# 05. Planting Palette

| | TREES | | | | | | LOCATION | |
|---|---|---|---|---|---|---|---|---|
| | BOTANICAL NAME | COMMON NAME | NATIVE | EXOTIC | MATURE HEIGHT | MATURE WIDTH | KEMP STREET EAST | KEMP STREET WEST |
| 1 | Brachychiton populneus | Kurrajong | N | | 10-15m | 10-20m | √ | |
| 2 | Callistemon viminalis | Weeping Bottlebrush | N | | 5-7m | 5-7m | √ | |
| 3 | Eucalyptus blakelyi | Blakely's Red Gum | N | | 15-20m | 10-20m | √ | √ |
| 4 | Eucalyptus leucoxylon | White Ironbark | N | | 15-20m | 10-20m | √ | √ |
| 5 | Grevillea robusta | Silky Oak | N | | 15-20m | 10-20m | √ | √ |
| 6 | Melia azedarach 'Elite' | White Cedar (low fruiting variety) | N | | 6-10m | 8-10m | √ | |
| 7 | Prunus spp | Ornamental Plum | | E | vary | vary | √ | √ |
| 8 | Quercus spp | Oak | | E | vary | vary | | √ |
| 9 | Fraxinus oxycarpa | Desert Ash | | E | 10-18m | 8m | | √ |
| 10 | Agonis flexuosa | Willow Myrtle | N | | 6-9m | 6-9m | | √ |




* Note:

Minimum pot size to be 100 litre

# Planting Palette

| | SHRUBS > 1M | | | | | | LOCATION | |
|---|---|---|---|---|---|---|---|---|
| | BOTANICAL NAME | COMMON NAME | NATIVE | EXOTIC | MATURE HEIGHT | MATURE WIDTH | KEMP STREET EAST | KEMP STREET WEST |
| 11 | Atriplex spp | Saltbush | N | | 2-3m | 2-4m | √ | √ |
| 12 | Banksia spp | Banksia | N | | 3-5m | 2-4m | √ | √ |
| 13 | Callistemon spp | Bottlebrush | N | | 2-4m | 1-2m | √ | √ |
| 14 | Eremophila spp | Dogwood | N | | 3-5m | 2-4m | √ | √ |
| 15 | Grevillea spp | Grevillea | N | | vary | vary | √ | √ |
| 16 | Kunzea baxteri | Scarlet Kunzea | N | | 2-3m | 2-3m | √ | √ |
| 17 | Leptospermum spp | Tea-tree | N | | vary | vary | √ | √ |
| 18 | Photinia × fraseri 'Red Robin' | Red robin Photinia | | E | 2-4m | 2-4m | √ | |
| 19 | Viburnum odoratissimum | Sweet Viburnum | | E | 3-4m | 3-5m | √ | |
| | | | | | | | | |
| | **SHRUBS < 1M** | | | | | | | |
| 20 | Agapanthas africanus | Agapanthus | | E | 0.5m-1m | 0.5m-1m | √ | |
| 21 | Dietes bicolor | Peacock Iris | | E | 1m | 1m | √ | |


* Note:

Minimum pot size to be 200mm. Minimum planting density for screen planting to be double staggered row at 500mm centres. Elsewhere, minimum planting density to be 2/m2

# Planting Palette

| | GROUNDCOVERS | | | | | | LOCATION | |
|---|---|---|---|---|---|---|---|---|
| | BOTANICAL NAME | COMMON NAME | NATIVE | EXOTIC | MATURE HEIGHT | MATURE WIDTH | KEMP STREET EAST | KEMP STREET WEST |
| 22 | Atriplex semibaccata | Australian Saltbush | N | | 0.2m | 1-2m | √ | √ |
| 23 | Grevilea 'Mt Tamboritha' | Mt Tamboritha Grevillea | N | | 0.3m | 1-2m | √ | √ |
| 24 | Grevillea × gaudichaudii | Prostrate Grevillea | N | | 0.5m | 2-3m | √ | √ |
| 25 | Grevillea juniperina | Juniper Grevillea | N | | 0.3-2m | 0.5-2m | √ | √ |
| 26 | Grevillea rosmarinifolia | Rosemary Grevillea | N | | 0.3-2m | 0.5-2m | √ | √ |
| | | | | | | | | |
| | **GRASSES** | | | | | | | |
| 27 | Dianella cultivars | | N | | Vary | Vary | √ | √ |
| 28 | Lomandra longifolia | Lomandra | N | | 1-2m | 1-2m | √ | √ |
| 29 | Lomandra 'Tanika' | Tanika Lomandra | N | | 0.5-1m | 0.3-0.6m | √ | √ |
| 30 | Poa labillardieri | Tussock Grass | N | | 0.5-1m | 0.5-1m | √ | √ |
| 31 | Liriope 'Evergreen Giant' | Evergreen Giant Liriope | | E | 0.4-0.6m | 0.2-0.4m | √ | √ |


* Note:

Minimum pot size for ornamental / amenity to be 140mm. Minimum pot size for revegetation to be tubestock. Minimum planting density to be 3/m2

# Albury to Illabo

## KEMP STREET, JUNEE

## LANDSCAPE & URBAN DESIGN CONCEPT REPORT

**20 September 2021**

Revision: A