

# CHAPTER 03

## Location and setting

ALBURY TO ILLABO ENVIRONMENTAL IMPACT STATEMENT

ARTC

INLAND  
RAIL  
An Australian Government Initiative

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## 3. Location and setting

This chapter describes the Albury to Illabo (A2I) section of the Inland Rail program (the proposal) site and its setting, including a summary of its general biophysical and socio-economic (including community, land use, economics and cultural values) environment. Further information on the existing environment as it relates to the environmental issues assessed in the EIS is in Chapters 9 to 26.

### 3.1 Regional context

The proposal is located in south-western NSW in the Riverina Murray region. The Riverina Murray region stretches 500 kilometres (km) east to west across south western NSW along the border with Victoria, covering an area of almost 114,373 square km (km<sup>2</sup>). The region includes 20 Local Government Areas (LGA) and is home to a population of approximately 272,570 people (DPIE, 2017b). Major population and service centres in the Riverina include the regional cities of Wagga Wagga, Albury and Griffith.

#### 3.1.1 Albury to Illabo rail corridor

The Albury to Illabo corridor is made up of approximately 185 km of existing rail stretching between Albury on Victoria–NSW border to just north-east of the town of Illabo in the south western region of NSW. The proposal site is within five LGAs: Albury, Great Hume, Lockhart, Wagga Wagga and Junee. The land impacted by the proposal is predominantly existing rail corridor.

Albury is major regional centre that lies on the border of NSW and Victoria. The town is located on the Hume Highway and neighbours Wodonga on the Victorian side of the border. Wagga Wagga is another major regional centre along the rail corridor which lies on the Sturt Highway, 150 km west of Canberra, ACT.

Illabo is a small town located at the northern extent of the proposal, 16 km north-east of Junee and 32 km south-west of Cootamundra. The town is located on the Olympic Highway between Junee and Bethungra. The rail corridor also runs through the small towns of Gerogery, Culcairn, Henty, Yerong Creek, The Rock, Uranquinty and Junee.

#### 3.1.2 Existing rail facilities and operations

The existing rail corridor between Albury and Illabo is part of the Main South Line, which runs from Albury, in a north-east direction, through Illabo to Cootamundra, where it continues to Goulburn, Mittagong and Sydney. The Main South Line carries freight and passenger trains between Albury and Sydney. The NSW railway network is a significant feature of the history and culture in the region. Between 1877 and 1881 the Main South Line was extended 290 km from Goulburn to Albury.

This line has dual non-electrified tracks along the Mittagong to Junee section, after which it becomes a single track to Albury. ARTC has a lease for the line south of Macarthur until 2064. The Main South Line continues north-east from Illabo through the Bethungra Spiral to Cootamundra and continues to Sydney.

#### Branches

Two operating freight lines connect to the Albury to Illabo section of rail as shown in Figure 3-1. The Junee to Griffith Freight line connects to the Main South Line at Junee Station and The Rock to Boree Creek grain rail line connects to the Main South Line at The Rock Station.

#### Rail infrastructure

The Main South Line between Albury and Illabo is generally single-track, standard-gauge, non-electrified track with a short section of dual track north of Junee. The track arrangement consists of steel rails supported by concrete sleepers on ballast.

The primary track is referred to as the main line within sections of the rail corridor with single track. The section of the rail corridor with dual tracks has an up line and a down line. The up line is the track on which trains travel towards Sydney's Central Station and the down line refers to the track on which trains travel away from Sydney's Central Station.

The rail corridor also has loop lines and sidings. Loop lines are tracks that briefly leave and re-join the main line. They provide a secondary line that allows for trains to safely pass each other or it provides access to intermediary locations along the route, such as stations. Sidings are short sections of track off the main line, which can be used as temporary locations to park trains or access to loading or storage structures such as grain silos.

There are six operating passenger stations located along this section of the Main South Line:

- ▶ Albury
- ▶ Culcairn
- ▶ Henty
- ▶ The Rock
- ▶ Wagga Wagga
- ▶ Junee.

These stations are state heritage listed.

There are several stations along this section of corridor that have been closed (refer to Figure 3-1).

Intermodal terminals facilitate the transfer of freight between rail and road. Intermodal terminals that connect to this section of the rail corridor include:

- ▶ Ettamogah Rail Hub, located 10 km north of Albury, has rail sidings with direct access to the Main South Line and the Hume Freeway
- ▶ Riverina Intermodal Freight and Logistics (RIFL) Hub in the Bomen Industrial Precinct northeast of Wagga Wagga is currently under construction and expected to be completed in mid-2022
- ▶ Harefield Intermodal Terminal is located in Harefield between Wagga Wagga and Junee
- ▶ privately owned grain terminals located at several points along the rail corridor to facilitate loading of grain and agricultural products to freight trains.

## Operations

The Main South Line is in operation 24-hours a day seven days a week. Grain and goods freight trains operate on an as-needs basis along the corridor. Freight trains can be up to 1,800 metres (m) long.

As of 2020, the average freight train movements (both directions) between Albury and Junee was eight per day with an increased average of 12 freight train movements per day between Junee and Illabo. Freight train movements increase between Junee and Illabo as the Junee to Griffith Freight line connects to the Main South Line at Junee Station.

Passenger train services also operate along the corridor. NSW TrainLink operates two passenger services a day in each direction between Sydney and Melbourne along the Main South line. V/Line operates six passenger services a day in each direction between Melbourne and Albury.

Train shunting is the safe movement of a train or part of train for purposes other than a through movement. Train shunting generally occurs within rail yards for the purpose of rearranging trains or part of train. Train shunting along the Main South Line primarily occurs in intermodal terminals and rail yards such as Albury Yard, Wagga Wagga Yard and Junee Yard.

Maintenance works are undertaken by ARTC in accordance with existing ARTC procedures and processes, and relevant state legislative requirements.



## 3.2 The proposal site and surrounds

### 3.2.1 Proposal site definition

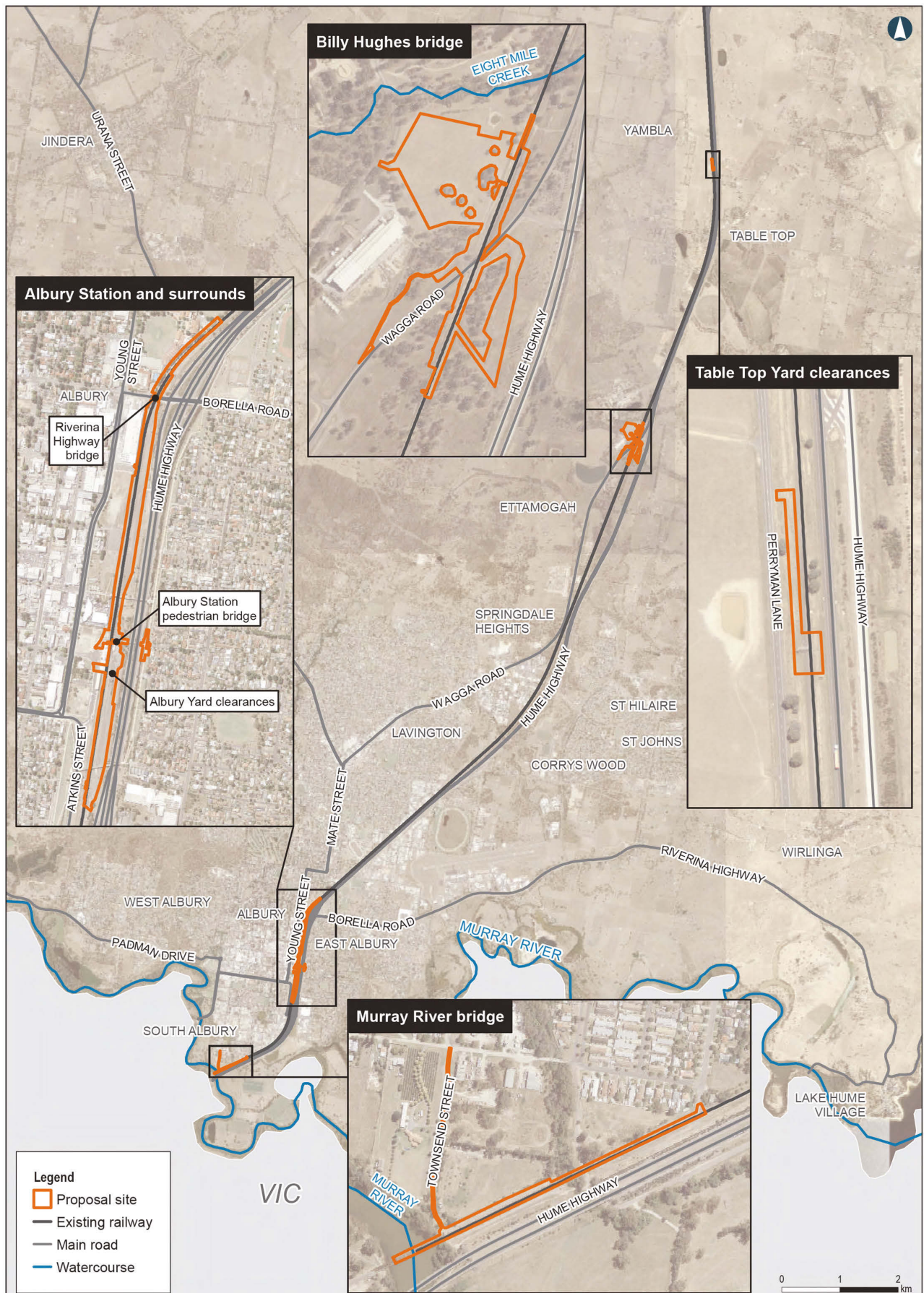
The proposal site is defined as the areas that would be directly impacted by the enhancement works for the Albury to Illabo section of Inland Rail. It includes the location of construction worksites, operational rail infrastructure, track realignment, new bridge structures, level crossings, and other ancillary infrastructure.

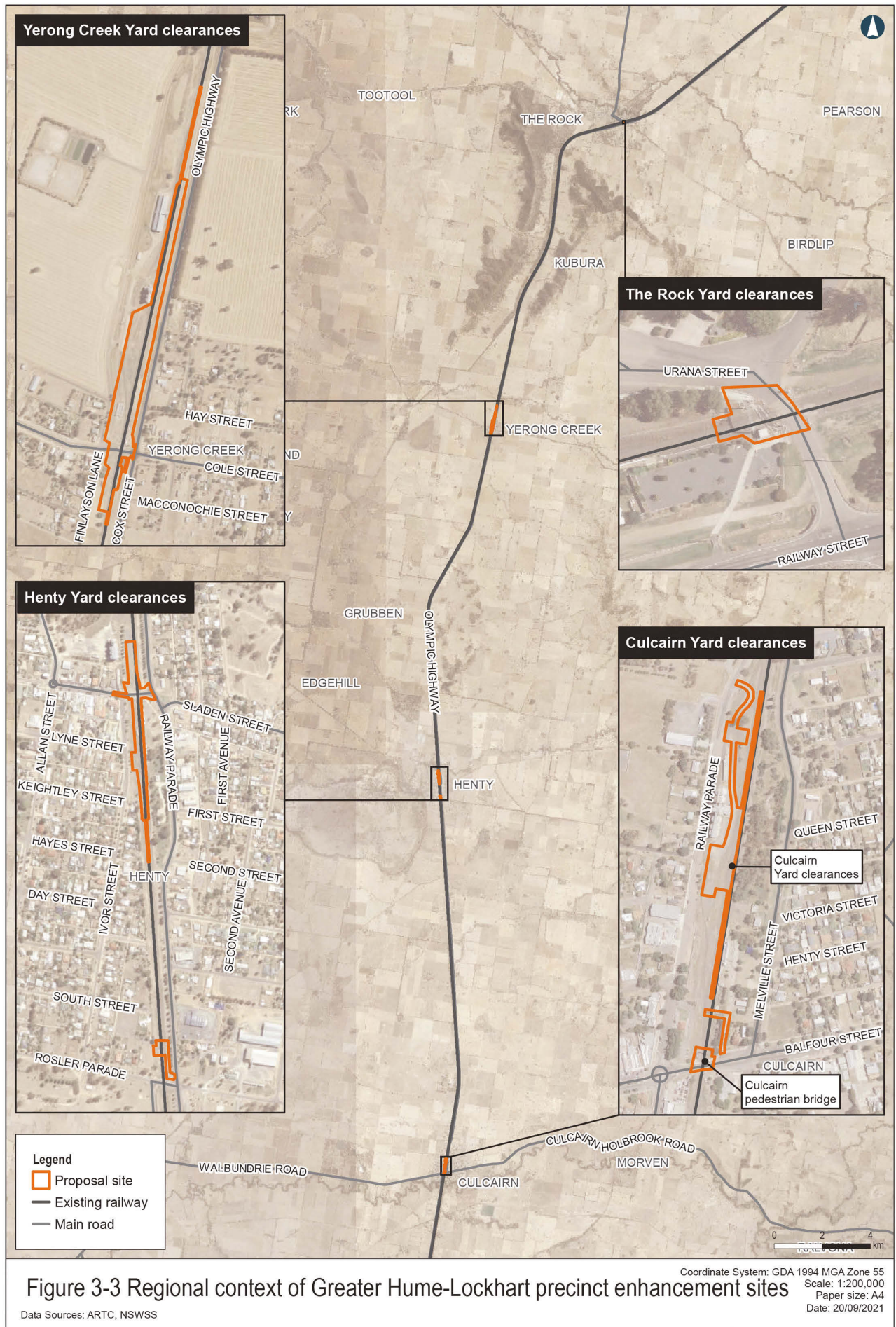
#### Enhancement sites

The proposal site comprises 24 enhancement sites, where enhancement works are proposed. These enhancement sites have been broken down into four precincts that align with the LGAs: Albury, Greater Hume–Lockhart, Wagga Wagga and Junee, as shown in Table 3-1 and Figure 3-2 to Figure 3-5. A description of the enhancement works at each enhancement site is described in Chapter 7: Proposal features and operation.

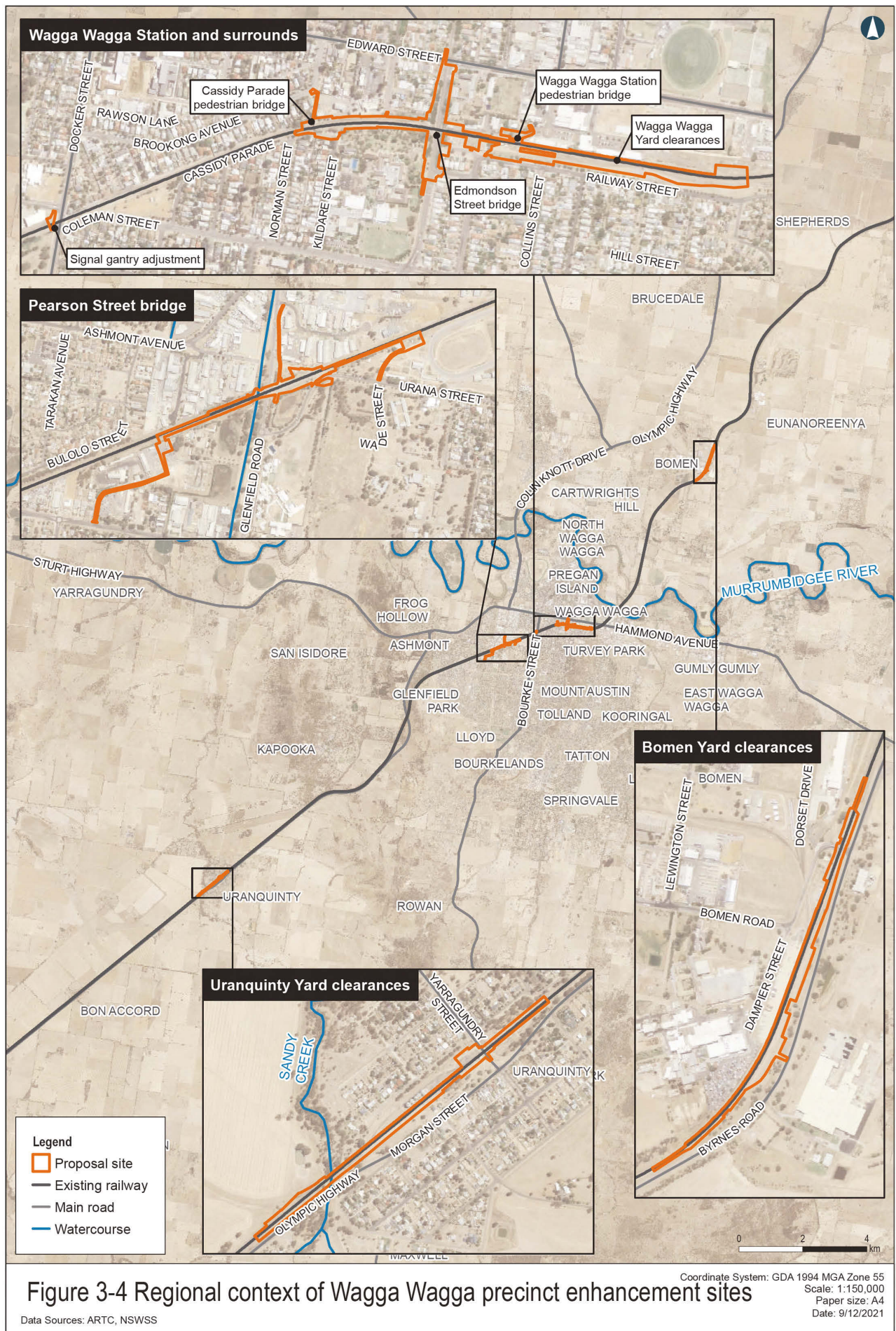
**TABLE 3-1 ENHANCEMENT SITES**

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





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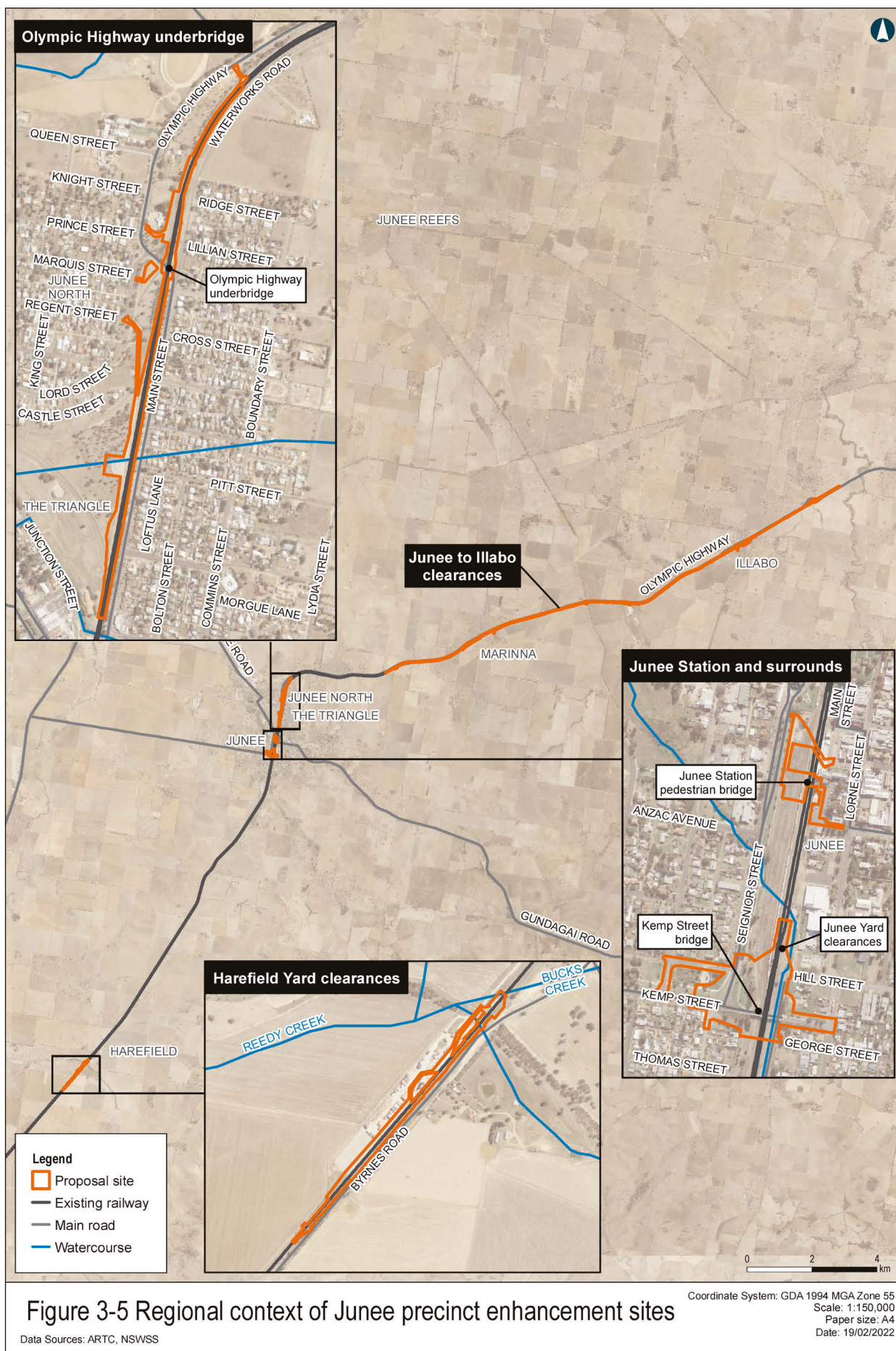


Figure 3-5 Regional context of Junee precinct enhancement sites

### 3.2.2 General biophysical environment

#### Biodiversity

The landscape surrounding the proposal has been heavily modified by agricultural practices and development. Much of the proposal site has been cleared by past and ongoing disturbances associated with establishment of rail infrastructure. Native vegetation covers approximately 22 hectares of the study area with the remaining area consisting of infrastructure, disturbed areas, non-native vegetation and plantings. Two native plant community types (PCT) were identified in the native vegetation:

- ▶ PCT 5—River red gum herbaceous-grassy very tall open forest wetland on inner floodplains in the lower slopes sub-region of the NSW South Western Slopes Bioregion and the eastern Riverina Bioregion
- ▶ PCT 277—Blakely's red gum–yellow box grassy tall woodland of the NSW South Western Slopes Bioregion.

The majority of PCT 277 that conforms to a threatened ecological community listed under the NSW *Biodiversity Conservation Act 2016* (NSW) (BC Act) and *Environment Protection and Biodiversity Conservation Act 1999* (Cth) is located in and around the Junee to Illabo clearances enhancement site.

Vegetation within the proposal site and surrounding landscape provides habitat and food sources to a range of fauna species. However, the existing development and land uses, such as agriculture and transport infrastructure, have created barriers to movement for some fauna species. Aquatic habitat is present along the Murray River and at smaller ephemeral creeks that cross the proposal site.

One nature conservation area, Doodle Comer Wetland Nature Reserve, is located approximately 1 km to the south-west of the Henty Yard clearances.

Further information on biodiversity is in Chapter 16: Biodiversity.

#### Water

The proposal site is within the Murrumbidgee River and Murray River catchments, which are sub-catchments within the Murray–Darling Basin. Both catchments support extensive food and crop production, including fruit and vegetables, rice and wine.

All of the enhancement sites within the Albury precinct are in the Murray catchment. The catchment supports extensive floodplains and wetlands, including nationally and internationally significant sites such as the Barmah–Millewa Forest and the Gunbower–Koondrook–Perricoota Forest in the west of NSW. Tourism based around the river environment and water activities are also economically important to the region. The enhancement sites within the Greater Hume–Lockhart, Wagga Wagga and Junee precincts are located in the Murrumbidgee catchment. The Murrumbidgee catchment extends from the Kosciuszko National Park in eastern NSW to Balranald in western NSW, with inflows primarily sourced from the Great Dividing Range.

The proposal site crosses several watercourses including the Murray River, Sandy Creek, Reedy Creek, Bucks Creek, and Jeralgambeth Creek in addition to other unnamed minor watercourses (e.g. small shallow ephemeral creeks and tributaries). The watercourses within the proposal site are ephemeral, with the exception of the Murray River, which is permanently flowing.

Several areas in and near the proposal site are identified as flood prone. Areas subject to mainstream flooding, which occurs when water overflows the natural or artificial banks of a watercourse, is present in Albury associated with the Murray River and at Uranquinty associated with Sandy Creek. Overland flooding also occurs elsewhere at Albury, Culcairn, Henty, Wagga Wagga, Bomen, Junee and Illabo. Overland flooding refers to water that runs across the land after rain before entering a watercourse.

No Ramsar wetlands are located within 10 km of the proposal site. There are three Nationally Important wetlands within 5 km of the proposal site including Ryan's Lagoon, Lake Hume and Doodle Comer Swamp.

Further information on the surface water environment is in Chapter 18: Hydrology, flooding and water quality.

#### Groundwater

Four groundwater systems are present in the vicinity of the proposal site including the Upper Murray (alluvium), Billabong Creek (alluvium), Wagga Wagga alluvial and fractured rock. Groundwater levels vary significantly across the proposal site depending on the groundwater source present at each enhancement site, local topographical conditions and influences such as climatic conditions.

Further information on the groundwater environment is in Chapter 19: Groundwater.

## Soils

The rail corridor between Albury and Illabo is on generally flat or undulating terrain. The elevation of the corridor primarily sits around 250 m Australian Height Datum (AHD) with higher elevation north of Junee with a peak of 350 m AHD.

The proposal site covers a wide range of soil landscape and types due to the geographic spread of the enhancement sites along the rail corridor. Land and soil capability have been classified and mapped according to the ability of the land to sustain and remain stable under particular land uses (OEH, 2012). Class 1 represents land capable of sustaining most land uses, including those that have a high impact on the soil, and Class 8 represents land that can only sustain very low-impact land uses. A majority of the proposal site is mapped Class 3 (moderate limitations) and Class 4 (moderate to severe limitations).

The proposal is located within an existing rail corridor, which has a general level of risk associated with contamination from historical development and activities associated with its operation. A range of sites within or adjacent to the rail corridor are also considered to have associated contaminated risk, including agricultural land, service stations, and industrial sites.

The proposal site and surrounding area is generally described as having low probability of acid sulfate soils (ASS) with the exception of areas along Murray River where sediments, which have a 'high probability' of inland ASS. There are also localised areas with high to moderate saline soils, particularly near Wagga Wagga.

Further information on soils and contamination is in Chapter 20: Soils and contamination.

### 3.2.3 General socio-economic and cultural environment

#### Socio-economic environment

The proposal spans five LGAs that, together, have a total population of over 145,000 residents. More than 30 per cent of these residents live in the town of Wagga Wagga, highlighting its significance to the region, and collectively around 65 per cent live within the Wagga Wagga and Albury LGAs. A very low proportion of residents live in Junee, Lockhart and Greater Hume LGAs.

The population in the Riverina Murray region has had an annual increase of less than one per cent for the last 15 years. The populations of Wagga Wagga and Albury are expected to experience a moderate increase in resident population between 2016 to 2036 (around 10.6 per cent and 13.9 per cent respectively). The other LGAs are expected to experience minimal or negative population growth.

The five LGAs have a similar age profile to the whole of NSW, with some minor differences:

- ▶ a slightly larger representation of dependents aged 0–17 than NSW
- ▶ a slightly larger proportion of young adults aged 18–24 than NSW
- ▶ a slightly lower proportion of young workers and parents and home builders aged 25–49 than NSW
- ▶ a slightly larger older population aged 60+ compared to NSW.

Within the proposal's LGAs, those with a smaller resident population typically have a higher proportion of older residents, and a smaller and older potential labour force. The LGAs with larger populations tended to have a larger representation of young workers and a larger potential labour force.

The main industries in the region are related to healthcare and agriculture, followed by education and retail services. Across the five LGAs, 5.9 per cent of the labour force is unemployed. Major sources of employment vary between LGAs. Key differences between the top five industries of employment within the LGAs are:

- ▶ in Junee, Lockhart and the Greater Hume LGAs, agriculture, fishing and forestry are the main sources of employment
- ▶ residents in Lockhart and the Greater Hume LGAs have the lowest job diversity reflected by the top two industries of employment accounting for more than a third of all employment opportunities
- ▶ in Wagga Wagga and Albury LGAs, healthcare and social assistance are the largest employers for residents.

The Riverina Murray region is one of the most productive and agriculturally diverse areas in Australia. In 2018–19, the gross value of agricultural production in the Riverina Murray region represented 34 per cent of the total gross value of agricultural production in NSW.

The Riverina Murray region is also recognised as popular tourist destination for visitors seeking to experience Australia's regional landscape and culture. The area offers urban centres abundant with shops and restaurants as well as a diverse natural environment featuring waterways, mountains and wildlife.

Further information on socio-economic characteristics is in Chapter 13: Social and Chapter 14: Economic.

## Land use and property

The main land uses in the five LGAs of the proposal site are cropping (56 per cent), grazing (31 per cent), nature conservation (3 per cent) and residential and farm infrastructure (two per cent). The proposal site is located predominantly within an existing rail corridor, which is owned by the NSW Government and leased to ARTC. The proposal site weaves in and out of major regional towns, Albury and Wagga Wagga, and smaller regional towns.

In Albury and Wagga Wagga, the proposal site is surrounded by a mix of land uses, including residential, education, commercial, industrial, open space and transport (roads). Residential properties are typically single detached dwellings, with some apartments located in the vicinity of Wagga Wagga Station.

The proposal site is located within the smaller regional towns of Illabo, Junee, Uranquinty, The Rock, Yerong Creek, Henty and Culcairn. These towns range in population from 144 in Illabo to 4,762 at Junee (ABS, 2016). The proposal site at these locations is adjacent to residential and commercial areas of these towns.

Land use is changing in selected areas in the five LGAs due to major projects and government initiatives. To the north of Albury is the Nexus Industrial Precinct. The precinct is located adjacent to the rail corridor and is proposed to support the development of range of sectors including logistics and manufacturing. Wagga Wagga Health and Knowledge Precinct Master Plan directly adjacent to the rail corridor in Wagga Wagga is a strategically planned, mixed-use precinct surrounding the regional centre's two major hospitals.

Wagga Wagga was announced as a Special Activation Precinct (SAP) in 2019. SAPs are existing or proposed growth precincts in regional NSW that the NSW Government has identified as having potential for growth. Planning and investment are prioritised for these precincts. The draft Master Plan for the Wagga Wagga SAP focuses on industry and employment. It capitalises on the Inland Rail program, bringing manufacturing, agribusiness, and freight and logistics to the region.

Major projects in the area are identified in Chapter 26: Cumulative impacts. Further information on land use and property is in Chapter 12: Land use and property.

## Aboriginal heritage

The proposal site falls within the traditional lands of the Wiradjuri language group. Gunnedah and Albury mark the northern and southern boundaries of Wiradjuri Country, while the eastern boundary is the Great Dividing Range, and the western boundary is approximately in line with the towns of Hay and Nyngan.

The Wiradjuri people generally moved around in groups, using the river flats, open land and waterways with some regularity through the seasons as indicated by the scattered archaeological evidence in the region. The arrival of Europeans in the areas in the early 1800s had a devastating impact on the traditional Wiradjuri lifestyle.

There are a number of recorded sites and Aboriginal Places within 20 km of the proposal site, including the Bomen Axe Quarry, which is a rock quarry and traditional axe manufacturing zone, and is an important cultural place for the Wiradjuri people due to its rarity, its demonstration of a range of Wiradjuri cultural practices, and its potential as an educational resource. Doodle Comer Wetland also is considered to be a cultural area of high significance by Wiradjuri people and a place of natural importance. Buckaringah Creek drains to this wetland and is connected to a locally significant songline.

The archaeological potential varies along of the proposal site as the establishment of the rail corridor has heavily disturbed the soil. Two isolated artefacts were identified at Yerong Creek and Junee in close proximity to the proposal site, and one area of archaeological potential was identified at Murray River bridge enhancement site.

Further information on Aboriginal heritage is in Chapter 10: Aboriginal heritage.

## Non-Aboriginal heritage

The proposal site encompasses multiple state and locally heritage listed items located across 20 of the 24 enhancements sites. There are 42 registered heritage items located within the proposal site with several of these sites listed on multiple heritage registers. There are 9 state heritage registered items, 24 locally listed items and 9 items on the ARTC's and/or Transport for NSW's (formerly Railcorp) Section 170 heritage register.

Two areas of unregistered archaeological potential within the proposal site are also present at Albury Station and Yerong Creek. A vast majority of these heritage structures were established with or following the construction of the railway network and have heritage values that have been influenced by the Main South Line rail corridor.

The items of state heritage significance located within the proposal site (full or partial) are:

- ▶ Murray River underbridge
- ▶ Albury Railway Station and Yard
- ▶ Culcairn Railway Station and Yard Group
- ▶ Henty Railway Station and Yard Group
- ▶ The Rock Railway Station and Yard Group

- ▶ Wagga Wagga Railway Station and Yard Group
- ▶ Bomen Railway Station
- ▶ Junee Railway Station, Yard, and Locomotive Depot Group
- ▶ Junee Railway Station moveable relics.

The locally listed and section 170 registered heritage items within the proposal site comprise generally of infrastructure associated with railway (including the state heritage listed items above), conservation areas and heritage structures such as Wagga Wagga Showground and the Mount Erin Convent in Wagga Wagga.

Within 200 metres of the proposal site, there are 86 registered heritage items and heritage conservation areas including a number of other local and State-heritage listed items, as well as a national heritage item.

Further information on non-Aboriginal heritage is in Chapter 11: Non-Aboriginal heritage.

## Transport

The existing rail network is described in section 3.1.2.

### Road network

The area includes a network of highways, other arterial/main roads, local roads and private access tracks. The four highways that cross or are located near the proposal site are:

- ▶ Hume Highway at Albury, Ettamogah and Table Top
- ▶ Riverina Highway (Borella Road) at Albury
- ▶ Olympic Highway at Culcairn, Henty, Yerong Creek, The Rock, Uranquinty, Wagga Wagga, Junee and Illabo. This highway also runs parallel to, and crosses (at level), the Junee to Illabo clearances enhancement site
- ▶ Sturt Highway at Wagga Wagga.

The proposal site crosses the Riverina Highway (Albury), and the Olympic Highway (Culcairn, Junee and approximately 2 km north-east of Illabo). These roads pass over and under the rail corridor.

A number of regional, local and private rural roads are located near and across the proposal site. There are eight open level crossings that provide public and private road access within the proposal site. One closed level crossing is located at Dampier Street, Bomen.

### Pedestrian and cyclist network

There is a majority of pedestrian infrastructure within the urban centres of Albury and Wagga Wagga with more limited infrastructure in small towns along the rail corridor. Dedicated pedestrian bridges that provide connectivity across the rail corridor are located at Albury Station and Wagga Wagga (Cassidy Parade and Wagga Wagga Station). Closed pedestrian bridges are located at Culcairn and Junee Station. At Junee Station, the bridge had only provided access to a station platform that is no longer operational.

Limited dedicated cycle infrastructure is present in or near the proposal site.

### Public transport

Public, private and school buses operate within the within and near the proposal site. A majority of public and private bus services operate within Albury, Wagga Wagga and Junee. Passenger trains operate between Sydney and Albury as described in section 3.1.2.

Further information on the traffic and transport infrastructure is in Chapter 9: Transport and traffic.