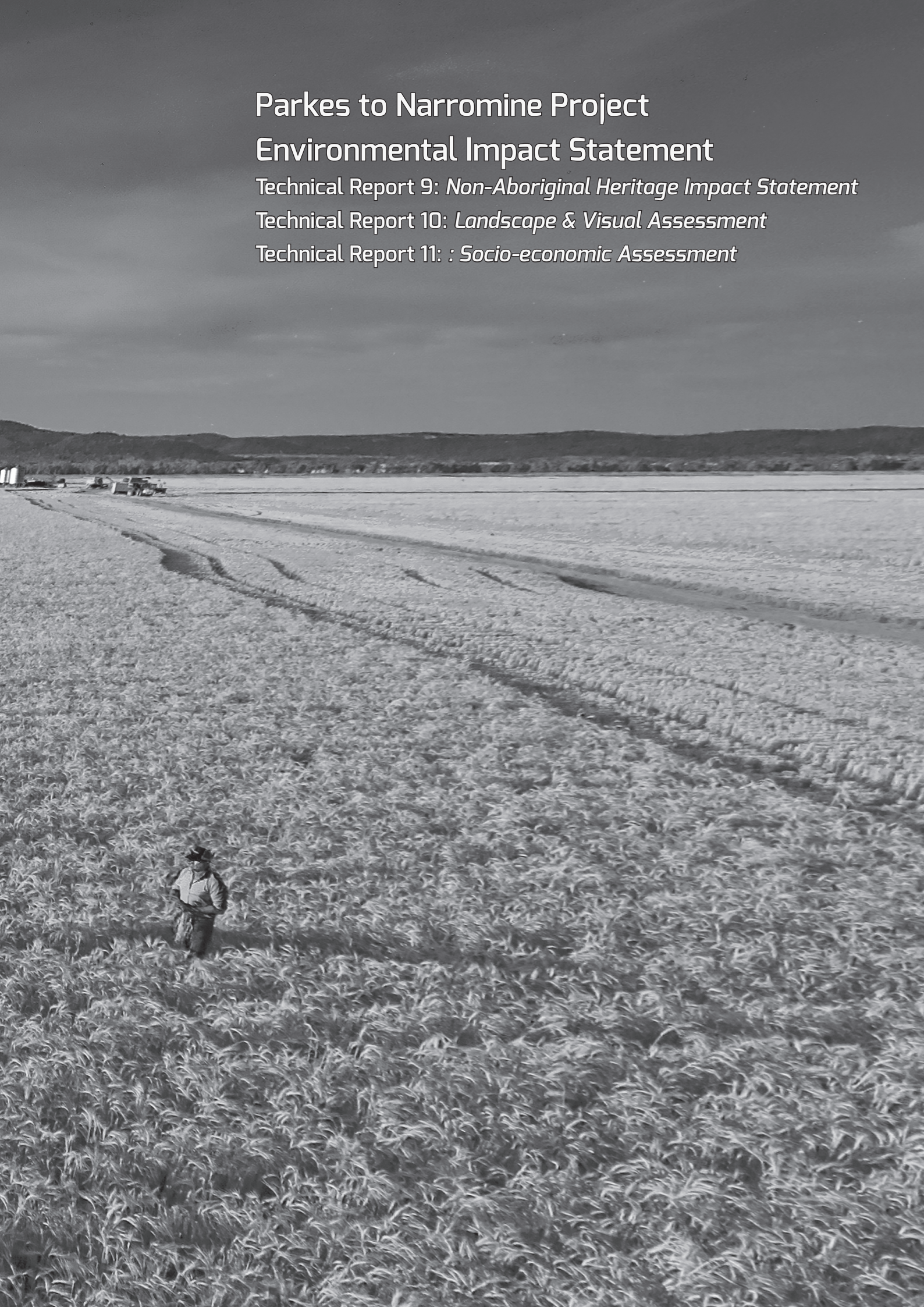
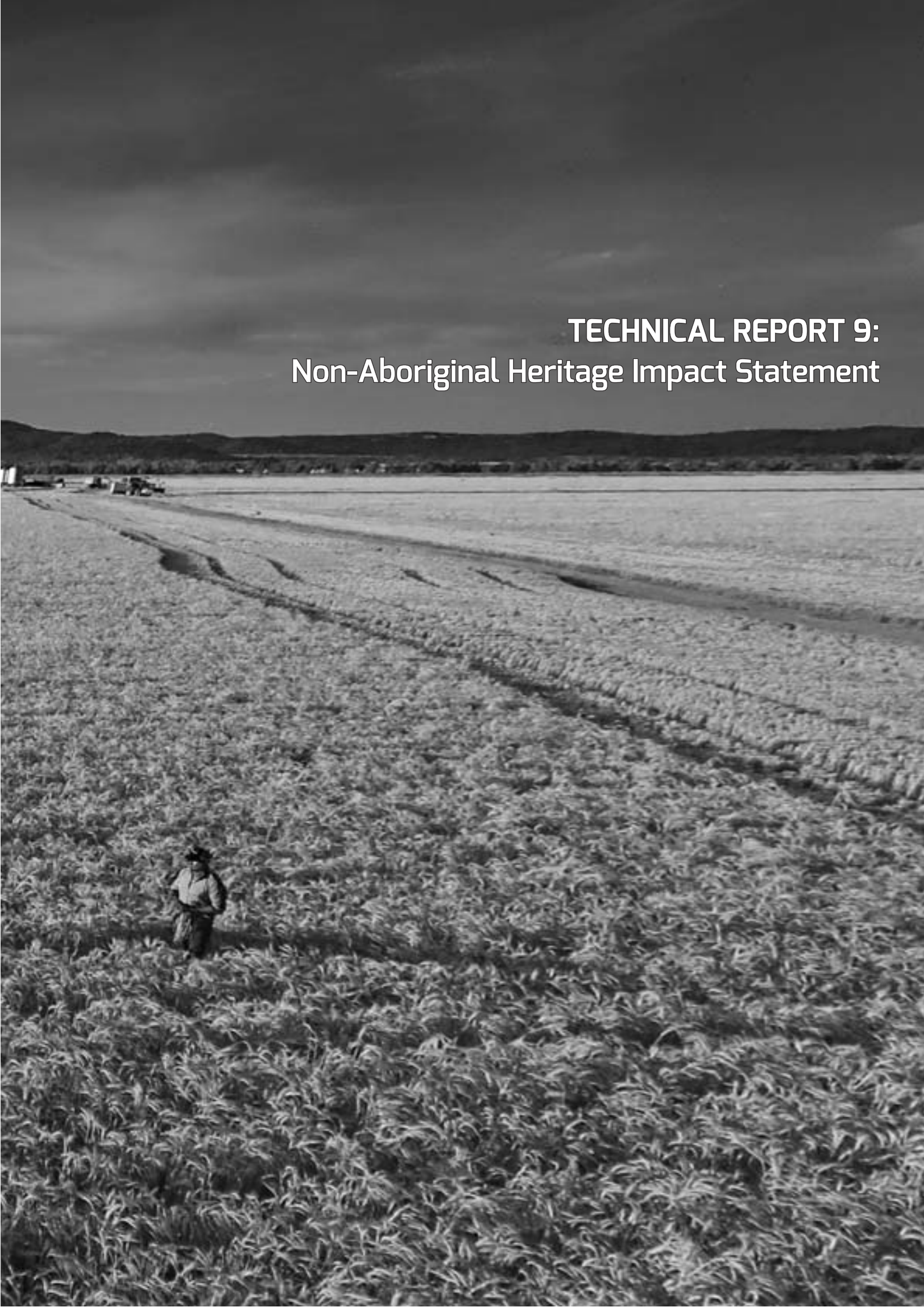
Parkes to Narromine Project
Environmental Impact Statement

Technical Report 9: *Non-Aboriginal Heritage Impact Statement*

Technical Report 10: *Landscape & Visual Assessment*

Technical Report 11: *: Socio-economic Assessment*





TECHNICAL REPORT 9:
Non-Aboriginal Heritage Impact Statement

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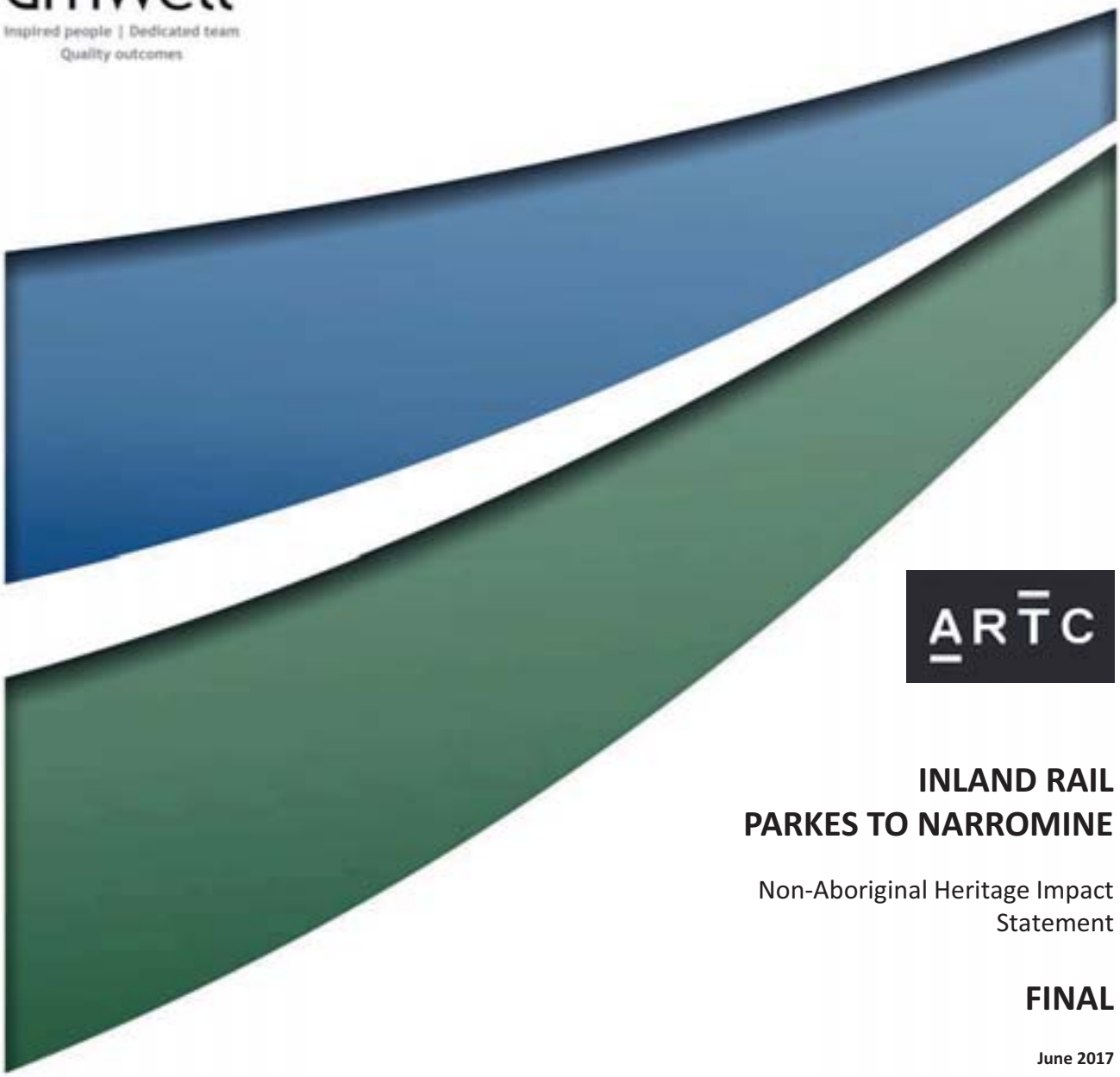

ARTC

INLAND RAIL
PARKES TO NARROMINE

Non-Aboriginal Heritage Impact Statement

FINAL

June 2017

INLAND RAIL
PARKES TO NARROMINE

Non-Aboriginal Heritage Impact Statement

FINAL

Prepared by
Umwelt (Australia) Pty Limited
on behalf of
ARTC

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Report No.	3606/R05/FINAL
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This report was prepared using Umwelt's ISO 9001 certified Quality Management System.

Executive Summary

This report details an assessment of the non-Aboriginal heritage impacts of the Parkes to Narromine section of Inland Rail ('the proposal').

The proposal would involve upgrading the existing rail line between Parkes and Narromine, including new crossing loops, some track realignment and replacement of culverts. The proposal also includes a new north to west connection between Inland Rail and the Broken Hill line (Parkes north west connection). Ancillary works will include upgrading, closing or consolidating level crossings, upgrading signalling and communications, establishing new fencing or upgrading existing fencing along the rail corridor, and relocating/protecting services and utilities.

This report has been prepared as a part of the environmental impact assessment of the proposed Parkes to Narromine Inland Rail project under Part 5.1 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). Australian Rail Track Corporation Ltd (ARTC) ('the proponent') is seeking approval to construct and operate the Parkes to Narromine section of Inland Rail ('the proposal').This report has been prepared to address the environmental assessment requirements of the Secretary of the Department of Planning and Environment (the SEARs), issued on 17 February 2016.

The proposal is generally located in the existing rail corridor between the towns of Parkes and Narromine via Peak Hill (refer to **Figure 1.1**).

The relevant database searches indicate there are no heritage listed items within the proposal site. However, five listed items were identified within the vicinity (within 1 kilometre) of the rail corridor.

The potential non-Aboriginal heritage resources of the proposal site generally reflect the documented history of the surrounding region (discussed in **Section 3.0**) and the extant Parkes to Narromine rail alignment.

The rail line which essentially comprises the proposal site was originally constructed between Peak Hill and Narromine in 1910 before being extended to Goobang Junction immediately north of Parkes in 1914. It was constructed as a Pioneer Line which, as a result of the success of the wheat industry, has been continually upgraded following the same alignment as the original 1910 to 1914 constructed line.

The potential non-Aboriginal heritage resource, and likely absence of any archaeological resource, is considered to be typical of a rail line and includes the rail formation itself with culverts and underbridges of varying construction materials and age, evidence of the former stations and other rail related structures and infrastructure. The grain rail sidings and landmark grain silos dominate the landscape immediately adjacent to the proposal site.

The proposal comprises a former (now redundant) Pioneer Line constructed with the aim of establishing access to wheat and wool growing areas in regional NSW. It demonstrates and contributes to an important part of the history of the pattern of settlement and development in the region. The current rail line demonstrates the role of Pioneer Lines in encouraging settlement and agricultural and pastoral development in rural NSW at the beginning of the twentieth century and in the region between Parkes and Narromine particularly. As a result, the proposal site, and its individual surviving component elements such as the extant timber constructed underbridges and remnant evidence of former stations, is considered to generally be of local significance. With the exception of the rail line and its associated structures, evidence of stations and other infrastructure, the proposal site itself is unlikely to contain significant non-Aboriginal heritage or archaeological remains associated with the development history of the area.

In general the impact of the proposal can be considered to comprise the removal of the existing rail line, including rails, sleepers and ballast, and its associated culverts and the construction of a new rail line within the same rail corridor. As such the rail line will remain as an easily understood rail line in regional western NSW.

Retaining all evidence of the former rail line, culverts and stations etc. as extant today is not feasible as significant upgrades to the formation are required as part of the proposal in order for the rail line to comply with the Inland Rail required performance specifications. No identified original elements of the Pioneer Line survive intact that would warrant consideration of preservation.

The majority of the former stations have been previously removed with only occasional earthen embankments or loading banks remaining as evidence of their former locations. The rail line itself has been continually upgraded as required since its construction as a Pioneer Line and no original features (with the possible exception of some of the timber components of a number of underbridges) have been identified or are expected to be found. Statements of Heritage Impact and management recommendations are provided in **Sections 6.2**, **6.3** and **6.4** for the listed and unlisted heritage Items potentially impacted by the proposal.

It is not appropriate, feasible or practical to record the entire Parkes to Narromine section of rail line prior to its removal. Where appropriate in terms of significance and level of proposed impacts, photographic recording has been recommended for certain sites/items as detailed in **Section 6.0**.This recording would be considered to comprise an adequate and appropriate photographic recording of the rail line and its associated elements and will ensure that a full understanding and record of the former Pioneer Line will be available for future generations. The photographic recording will be undertaken with consideration of Heritage Division, OEH guidelines *Photographic Recording of Heritage Items Using Film or Digital Capture* (2006). Consideration should also be granted to the development of an Interpretation Strategy.

In the event that unexpected archaeological remains or potential heritage items (including a burial site or human skeletal material) not identified as part of this report are discovered during the construction all works in the immediate area should cease, the remains and potential impacts should be assessed by a qualified archaeologist or heritage consultant and, if necessary, the Heritage Division, OEH notified in accordance with Section 146 of the *Heritage Act 1977* (New South Wales (NSW)). In the case of a burial site or human skeletal material being exposed the local police, OEH and the Heritage Branch should be contacted and the remains inspected by a physical or forensic anthropologist to make a determination of ancestry. The management of the remains would then be determined through liaison with the appropriate stakeholders (New South Wales Police Force, forensic anthropologist, OEH, Heritage Division, registered Aboriginal parties etc.) and in accordance with the *Public Health Act 1991*.

Glossary

AHC	Australian Heritage Commission (now Australian Heritage Council)
ARHS	Australian Railway Historical Society
ARTC	Australian Rail Track Corporation Ltd
EP&A Act	*Environmental Planning and Assessment Act 1979* (NSW)
EPBC Act	*Environment Protection Biodiversity Conservation Act 1999*
Heritage Act	*Heritage Act 1977* (NSW)
Heritage Council	NSW Heritage Council
Heritage Division	Heritage Division, Office of Environment and Heritage
IR	Inland Rail
NSW	New South Wales
OEH	NSW Office of Environment and Heritage
Proposal	Parkes to Narromine section of Inland Rail
Proposal site	The area that would be directly affected by construction works (also known as the construction footprint). It includes the location of proposal infrastructure, the area that would be directly disturbed by the movement of construction plant and machinery, and the location of the storage areas/compounds sites etc, that would be used to construct that infrastructure.
Rail Corridor	Area generally defined by fences located approximately 20 metres either side of the rail line. In some sections where fences are not present the rail corridor may be wider, extending out to 30 to 40 metres from the rail line
Rail line	Existing rail line within rail corridor
SEARs	Environmental assessment requirements of the Secretary of the Department of Planning and Environment
SSI	State Significant Infrastructure

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1.0 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. The Inland Rail programme (Inland Rail) involves the design and construction of a new inland rail connection, about 1700 kilometre long, between Melbourne and Brisbane, via central-west New South Wales (NSW) and Toowoomba in Queensland. Inland Rail would enhance Australia's existing national rail network and serve the interstate freight market.

Australian Rail Track Corporation Ltd (ARTC) is seeking approval to construct and operate the Parkes to Narromine section of Inland Rail ('the proposal'), which consists of 106 kilometres of upgraded rail track and associated facilities.

The proposal requires approval from the NSW Minister for Planning under Part 5.1 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). The proposal is also a controlled action under the Commonwealth *Environment Protection Biodiversity Conservation Act 1999* (EPBC Act), and requires approval from the Australian Minister for the Environment and Energy.

This report has been prepared by Umwelt (Australia) Pty Limited (Umwelt) as part of the environmental impact statement (EIS) for the proposal. The EIS has been prepared to accompany the application for approval of the proposal, and addresses the environmental assessment requirements of the Secretary of the Department of Planning and Environment (the SEARs), issued on 8 November 2016.

1.2 The Proposal

1.2.1 Location

The proposal is generally located in the existing rail corridor between the towns of Parkes and Narromine, via Peak Hill. In addition, a new connection to the Broken Hill rail line ('the Parkes north west connection') is proposed outside the existing rail corridor at the southern end of the proposal site near Parkes. The location of the proposal is shown in **Figure 1.1**.

1.2.2 Key Features

The key features of the proposal involve:

- upgrading the track, track formation, and culverts within the existing rail corridor for a distance of 106 kilometres between Parkes and Narromine
- realigning the track where required within the existing rail corridor to minimise the radius of tight curves
- providing three new crossing loops within the existing rail corridor, at Goonumbla, Peak Hill, and Timjelly
- providing a new 5.3 kilometre long rail connection to the Broken Hill Line to the west of Parkes ('the Parkes north west connection'), including a road bridge over the existing rail corridor at Brolgan Road ('the Brolgan Road overbridge').

The key features of the proposal are shown in **Figure 1.2** with towns and local government areas shown in **Figure 1.3**.

Ancillary work would include works to level crossings, signalling and communications, signage and fencing, and services and utilities.

Further information on the proposal is provided in the EIS.

1.2.3 Timing

Subject to approval of the proposal, construction is planned to start in early to mid 2018, and is expected to take about 18 months. The proposal is expected to be operational in 2020. Inland Rail as a whole is expected to be operational in 2025.

1.2.4 Operation

Prior to the opening of Inland Rail as a whole, the proposal would be used by existing rail traffic, which includes trains carrying grain and ore at an average rate of about four trains per day. It is estimated that the operation of Inland Rail would involve an annual average of about 8.5 trains per day in 2025, increasing to 15 trains per day in 2040. The trains would be a mix of grain, intermodal (freight), and other general transport trains.

1.3 Purpose and Scope of this Report

This report summarises the results of the non-Aboriginal heritage impact assessment of the proposal. It addresses the non-Aboriginal heritage specific requirements of the SEARs, as listed in **Table 1.1**. It also addresses the requirements of Office of Environment and Heritage (OEH), as listed in **Table 1.2**.

Specifically, this assessment:

- describes the identified and potential historic heritage items within and in the vicinity of the proposal site
- assesses the historic heritage significance of listed and non-listed heritage items
- assesses the potential of impact to heritage significance by the proposal
- provides management and mitigation strategies for the proposed impacts.

This report does not include an assessment or consideration of any Aboriginal archaeological values or Aboriginal cultural heritage values related to the proposal. Aboriginal archaeological values and cultural heritage values are assessed in *ARTC Inland Rail – Parkes to Narromine Aboriginal Cultural Heritage and Archaeological Assessment* (Umwelt 2017).

Table 1.1 Relevant SEARs

Requirement for Non-Aboriginal Heritage	Where addressed in this report
1. The Proponent must identify and assess any direct and/or indirect impacts (including cumulative impacts) to the heritage significance of: **(c) environmental heritage, as defined under the Heritage Act 1977** **(d) items listed on the National and World Heritage lists.**	Throughout this report
2. Where impacts to State or locally significant heritage items are identified, the assessment must: **(a) include a statement of heritage impact for all heritage items (including significance assessment)**	**Sections 5.0** and **6.0**
(b) consider impacts to the item of significance caused by , but not limited to, vibration, demolition, archaeological disturbance, altered historical arrangements and access, visual amenity, landscape and vistas, curtilage, subsidence and architectural noise treatment (as relevant)	**Section 6.0**
(c) outline measures to avoid and minimise those impacts in accordance with the current guidelines	**Section 6.0**
(d) be undertaken by a suitably qualified heritage consultant(s) (note: where archaeological excavations are proposed the relevant consultant must meet the NSW Heritage Council's Excavation Director criteria).	**Section 1.4.2**

Table 1.2 summarises the OEH recommendations that were provided to inform the SEARs.

Table 1.2 OEH Assessment Recommendations for Non-Aboriginal Heritage

OEH Environmental Assessment Requirements - Heritage	Where addressed in this report
The EIS must provide a heritage assessment including but not limited to an assessment of impacts to State and local heritage including conservation areas, natural heritage areas, places of Aboriginal heritage value, buildings, works, relics, gardens, landscapes, views, trees should be assessed. Where impacts to State or locally significant heritage items are identified, the assessment shall:	Throughout this report
a. outline the proposed mitigation and management measures (including measures to avoid significant impacts and an evaluation of the effectiveness of the mitigation measures) generally consistent with the NSW Heritage Manual (1996),	**Section 6.0**

OEH Environmental Assessment Requirements - Heritage	Where addressed in this report
b. be undertaken by a suitably qualified heritage consultant(s) (note: where archaeological excavations are proposed the relevant consultant must meet the NSW Heritage Council's Excavation Director criteria),	**Section 1.4.2**
c. include a statement of heritage impact for all heritage items (including significance assessment),	**Sections 5.0** and **6.0**
d. consider impacts including, but not limited to, vibration, demolition, archaeological disturbance, altered historical arrangements and access, landscape and vistas, and architectural noise treatment (as relevant), and	**Section 6.0**
e. where potential archaeological impacts have been identified develop an appropriate archaeological assessment methodology, including research design, to guide physical archaeological test excavations (terrestrial and maritime as relevant) and include the results of these test excavations.	Not applicable to the proposal as no archaeological impacts have been identified

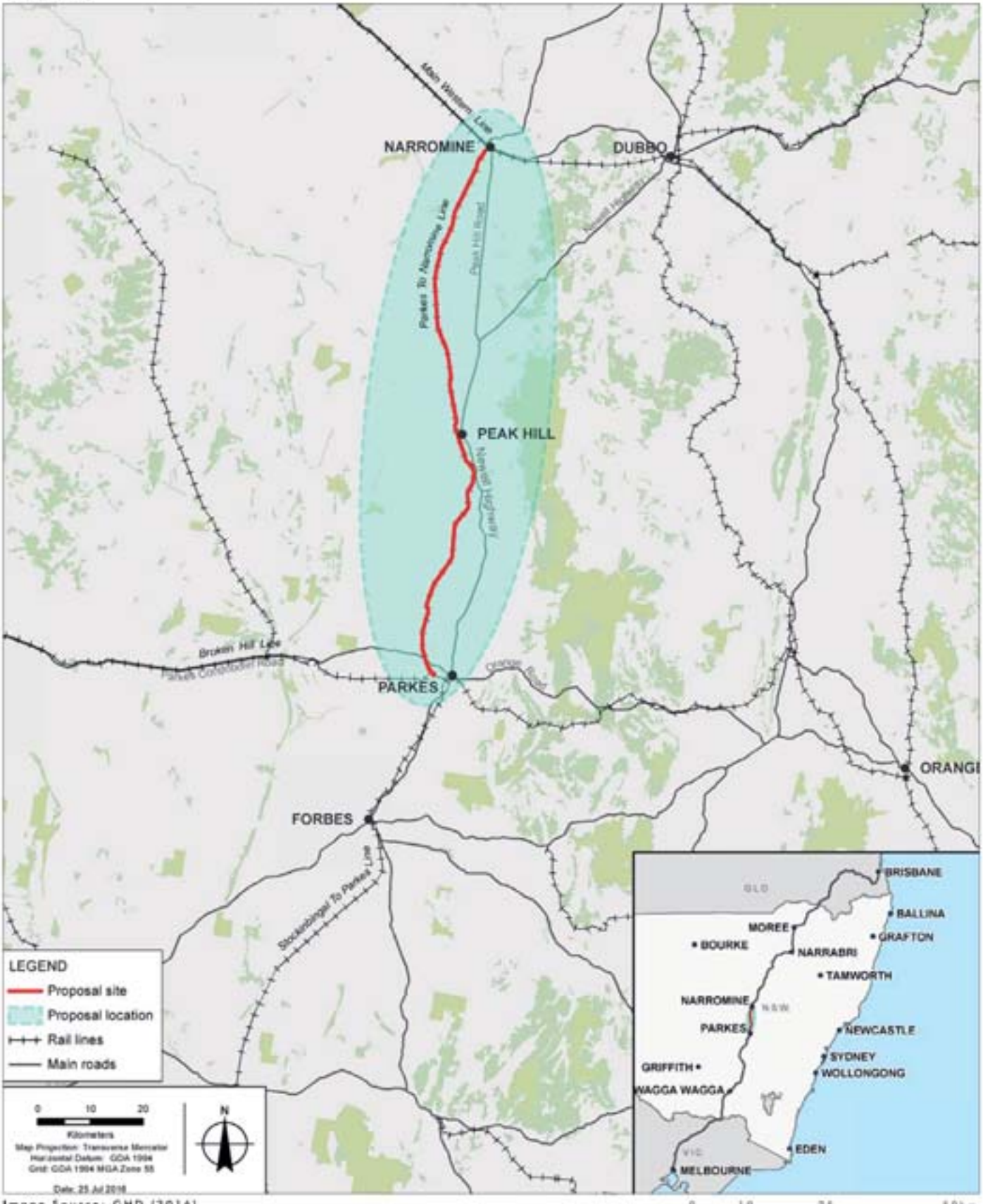


Image Source: GHD (2016)

FIGURE 1.1

Location of the Proposal

1.4 Proposal site information

For the purposes of this Non-Aboriginal Heritage Impact Statement, the proposal site represents the area of impact within and surrounding the existing rail corridor. This includes permanent and temporary disturbances as outlined in **Section 6.0**.

The proposal site is the area that would be directly impacted by construction of the proposal and includes the location of operational infrastructure. The majority of works associated with the proposal would be undertaken within the existing rail corridor for the Parkes to Narromine rail line (shown in **Figure 1.1**). The proposal site also includes the proposed location of the Parkes north west connection.

For the purposes of this report, the proposal site is considered to have a width of 30 metres, providing for a 15 metre buffer on each side of the alignment centreline. The proposal site is assumed to include all the required track infrastructure, cess drains, haul roads, culverts, level crossings, spoil mounds, and the Brolgan Road overbridge. The proposal site also includes the location of construction compounds.

The following additional assessment areas outside the proposal site have also been considered for the non-Aboriginal heritage assessment – an approximate 60 metre buffer around culverts; and an approximate 120 metre buffer around level crossings.

1.4.1 Methodology

As outlined in the OEH recommendations, this assessment has been undertaken in accordance with guidelines set out in the *NSW Heritage Manual 1996* (Heritage Office and Department of Urban Affairs & Planning), including *Archaeological Assessments*, *Assessing Heritage Significance*, *Statements of Heritage Impact* and *Heritage terms and Abbreviations* and with consideration of the principles contained in *The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance 1999* (Australia ICOMOS. 2013) and the Historical Archaeology Code of Practice (2006).

Key components in the preparation of this report included:

- reviewing relevant heritage databases
- researching, reviewing and compiling the historical context of the proposal site
- undertaking targeted site inspection of the proposal site
- completing an assessment of the significance of the proposal site
- preparing a heritage impact statement for the proposal site
- developing a management strategy for the proposal site.

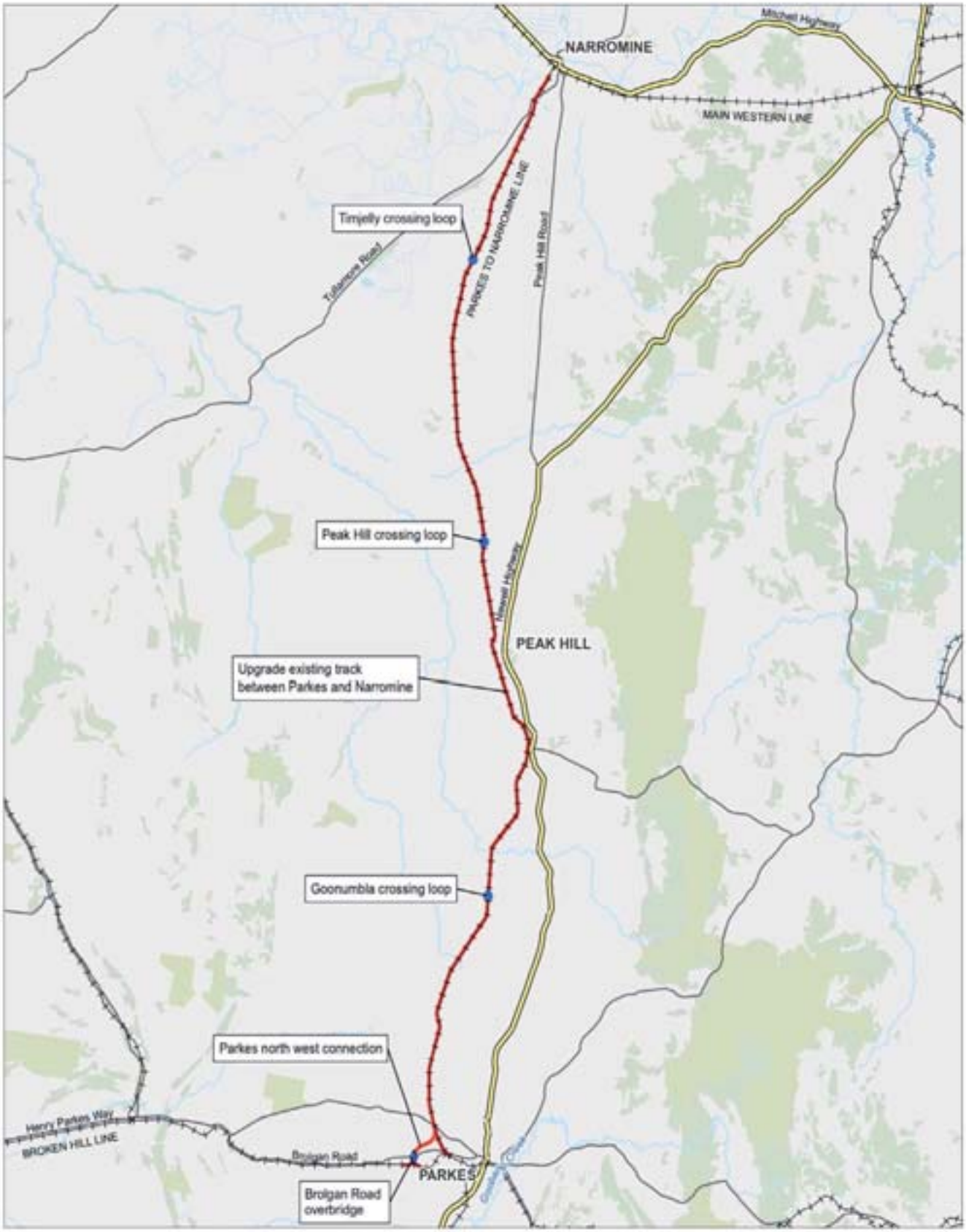
1.4.2 Report Preparation

This report was prepared by Tim Adams (Principal Archaeologist), Amanda Reynolds (Senior Archaeologist) and Alison Lamond (Archaeologist). Field surveys were led by Nicola Roche (Principal Archaeologist) and Franz Reidel (Senior Archaeologist). Tim and Franz both meet the NSW Heritage Council's criteria for Excavation Directors.

1.5 Structure of this Report

The structure of this report is outlined below.

- Section 1 – provides an introduction to the report
- Section 2 – provides the statutory heritage overview and discusses heritage listings
- Section 3 – provides a historical context for the proposal site
- Section 4 – provides the physical context for the proposal site including results of research and site inspections
- Section 5 – provides the statement of significance for the proposal site
- Section 6 – provides the heritage impact statement and management strategy for the proposal site.



LEGEND

- New bridge
- Crossing loop
- The proposal
- Railway
- Highway
- Road

0 2.5 5 10 15
Kilometers
Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

N

FIGURE 1.2

Key Features of the Proposal

Image Source: GHD (2017)

File Name (A4): 805/3606_133.dgn
20170620 13:53

Image Source: Google Earth (2013)
Data Source: Geoscience Australia (2009), Parsons Brinckerhoff (2014)

0 5 10 20km
1:500 000

Legend

- Proposal Site
- Local Government Area

FIGURE 1.3

Parkes to Narromine Route

2.0 Statutory Overview

The *Heritage Act 1977* (NSW) (the Heritage Act) and the *Environmental Planning and Assessment Act 1979* (EP&A Act) are the primary statutory controls protecting non-Aboriginal (historical/European) heritage within NSW.

The proposal will require approval under Part 5.1 of the EP&A Act. The proposal is declared to be development that is State Significant Infrastructure and the Minister for Planning will be the consent authority for the proposal and the relevant approval provisions of the Heritage Act and local planning instruments established under the EP&A Act do not apply.

However, for the purposes of environmental assessment an environmental impact assessment is required to be prepared in accordance with the SEARs. This report comprises the Non-Aboriginal Heritage Impact Statement prepared as part of environmental impact assessment.

2.1 Heritage Listings

In order to identify if any statutory listed non-Aboriginal heritage items are located within or in the immediate vicinity of the proposal site, desktop searches were conducted of the following heritage registers and local planning instruments:

1) ARTC Section 170 register

2) State Heritage Inventory (including State Heritage register)

3) Australian Heritage Database (including Commonwealth and National heritage lists)

4) Australian Heritage Places Inventory

5) Parkes Local Environmental Plan 2012

6) Narromine Local Environmental Plan 2011.

The searches indicate there are no heritage listed items within the proposal site. However, several listed items were identified within the vicinity (within 1 kilometre) of the rail corridor. These are listed in **Table 2.1** and detailed on **Figures 2.1A** and **2.1B.**

Table 2.1 Listed Heritage Items located within the vicinity of the proposal site

Item Name	Location	Listing and Significance	Distance to proposal site
Narromine District Hospital	Bound by Dandaloo, Cathundral and Tremain Streets Narromine	Department of Health S170 Heritage & Conservation Register	Approximately 900 metres to east
Peak Hill Courthouse	Derribong Street	Department of Justice S170 Heritage & Conservation Register	Approximately 775 metres to east

Item Name	Location	Listing and Significance	Distance to proposal site
Peak Hill Fire Station	130 Caswell Street	Fire & Rescue NSW S170 Heritage & Conservation Register	Approximately 975 metres to east
Peak Hill Police Station and Official Residence	80 Derribong Street	NSW Police Force S170 Heritage & Conservation Register	Approximately 750 metres to east
St. James Roman Catholic Church	Narra Street Lots 17-20 DP 758832	Parkes LEP 2012 Local significance	Approximately 950 metres to east

Note that while there are additional listed items in the broader areas of Peak Hill and within Parkes and Narromine town centres, these are all located over one kilometre away from the proposal site and as such are not relevant to this report.

The *ARTC Parkes to Narromine Inland Rail Noise and Vibration Assessment* (GHD 2017) identified that the expected magnitude of ground vibration resulting from general construction activities is not expected to be sufficient to cause damage if the equipment operates at distances greater than 35 metres from heritage buildings and structures'. Piling activities have the potential to exceed structural vibration values for 'heritage structures at distances of 180 metres from the activity for impact piling, 50 metres for vibratory piling and 35 metres for bored piling'(GHD 2016). Operational vibration resulting from the proposal is not expected to result in any structural damage and vibration is predicted to remain within acceptable levels (GHD 2016). As such there are not considered to be any potential direct or indirect impacts to any statutorily listed heritage items as a result of the proposal and the statutorily listed heritage items listed in **Table 2.1** are not discussed further in this report. Further discussion regarding indirect impacts such as vibration is presented in **Section 6.1.2.**

2.2 Consultation

General consultation has been undertaken by GHD / ARTC with government authorities (including the Heritage Division, OEH), local Councils and community stakeholders in relation to the proposal (refer to Parkes to Narromine Environmental Impact Statement (EIS) 2016).

The potential non-Aboriginal heritage impacts associated with the proposal and the recommendations of this report have been broadly discussed with Paul Samaras, ARTC Heritage Manager Enterprise Services. Where appropriate, in terms of significance and level of potential proposal impacts, the photographic recording of certain elements of the proposal site was discussed as an adequate and appropriate method of recording the rail line and any significant associated elements to ensure that a full understanding and record of the former Pioneer Line will be available for future generations.

Information kindly provided by the Australian Railway Historical Society (ARHS) has been utilised and reproduced within this report.

Image Source: Google Earth (2013)
Data Source: Geoscience Australia (2009), Parsons Brinckerhoff (2014)

0 2.5 5.0 10.0km
1:250 000

Legend

- Proposal Site
- Local Government Area
- Listed Heritage Item

FIGURE 2.1A

Listed Heritage Items within 1 km of the Proposal Site

Image Source: Google Earth (2013)
Data Source: Geoscience Australia (2009), Parsons Brinckerhoff (2014)

0 2.5 5.0 10.0km
1:250 000

Legend

- Proposal Site
- Local Government Area
- Listed Heritage Item

FIGURE 2.1B

Listed Heritage Items within 1 km of the Proposal Site

3.0 Context

As part of NSW heritage assessment procedures it is essential to have a full understanding of a site, item or area based on its historical and physical context. This section of the report provides a historical context for the proposal site and its broader locality to provide an understanding of the significance of any non-Aboriginal heritage or archaeological sites or items within the proposal site.

3.1 European Contact

According to Tindale's (1974) map of Aboriginal Australia, the proposal site extends over the country of the Wiradjuri people and the Wongaibon people. Tindale's map indicates that the section of the proposal site from Parkes to Alectown is within the country of the Wiradjuri and that the country of the Wongaibon included the 'headwaters of Bogan River; on Tigers Camp and Boggy Cowal creeks'. This includes the portion of the proposal site between Alectown and Narromine.

The earliest historical records relating to Aboriginal people in the proposal site date from 1817 when John Oxley, Surveyor General of NSW from 1812, camped on the Bogan River during his exploration of the area (refer to **Section 3.2**). The expedition noted the presence of deposits of freshwater mussel shell and stone artefacts and identified the existence of a spring on Gundong Creek that was utilised by Aboriginal people (referenced in OzArk 2011).

A 1935 expedition to the area by Thomas Mitchell, Surveyor General from 1828 (following John Oxley's death), relied heavily upon guidance from local Aboriginal people. Mitchell frequently referenced the excellent navigation skills of his Aboriginal guides along the Bogan River, particularly in relation to their knowledge of the location of reliable water sources. Mitchell later recognised that the limited European settlement that occurred over the 10 years following his expedition had resulted in impacts to the landscape; in particular to the water courses (Umwelt 2016). He noted that

> *…had I been an aboriginal native, should have felt and regretted that change.*

Subsequent records of Aboriginal people living or working within or in the vicinity of the proposal site are relatively limited until the modern period, with generalised accounts of interactions between Aboriginal people, pastoralists and (subsequently) gold miners (refer to English et al 1998). The annual return for the Aboriginal Protection Board in 1891 records that 261 Aboriginal people lived in the Dubbo district, which included Peak Hill and Narromine (English et al 1998:50), with many Aboriginal men employed on pastoral stations (Umwelt 2016). The majority of other records are those relating to the establishment of Aboriginal missions and subsequent documents (such as those produced by the Australian Inland Mission) that document aspects of mission life. The Bulgandramine Mission was formally established in 1907 and was located on the Bogan River 22 kilometres northwest of Peak Hill (to the west of the proposal site). The mission remained in existence until 1941, with many Aboriginal people from the broader region relocated to live in this area (Umwelt 2016).

Further details and discussion relating to the ethnohistoric context of the proposal site are provided in *ARTC Inland Rail – Parkes to Narromine Aboriginal Cultural Heritage and Archaeological Assessment* (Umwelt 2017).

3.2 Early Exploration

The wider area is dominated by the Lachlan River and its tributary the Bogan River. The Lachlan River region was first discovered in 1815 by Surveyor George Evans. In 1817 John Oxley further explored the Lachlan Plain including the areas of Forbes, Bogan Gate, Parkes and Peak Hill.

In 1835 and 1836 Thomas Mitchell explored the region including the mapping of the Bogan and Lachlan Rivers (Heritage Office 1996:98). Mitchell's expedition 'sealed the future of the inland for pastoral occupancy' as his route became the basic supply route for squatting activity (Tindall 1982:6).

The map of Mitchells's expeditions '*Map of Australia showing the routes taken by Sir T.L. Mithchell in his expeditions into the interior of New Holland'* shows Mitchell's 1835 route along the Bogan River to the area of present day Bogan and his 1836 route along the Lachlan River (refer to **Plate 3.1**).

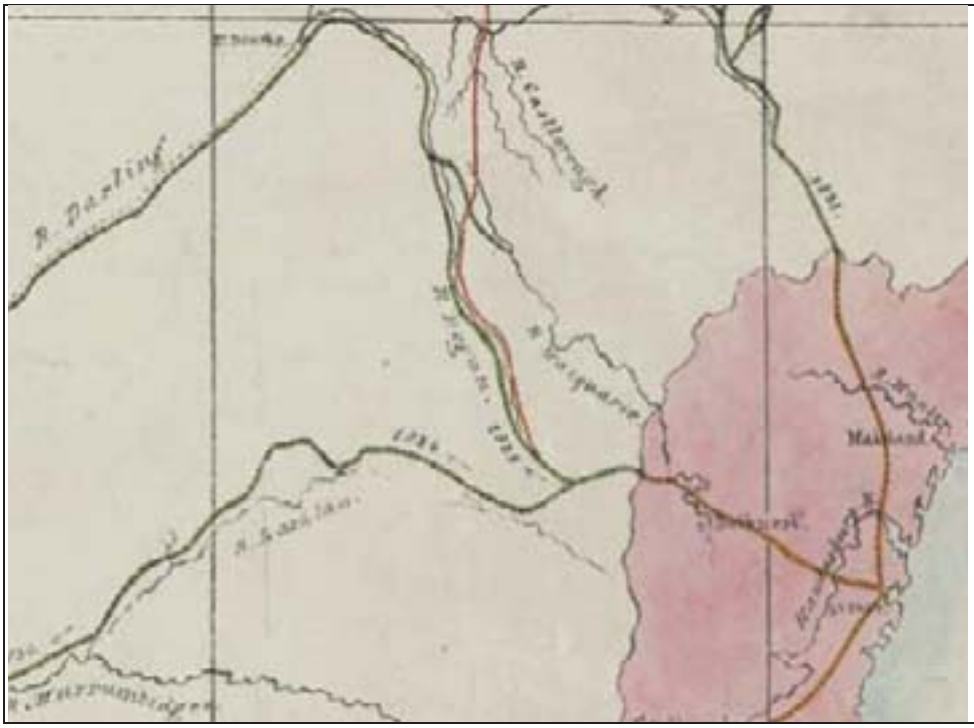


Plate 3.1

Detail of map showing routes taken by Mitchell.

Shows 1835 route along the Bogan River and 1836 route along the Lachlan River

Source: State Library of NSW

3.3 Early Settlement and Land Administration

When European settlers arrived in NSW in the nineteenth century the colonial government claimed all lands for the Crown, with the governor of NSW having exclusive authority to make land grants. Although the Lachlan Plain area was not officially opened up for settlement until the 1840s, the grazing potential of the area was recognised in the early 1800s (Heritage Office 1996:98).

The Australian Agricultural Company (AA Co.) was established in 1824 by an Act of the British Parliament which granted the Company one million acres with the primary purpose of producing wool and other crops for export. The AA Co. also entered the coal industry in the Newcastle area with the intention of exporting coal to India for use by the steamers of the East India Company. The AA Co. held its monopoly over the coal mining industry in the Newcastle area until 1847 when the Company agreed to abandon its protected position in the coal industry in return for the right to sell its estates.

From the 1820s the occupation of Crown land without legal title was a widespread practice and land administration became one of the most important tasks overseen by the colonial government. The colonial authorities attempted to contain settlement by limiting unlicensed occupation inland. In 1826 the Limits of Location were established in NSW by Governor Darling which comprised the geographical limits beyond which settlers would not be permitted to go in search of the land and land grants could only be issued within these boundaries making it illegal to settle the land outside the newly established boundaries. Before 1826, land grants were given exclusively by the Governor. Grants of land were free until 1825 and could consist of up to 30 acres.

The reasoning behind limiting the area available for settlement in the vast regions 'beyond the protection of the military' was given as the vulnerability of squatters to attack by Aboriginal people, drought, flood and starvation (Tindall 1982:5). However, pastoralists had been bringing their cattle onto western rural NSW since John Oxley's explorations of the Lachlan Plains in 1817. The continued push west by pastoralists led Sir Ralph Darling (Governor of NSW from 1825 to 1831) to issue a Government Order in 1829 extending the boundaries of settlement (the Limits of Location) to encompass the existing Nineteen Counties surrounding Sydney. The Nineteen Counties effectively became the Limits of Location (refer to **Plate 3.2**); which defined

> *...the limits of location to the settled areas or districts, and proclaiming that the 19 counties then existing were considered ample for the requirements of the penal settlement (Tindall 1982:5).*

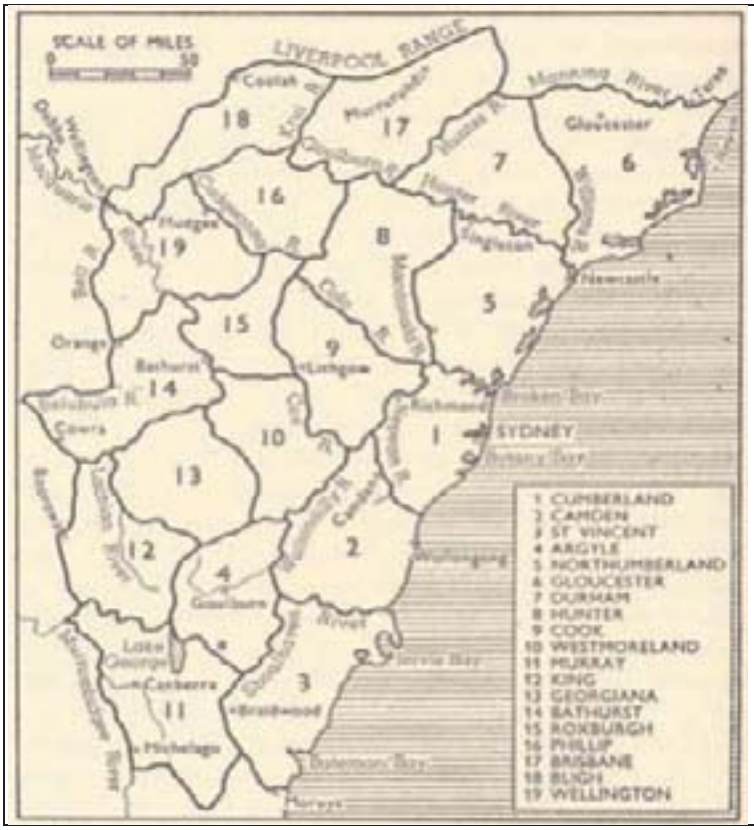


Plate 3.2

Nineteen Counties Map 1958

However, pastoralists wanting to take advantage of the inland grass country did not restrain themselves by the 'limit of location'. They were given the title 'squatters', a term that came to refer to those who extended their activities across the arbitrary boundaries established by the colonial government and became holders of vast tracts of country and wealth (Tindall 1982:5). In 1831 Governor Darling admitted that

> *...setting the precise boundaries beyond which settlers were not allowed to receive grants or to lease land did not get away with the problem of cattle being grazed beyond the limits (Tindall 1982:6)*

Governor Darling's successor, Sir Richard Bourke (Governor of NSW from 1831 to 1837), declared that unauthorised occupation must not be permitted to continue whilst it created any title to the land for the occupier (Tindall 1982:6). Pastoralists began moving into the Darling Plains area from the Hunter Valley in the south or the Liverpool Plains in the west. When the AA Co. took over fertile land in the Liverpool Range in 1832 squatters were driven into the New England and Darling Plains areas, with pastoral runs out to Wee Waa and Moree in existence by 1836 (Heritage Office 1996: 80). The land along the Macquarie River was taken up through the 1830s. The south-western pastoral runs were predominantly sheep, while the north and east runs were cattle (Heritage Office 1996:80).

3.3.1 Squatters Map

The term 'squatter' (first appearing in 1828) soon came to refer to a person of high social prestige who grazed livestock on a large scale; often having no legal title to the land beyond being the first European to settle on it. Successful squatters were among the wealthiest class of people in the colony and came to be described as the 'squattocracy'. The expanding market for meat due to population growth in NSW and the demand for grazing land to meet the needs of the developing sheep industry, provided impetus for the increased squatting activity during the 1830s.

In 1837, Robert Dixon, an assistant surveyor working in the Surveyor General's Department in Sydney, produced a unique map of NSW which attempted to record the spread of settlement across the colony. It was Dixon's intention to show exactly who owned land in NSW and exactly where that land was, and each property (each piece of 'appropriated land') was annotated with the name of the landholder. As such it shows the acreages of land granted and sold in the colony up to June 1836.

Dixon's map (full title: *Exhibiting the Situation and Extent of the Appropriated Lands, including the Counties, Towns, Villages, Reserves, Compiled from Authentic Surveys*) is commonly known as 'the Squatter's Map' and comprises the earliest documented attempt to show who owned what land in NSW. Dixon (1800-1858) was an explorer and surveyor born in Durham in 1800 who came to NSW in 1821. From 1826 he was the assistant surveyor in the Surveyor-General's Department. The 1837 map was produced while Dixon was on leave in London and is reported to have been made using other surveys and documents. Surveyor General Major Thomas Mitchell, who had produced his own less informative map of NSW in 1834 is reported to have been offended by Dixon's 1837 map and refused to reappoint Dixon on his return to Sydney after nearly 15 years of service (Warden 2010:16-17).

The limits of Dixon's map generally reflect the western boundaries of the Nineteen Counties, with no granted land shown to the west of the Bell River; approximately 70 kilometres east of the proposal site (refer to **Plate 3.3**).

Plate 3.3

Detail of Robert Dixon's 1837 Map of the Colony

Map shows no settlement west of the Bell River. Mount Canobolas is shown at the bottom left of the image.

3.4 Early Pastoralism and Land Administration

Thomas Kite is recognised as likely being the first squatter in the wider Parkes area. Kite followed the expedition tracks of Mitchell and established a station on the Goobang Creek in 1835, a few kilometres northeast of Parkes. The first non-Aboriginal settlement in the Parkes area is mentioned in Mitchell's diaries. In September of 1835 he recorded that on his return trip through the Central West, while camped at the Goobang Creek, a stockman rode up to him reporting that his employer, named "Pike" had established a cattle station a few miles from where his party was camped. It is possible that Thomas Kite and Pike were the same person due to the similarity of the names (Parkes Shire Council nd).

In 1833 an *Act for Protecting the Crown Lands of the Colony from Encroachment, Intrusion and Trespass* was passed. The Act authorised the Governor to appoint Commissioners of Crown lands. However, the 1833 Act appears to have had little or no impact on the unauthorised occupation of Crown Land. As a result Governor Bourke sought to legalise and regulate squatting through further legislation in 1836 which led to the issuing of licences to settlers to depasture their stock on the vacant Crown lands beyond the Limits of Location. The 1836 Act imposed a £10 licence fee for depasturing on lands beyond the Nineteen Counties. The Act also provided for the appointment of full-time Commissioners of Crown Lands to the districts beyond the 'limits of location' (NSW State Records. nd). These commissioners administered the licensing. However, the imposition of the license fee implied approval for squatting (NSW State Records: Squatters and Graziers nd.).

The concept of areas within and outside the Nineteen Counties was discontinued in 1847. After this time NSW was divided into three areas: Settled (the former Nineteen Counties), Intermediate and Unsettled. Pastoral leases were available in these three areas for one, eight and fourteen years respectively (State Library: Agriculture nd.).

In nineteenth century Australia, the method for establishing a pastoral run or station required the grazier to pay a certain price per head for the number of sheep or cattle on the property which was generally situated on Crown-owned land, and thereafter pay the government an annual rental for the lease on the property, which varied according to the situation and quality of the country, and ranged from £10 to £100 per block of 100 square miles. By May 1880, depending to the quality of the run and the stock, the usual price for a station with 10,000 sheep was about £10,000 and about £3000 for a property with 1000 or 1500 head of cattle. Freehold estates could also be purchased outright in the settled districts near towns and railways from £1 to £5 pounds per acre.

Cattle runs were granted 10 acres per head, while sheep were granted 4 acres per head. There were more cattle runs than sheep stations in the region, with more sheep owners settling further north in New England. The early runs were owned by absentee landowners and this, along with temporary licence restrictions is the reason for the lack of early impressive houses. Ex-convicts and stock keepers were living in huts on the land (Heritage Office 1996: 81). Owners began living on their stations after 1847, meaning better houses began to be built. Cattle stations would employ two to four men, while sheep stations could employ up to 20 men, with neighbours co-operating at annual muster time.

Large pastoral runs, varying from 11,000 to 25,000 hectares were opened in the Lachlan River region between 1835 and 1858. In 1839 the Lachlan Pastoral District was established, over the land between the Lachlan and Murrumbidgee Rivers. The land north of the Lachlan River was within the Wellington Pastoral District. The grazing potential of the Lachlan plains was noticed early and attracted attention even before it was opened to settlers in 1840. The Lachlan River is located at the western extent of early exploration and although it was discovered in 1815 it was not explored until John Oxley explored the area in 1817. Despite the land not being opened for settlement, pastoralists were bringing their cattle onto the plains; with one family, the Woods, occupying over 68,000 hectares of the south-east plains prior to 1840.

By 1848 NSW was subdivided into large pastoral runs (Heritage Office 1996: 80). By 1849 there were up to 50 runs in the area with frontages to the Lachlan River. Thomas Kite was one of the more significant of the early settlers with land totalling over 60,000 hectares on either side of the Lachlan River (Heritage Office 1996:99). However, in the 1840s the largest station in the area was Benjamin Boyd's who had 60,000 hectares around present Condobolin to the west of Parkes. Boyd's station was broken up after 1849 because of financial difficulties.

The larger squatters exploited the £10 licence fee and legislation was tightened to obtain additional fees. Although Boyd had occupied nine runs in the wider area and 30 runs in all in the region, he had only paid £140 in licensing fees. The big squatters, including Boyd who was the president of the newly formed Pastoralists' Association, protested the increase in fees. They demanded fixity of tenure for land beyond the Limit of Location over which they held leases. The resulting *Land Act of 1847* granted a leasehold of 14 years with provisions for compensation on eventual resumption at the assessed value for any improvement made. Under this act rent was paid based on a per acre basis. The Act was seen as a triumph for squatters who had previously had no title to any improvements to the land they occupied which had resulted in most improvements (likely just stockyards and living quarters for stockmen) being of a rough and temporary nature (Tindall 1982:21). The provision for compensation of all improvements allowed a better quality and more permanent buildings to be constructed along with fencing, dams and tree clearing (Tindall 1982:25).

By 1848 1745 runs had been applied for (Tindall 1982:6-7) and there were four major stations that leases had been taken out on:

- Coobang – 38,400 acres (owned by Thomas Kite)
- Coradgery – 23,040 acres
- Burrawang – 35,200 acres (owned by Thomas Kite)
- Gunningbland – 16,000 acres.

The principal purpose of the early stations was to raise cattle, and the majority of the Lachlan Pastoral District runs had no sheep at all. However, this changed from the late 1850s when Hanbury Clements settled at Eugowra to the southeast of Parkes. Clements brought sheep with him from Bathurst and by 1878 there were 12,000 sheep at Eugowra. Other landowners soon followed suit and in the 1860s and 1870s the wooden shearing sheds that are now such a feature in the region were being constructed (Heritage Office 1996:100).

3.4.1 Robertson Land Acts

In 1861 Crown land management was reformed with two pieces of new legislation, which included the introduction of Sir John Robertson's scheme of 'free selection before survey'. The *Crown Lands Alienation Act 1861* dealt with the sale of land and the *Crown Lands Occupation Act 1861* allowed for the leasing of Crown Land (NSW State Records: Archives In Brief nd.).

In 1856 Sir John Robertson was invited to run for (and won) the seat of Phillip, Brisbane and Bligh at the first parliamentary elections. With farmers excluded from leasing and generally in a much inferior position to the squattocracy Robertson was determined to implement land reform and considered the key to basic social reform was change in land policy and the need that settlers, mainly agricultural and with minimum capital, should have ready access to land, even if occupied by lease-holding squatters (Nairn, 1976).

At the June 1859 general election Robertson retained his seat, now the Upper Hunter and became leader of the Opposition. On 30 September 1859 the Lands Department was established, with Robertson as the first Secretary for Lands. By September he had his new land legislation ready and brought down the Crown Lands Alienation Bill and the Crown Lands Occupation Bill, embodying free selection before survey; both bills passed their second reading, but in committee in October the vital clause was defeated 33 to 28. With his parliamentary resources exhausted Robertson obtained a dissolution and prepared to fight a general election on the issue in December. The resulting elections were a triumph for Robertson as out of 53 candidates favouring his land bills, 35 were elected. All 14 candidates who openly opposed the bills were defeated. Robertson retired from the premiership on 9 January 1861 to concentrate on carrying his legislation in both assembly and council. He resubmitted his bills on 16 January and they were eventually passed on 24 October (Nairn, 1976).

From 1861, the Robertson Act opened all Crown Land for selection until the law changed again in 1884. During this period, land parcels of between 40 and 320 acres could be conditionally purchased without a survey, as long as the purchaser had the funds to improve the land acquired and the intention to occupy it for at least three years. Previously land in settled districts had been sold by auction while vast areas of unsettled grazing lands were leased and licensed to mainly pastoralists. The new legislation made all leasehold land in the Colony available for selection and sale. The legislation also abolished land distinctions used in the Colony, such as settled and unsettled districts, and introduced new land divisions, such as town land, suburban land, first class settled districts and second class settled districts (State Library: Agriculture nd.).

3.5 Discovery of Gold

The discovery of gold in the region signalled a new period of the area's history. The majority of the major towns in the Lachlan plain area were established primarily as a result of gold. These include Forbes, Parkes, Peak Hill, Wyalong, West Wyalong and Lake Cargelligo. Only Bogan Gate, Condobolin and Ungarie were established as a result of the needs of farmers for a market and social centre. The earliest gold rush in the area was at present day Forbes in 1861. Approximately 28,000 miners were soon living in a tent town, quickly followed by stores, banks and even two theatres, resulting in the establishment of the township of Forbes (Heritage Office 1996:100).

In 1863 and 1864 gold mines opened at Curragong, just north of present day Parkes, bringing approximately 10,000 prospective miners to the canvas town of Curragong. By 1867 the initial gold rush had finished but the early 1870s saw the beginning of the alluvial goldrush when gold was discovered on 18 July 1870 and the area renamed Bushmans (located two kilometres south of the current centre of Parkes). The township soon became a stock and trades crossroads and other mines in the immediate area like Welcome, Tearaway and Great Northern contributed to the population of approximately 5,000 active miners in 1873 (Butel and Thompson 2008:209). Other areas to benefit from the gold rush included Grenfell (1867) to the south, Lake Cargelligo (1873) to the west, Peak Hill (1889) to the north and Wyalong (1893) to the southwest (Heritage Office 1996:101-102).

The first gold discovery in the Peak Hill area was at Tomingley in 1881 when gold was identified in quartz veins. It took another eight years for gold to be discovered at Peak Hill itself (only 16 kilometres away from Tomingley) in 1889. This discovery generated another gold rush and within a few months approximately 2,000 people were working around the boom town of Peak Hill which was described as being '...regularly and well laid out' (Frost and Robinson, 1981:74).

In his December 1889 report the mining warden, Mr W.S. Caswell reported that

> *I have traced 911 oz 12 dwt 2 gr to the various banks, the value of which was about £4,082 133s4d. A private individual also sent over 250oz of gold to the mint worth about £1,000. This is a fair return for four months work, especially as the greater proportion of those assembled were speculators, tradespersons or loafers (Frost and Robinson, 1981:74).*

3.6 1884 Land Acts and Rural Settlement

The end of the Lachlan Plain gold rushes coincided with important legislative changes regarding land purchases and thus rural settlement and land exploitation in the area as two new Land Acts were passed in 1884 controlling all Crown Land alienation and occupation. NSW was divided into three Divisions, the Eastern, Central and Western Divisions. The proposal site is within the Central Division. The Acts allowed for pastoral leases, annual and special leases, scrub leases and conditional leaseholds. Free selection was still possible but the maximum area was enlarged by permitting the applicant to take up three-quarters of their selection as a Conditional Lease, with the provision that it could later be converted into a Conditional Purchase.

Pastoral landholders were required to divide their land into two sections, the Leasehold area and the Resumed area. The Leasehold area was leased to the runholder for fixed periods. The Resumed portion could be held by them under an annual lease only. It was liable to be resumed for settlement by the Department of Lands. A re-assessment of the nature of pastoral holdings was the central principle enshrined in the new Act. All pastoral land in NSW had to be re-evaluated by the Department. The 1884 Crown Lands Act meant Pastoral Holdings, all of which were given a record number, replaced Pastoral Runs.

Scrub Leases were created by the 1884 Act. These provided for the leasing of areas less than 10,240 acres (4,144 ha) as scrub lands. A new condition was attached to Scrub Leases by the 1895 Lands Act. Scrub Leases had been available for land wholly or partly covered by scrub and could be leased by auction, tender or application for terms up to 21 years. The term was extended to 28 years by the 1895 Act. The holder had to destroy the scrub or noxious weeds and keep it free. In the final year of the lease the lessee could apply to convert it to a homestead grant of 640 acres.

The Improvement Lease was also created by the 1895 Lands Act and allowed the leasing of scrub land not suitable for settlement, up to 28 years. Land classified as scrub or inferior could be taken up under this tenure. They were offered by auction or tender and were available up to a maximum of 20,480 acres. The term was 28 years. Conditions included improving the land under conditions drawn up for each case and the holder had tenant rights to any improvements. There was no compulsory residence requirement.

The Settlement Lease was also created by the 1895 Lands Act. A Settlement Lease could be taken up for agriculture or grazing with a maximum of 1,280 acres for agricultural use and 10,240 for agriculture plus grazing. The term was 28 years later extended to 40 years. The holder had to reside on the lease for the whole term, enclose the holding within 5 years, and comply with conditions about noxious animals, scrub etc. The holder could apply to convert it to a homestead selection in the final year with an area of 1,280 acres (Kass 2011).

3.7 Pastoralist's Maps

William Hanson compiled the 1889 book *Pastoral possessions of NSW* following the 1884 Land Act and the creation of the three divisions. He intended the document to form a summary of NSW's

> *...immense pastoral resources, and to be a guide to all who are or may become interested in the further development of this almost terra incognita of New South Wales; in short to afford reliable data on the subject of our possessions not heretofore available to the public at large...The volume may also be acceptable to the capitalist as demonstrating the solid foundation upon which our public securities stand, and the certainty of a steady revenue being derivable from the Pastoral Possessions of the colony (Library of Congress nd).*

Hanson's book is divided into the three sections established by the 1884 Land Acts: the Eastern division, the Central division and the Western division.

There are a number of nineteenth century maps that provide information regarding pastoral runs in nineteenth century NSW. **Figures 3.1** and **3.2** shows the rail alignment overlaid onto an 1860 and 1880s pastoralists map respectively. Used in conjunction with William Hanson's *Pastoral possessions of NSW* names and areas of runs can be determined along with ownership details and information regarding license fees, annual rents etc.

The 1860s map (**Figure 3.1**) comprises *Reuss and Browne's Map of New South Wales and part of Queensland showing the relative positions of the pastoral runs, squattages, districts, counties, towns, reserves etc.* The 1886 map (**Figure 3.2**) comprises the *Index map of New South Wales shewing pastoral holdings* prepared by Surveyor General's Office. The rail alignment has been overlaid onto these maps; however it should be noted that the location of the rail alignment (especially on the 1860s map) is approximate due to the scale and limited common detail with modern mapping available on the early maps.

Table 3.1 lists the likely names and areas of runs in the area through which the rail alignment passes from the north to the south. Ownership details and information regarding license fees and annual rents are also noted.

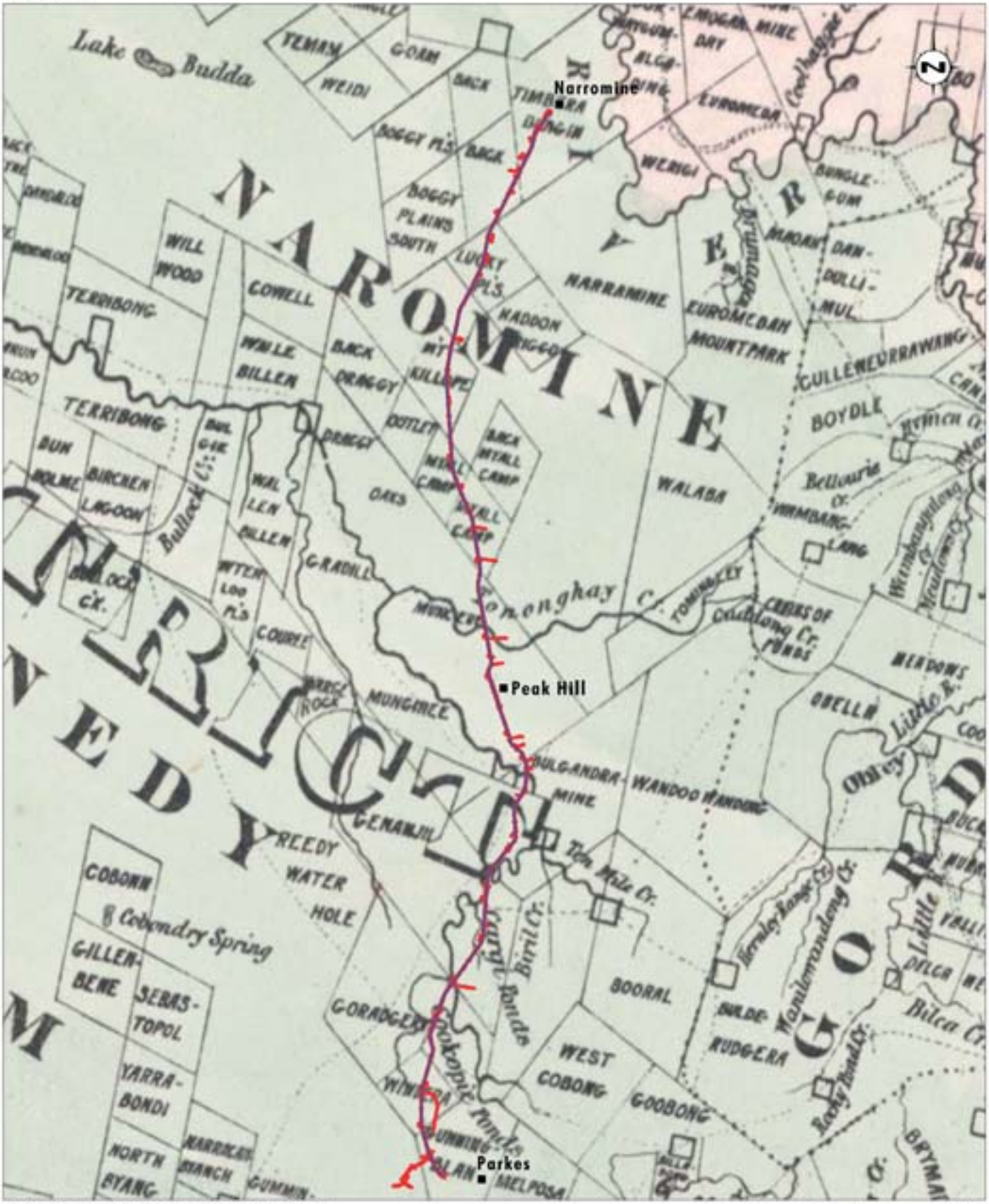


Image Source: National Library of Australia
Data Source: ARTC (2016)

0 5 10 20km
1:500 000

Legend

- Proposal Site
- Parkes to Narromine Rail Alignment
- Town Location

FIGURE 3.1

Detail of Reuss & Browne's 1860s Map of New South Wales

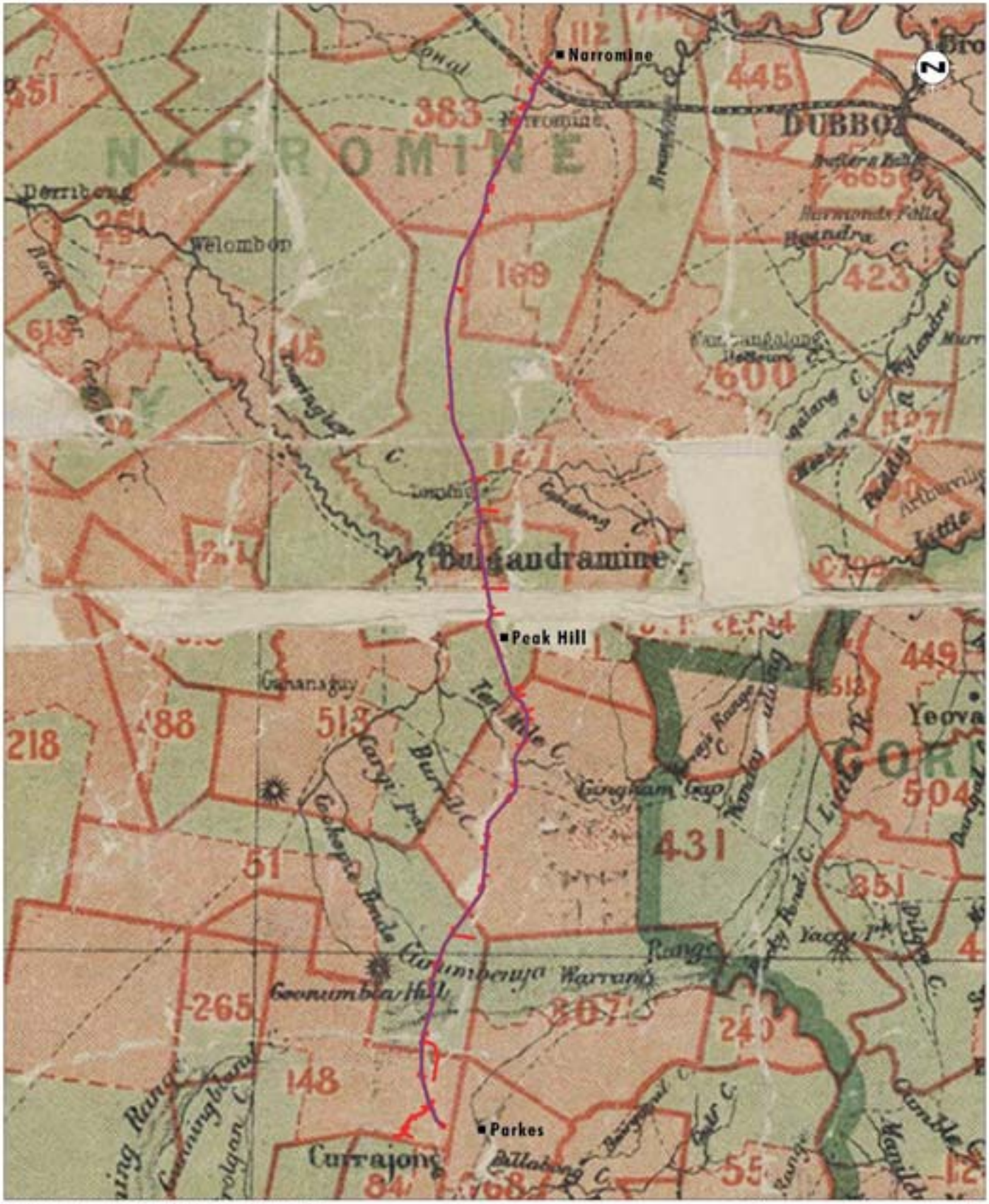


Image Source: National Library of Australia
Data Source: ARTC (2016)

0 5 10 20km
1:500 000

Legend

- Proposal Site
- Parkes to Narromine Rail Alignment
- Town Location

FIGURE 3.2

Detail of Surveyor General's Office 1886 Map of New South Wales

Table 3.1 Pastoral runs formerly located along the Proposal site

Pastoral Holding	Holding Number	Runs	Holder	Leasehold Area	Resumed Area
Narromine	383	Narromine Gum Swamp Bogie Plains South Bogie Plains North	Franks Mack Sydney Austin	28,618 acres	32,983 acres
Bulgandramine	127	Myall Camp North Myall Camp South Mungery East Bulgandramine Tomingley Tomingly North Dinner Gilgies	Robert Newell Gilmour	90,092 acres	79,928 acres
Genanagie	513	Tolma Reedy Waterhole Genanigie Barrabadean	Hon. John Brown Watt William Oswald Gilchrist	73,240 acres	39,974 acres
Bulderudgera	431	Bulderudgera Booral Ten-mile Creek	Australian Joint Stock Bank (leaseholder) Charles Smith McPhillamy (Licensee)	78,731 acres	21,323 acres
Goobang	307	Goobang West Goobang	Australian Mortgage, Land and Finance Company	37,366 acres	33,270 acres
Gunningbland	148	Back Blowclear East Gunningbland Upper Dalhunty Back Milpose Brogan Plains Back	Richard Frederick Horsley	41,670 acres	29,016 acres

3.8 Agricultural Training

As early as the 1820s Australia was being promoted as a land of opportunity for settlers with the publication of books and pamphlets regarding farming and land selection designed to help new emigrants and emancipated convicts with the basics of farming. Stories of successful settlers helped promote NSW as the land of opportunity.

By the late nineteenth century the NSW government began to consider providing formal learning for farmers and other agricultural workers. In 1891 the Agricultural Branch of the Department of Mines and Agriculture was established to be responsible for research, education and advice. The Hawkesbury Agricultural College was opened in April 1896 as a college and model farm to provide technological agricultural education. Experimental farms were established in Moree, Bathurst, Wagga Wagga and Wollongbar to test new and modified varieties of crops, new techniques in irrigation or fertilisation and new farm implements (State Library: Agriculture nd.).

New immigrants to Australia and returning soldiers were two of the largest target groups in the first half of the twentieth century. Following World War I the Commonwealth and State Governments cooperated to initiate programs to enable returned soldiers to settle on their own farms or secure their own homes (under the War Service Homes Act of 1918 and soldier settlement schemes). While most land made available to returning soldiers was former Crown land, some freehold land was purchased by the Crown and then made available to returned soldiers. Blocks secured by returned serviceman from World War I that had been surrendered to the Crown under the Act were known as Settlement Purchase Areas (SPA).

3.9 Wheat Industry

The Australia wheat industry began early in the Colony's life, with Governor Philip establishing a 40 acre government farm at Parramatta in November 1788. The First Fleet brought several types of grain, unsure of what might grow successfully. The harsh soils and lack of farming knowledge of the convicts meant the first crops were unsuccessful. Convict James Ruse requested land to farm near Parramatta and when his crop was successful was granted a 30 acre grant which he named Experiment Farm (State Library: Agriculture). By 1799 there were more than 6,000 acres under cultivation (ABS, 2007).

As settlement around the country grew, especially in Victoria, South Australia and Western Australia, the area of cultivation grew from eight hectares in 1838 to 7,592 hectares by 1844 (ABS, 2007). Irregular wheat exports began in 1845. The AA Co. moved its headquarters to Goonoo Goonoo in the 1840s but retained the bulk of its land; creating a barrier to the small farmers on some of the best wheat growing land (Heritage Office 1996: 81).

The land between the Liverpool Range and Piligra Scrub, running west out to Dubbo consisted of fertile, well-watered land. As such selection of land in the wider area became popular after 1861, even more so after the 1884 Land Act which broke the squatters' hold on the land (Heritage Office 1996: 82).

In 1865 the first crop of wheat was successfully grown in the Parkes area approximately 3.5 kilometres north of Parkes. It was reported that Mr Cooke

> *...storekeeper at Currajong had obtained a few bushels of 'White Lammas' wheat and made a share agreement with Joseph Harris who owned a small block of land, to sow two acres of wheat, the former supplying the seed and half the expenses, the latter to supply the land and labour. The crop yielded well, about 70 bushels being harvested from two acres, and this was transported to the nearest flour mill, Daltons Brothers at Orange. The wheat yielded five pounds more flour per bushel than wheat grown in the colder Orange district (Parkes Shire Council nd).*

Harry Henry Cooke came to the area in the early to mid 1860s with the opening of the goldmines at Currajong. Having established himself in business he stayed on despite the decline in the reef mining by 1866. Cooke owned the Trelowarren mine which was alongside and to the south of his home and business premises. He became postmaster at Currajong in 1868 and from 1871 operated a bakery at Currajong; delivering to miners both morning and evening. In 1873 Cooke founded the Parkes and Forbes Gazette and became the first mayor of Parkes (Parkes Shire Council nd).

The growth of the wheat industry was improved by the gold rush and the later construction of the inland railways (State Library: Australian Wheat nd.). The invention of machinery such as the scrub roller and the header harvester allowed for the clearing and preparation of large tracts of land, as well as harvesting large areas of crops. Research also improved the industry with wheat varieties more suitable to Australia's environment, mechanical harvesting and more disease resistance crops. In the late 1880s William Farrer bred numerous new wheat varieties, including a drought and disease resistant variety named 'Federation'.

By the early twentieth century experimentation by William Farrar with new varieties of wheat resulted in hardier, pest and rust resistant crops (SLNSW 2013). After arriving in Australia in 1870 Farrer became a tutor at George Campbell's sheep station, Duntroon. Unable to financially buy a pastoral property he qualified as a surveyor in July 1875 and until 1886 worked in the Dubbo, Nyngan, Cobar and Cooma districts with the Department of Lands. Farrer soon focused his interests on wheat-growing believing that the wheat industry's problems were based on the unsuitability of the types sown to Australian conditions. In 1886 he first tried cross-breeding to improve wheat in Australia; at the time cross-breeding was only being attempted in Europe and America. In 1898 he was appointed as wheat experimentalist to the Department of Agriculture. Farrar's Federation variety became the most widely grown of his wheats. Its rapid spread was '*the result of sheer ability to yield well, despite an unattractive appearance in the field*'. Although Federation compromised his wish never to release any wheat that was not of top grain quality, it did fulfil his aim to produce a wheat with a short, strong straw suited to Australian methods of harvesting. From 1910 to 1925 Federation was the leading variety for the whole continent. In 1914 twenty two of the twenty nine varieties of wheat being grown across the pastoral districts of NSW were Farrer wheats. His wheats were largely responsible for the extension of wheat-growing into drier or rust-prone districts, while in established areas yields and quality were improved. This resulted in a four-fold increase for the NSW between 1897 and 1915 (Wrigley 1981).

The 1884 Land Act encouraged smaller leases of mixed farming and the 1895 Homestead Selection Act encouraged wheat cultivation. This caused a shift in production to wheat, wool and lambs; which was also later boosted by the railway. While the 1884 Land Act began the reduction of the huge pastoral stations, the resumptions policy of 1895 meant that grants of 10,000 acres replaced the stations of hundreds of thousands of acres. This subdivision turned may leases into wheat-sheep farms, which cover the centre and east of the region (Heritage Office 1996: 82). Soldier settlement after the World War I and private subdivision of land allowed wheat to become a key crop. Early subdivisions were often as small as 200 acres, however twentieth century technological innovations meant that wheat-sheep farms could now be up to 20,000 acres (Heritage Office 1996: 84).

Bulk handling was first phased in during the 1920s and meant that wheat grain did not need to be bagged before being stored and shipped, leading to substantial savings of time and money as well as protection from pests (ABS, 2007). In NSW bulk handling used vertical concrete and steel silos, which had high operating costs during lean years and could not handle large crops of exceptional years. The first country grain silo to be completed in NSW was at Peak Hill in 1918, however drought meant it was not filled until an exceptional crop in 1920 (NSW silos, nd.).

In 1915 the Government established a wheat pooling scheme, administered by the Australian Wheat Board (AWB), to assist growers and ensure supply during World War I (ABS 2007). Under the scheme returns from all the crops was pooled and shared fairly among all growers. The AWB ceased operation in 1921, however small regional schemes continued, usually managed by farmer cooperatives. The AWB was established as a statutory authority at the beginning of World War II to handle all matters concerned with wheat disposal during the War. Legislation was passed in 1948 to establish the board during peace time, and it continued until 1999 (ABS, 2007). With the increase in farm mechanization following World War II and the new hardy varieties available wheat become Australia's single most valuable agricultural product.

By 1933 over one-third of the region around Parkes was cleared for agriculture. The area under wheat cultivation fluctuated between 84,000 and 120,000 hectares in the 1930s, with yields between 20 and 23 bushels per acre being grown. The increase in wheat cultivation led to more clearing being undertaken, often by Chinese ring-barkers. Wheat-sheep farms gradually declined in number because of increased acreage turned to wheat cultivation. Wheat growing, in turn, led to the development of flourmills. By the 1870s many towns had their own mills, with approximately 500 mills producing flour across Australia. The small steam-mills that had been present since the mid-nineteenth century in the region were replaced in the 1890s and early 1900s with machine mills at Forbes, Parkes and Condobolin. Flour exports were an important part of the wheat industry until around the 1930s. After World War II, many of Australia's export partners began setting up their own flour industries and demand for the Australian flour decreased.

3.10 Urban development

Urban development prior to 1850 was limited due to a sparse and poor population. While small villages grew up, travellers recount that the remote country was covered by numerous isolated inns, some of which grew into towns, while others ceased operation and collapsed into ruins (Heritage Office 1996: 81). The Australian writer Henry Lawson described the towns along the rail line as 'consisting of a public house and a general store, with a square tank and a school- house on piles' (Heritage Office 1996: 80).

Settlement and growth came to the region in the later part of the nineteenth century. The towns of Parkes and Peak Hill were created and grew as a result of the 1870s discovery of gold. Mines at Currajong, immediately north of Parkes, opened in 1863 and 1864, however by 1867 were replaced by orchards and vineyards (Heritage Office, 1996: 101). Gold was discovered around Tomingley in the mid 1880s and at Peak Hill in 1889. A town promptly appeared where previously only sheep runs were present. Ten thousand miners arrived by 1890 and five mines were opened (Heritage Office, 1996: 102).

The construction of an inland railway was a very significant development in the late nineteenth century leading to the establishment and survival of villages and towns (refer to **Figure 1.2**). The prosperity and growth of villages and towns depended on whether a rail line linked the settlement with the wider NSW.

3.10.1 Parkes

As discussed in **Section 3.5** Parkes was originally known as Currajong and Bushmans. Henry Parkes visited the township on 19 August 1873; his visit marking a turning point in the history of the town. Shortly after his visit local politicians like Henry Harry Cooke petitioned to have the name of the town changed from Bushmans to Parkes. As mines developed on the outskirts of the town and people and business moved into the town centre, Bushmans was officially renamed Parkes on 1 December 1873 (Butel and Thompson 2008:209).

A Court of Petty Sessions had been established in the town as early as 1864. This court was abolished in 1865 and re-established in 1872. The Parkes Courthouse was designed by the Colonial Architect James Barnet in 1875 (OEH Parkes Courthouse Listing Sheet nd.). The Police Station Offices building was also originally designed by the Colonial Architect in 1884 for use as a Residence and Police Station (OEH Parkes Police Station Offices Listing Sheet nd.).

The 1894 Town Map of Parkes illustrates the size of Parkes in the late nineteenth century (refer to **Plate 3.4**)**.** The rail line and station were constructed to the south of the Town Map shown in **Plate 3.5**.

Plate 3.4

1894 Town Map of Parkes

3.10.2 Goonumbla

Limestone Plains was the name of George and John Palmers pastoral property in 1866. The town was located approximately 2.5 kilometres from the railway station which opened as Limestone Plains in 1914 and was renamed Goonumbla in 1915.

Goonumbla was proclaimed a village on 5th May 1916. A provisional school operated in the village from September 1905 to June 1910 and a Public School from July 1910 to March 1949 (NSW Department of Education and Communities). When the school closed in 1949 the pupils went by bus to the Coradgery school further down the road. Coradgery had a provisional school from May 1933 to November 1957 and a public school from November 1957 to December 1967 (NSW Department of Education and Communities). Goonumbla post office opened February 1916 (Forsyth 2002:84).The census of 1933 indicates the population of Goonumbla was 225. The census also indicates that fossicking was still being undertaken at all of the mine workings in the area at that time.

Plate 3.5

Detail of 1913 Parish Map of Limestone

Map shows the former village of Goonumbla with the rail line and station on the east side of the former village

3.10.3 Alectown West

Alectown West area was first named Alec's Flat after the original prospectors in the area; Alexander Whitelaw, Alexander Cameron and Alexander Patton. The town of Alectown is located approximately 6 kilometres east of the rail line and Alectown West railway station. A school opened in Alectown in1890 and closed in 1974 (the year passenger rail service to Alectown West station discontinued). In 1889 a post office opened at Alec's Flat but changed its name to Alectown in 1891 (Forsyth 2002:8).

3.10.4 Mickibri

A school opened at Mickibri as Burril School in March 1916, changed its name to Mickibri in May 1916 and closed in October 1920 (Forsyth 2002:137).

3.10.5 Trewilga

A school opened at Trewilga named Mingelo in January 1892, it changed its name to Trewilga in October 1912 and closed July 1951. A post office opened there as Menello in June 1889, was renamed Mingelo in August 1891 and then changed to Trewilga in January 1913. The post office closed on 31 December 1976 following the discontinuation of the rail service to Trewilga Station (Forsyth 2002:243).

3.10.6 Peak Hill

As discussed Peak Hill developed as a town in 1889 when gold was discovered in the area and two open-cut goldmines were established. The name Peak Hill appears to be that of a prominent hill in an otherwise flat landscape. The town is located on the land holding of J Gilmore. In 1888 gold mining leases were taken out by 'Messrs' Bland, Batten, Stapleton, Eagley and Willoughby in the area (Forsyth 2002:72). A Court of Petty Sessions was established in Peak Hill in 1890 and a school opened the same year. The first courthouse was a wooden structure which was used between 1890 and 1898 before the current brick courthouse, designed by Colonial Architect Walter Liberty Vernon, was built in 1898. A post office was also opened in 1889. A police service was also provided at the end of the nineteenth century with the Lockup and police office also being designed by Vernon in 1898 (OEH Peak Hill Courthouse Listing Sheet nd.). Peak Hill was incorporated as a municipality in 1894 and the railway arrived in 1910 (refer to **Plate 3.6**). The economic activity of the gold mining town drew people, as well as the miners, to take up land and agricultural enterprises were subsequently established. In 1918 Peak Hill became the site of the first public upright grain silo constructed in NSW (refer to **Section 3.12**).

Plate 3.6

1909 Town Map of Peak Hill.

The rail line is shown along the west side of the town

3.10.7 Tomingley West

A school opened in Tomingley West in January 1921 and closed in 1951. In 1928 a post office opened but closed in 1952 (Forsyth 2002:234).

3.10.8 Wyanga

A school opened in Wyanga in January 1919 and closed in February 1941. A post office opened in May 1915 and closed July 1973 (Forsyth 2002:360-361).

3.10.9 Narwonah

A school opened at Narwonah in August 1914 called Craiglea but closed May 1916. In November 1900 a post office opened as Craig Lea, changed its name to Ingalba in 1905 and closed in 1910 (Forsyth 2002:15).

3.10.10 Narromine

In 1835 William Charles Wentworth and Captain Raine are thought to have settled on 'Narromine Station', with other settlers following soon after. The Village of Timbrebongie was established on the Macquarie River approximately 10 kilometres north of the location of present day Narromine (refer to **Plate 3.7**). Timbrebongie was an important crossing place over the Macquarie River by coaches from Bathurst and Dubbo to Bourke, via Warren and by 1866 the Timbreabungy Hotel was open.

In 1879 William O'Neill is reported to have opened a hotel on the site of what became Narromine Village on the south side of the Macquarie River. O'Neill became the first person to grow wheat for grain in Narromine in 1880. In 1883 Narromine Railway Station was opened as the rail line was extended through the area and the first school also opened that year. The Village of Narromine was laid out in 1883 with the first auction for town allotments held in 1884. In 1885 the Village of Narromine was proclaimed (refer to **Plate 3.8**). The first police station was established in 1890 and Narromine Municipal Council formed in 1898. Colonial Architect Vernon designed the current police station as a Lockup Keeper's Residence in 1908 (Macquarie Regional Library nd).

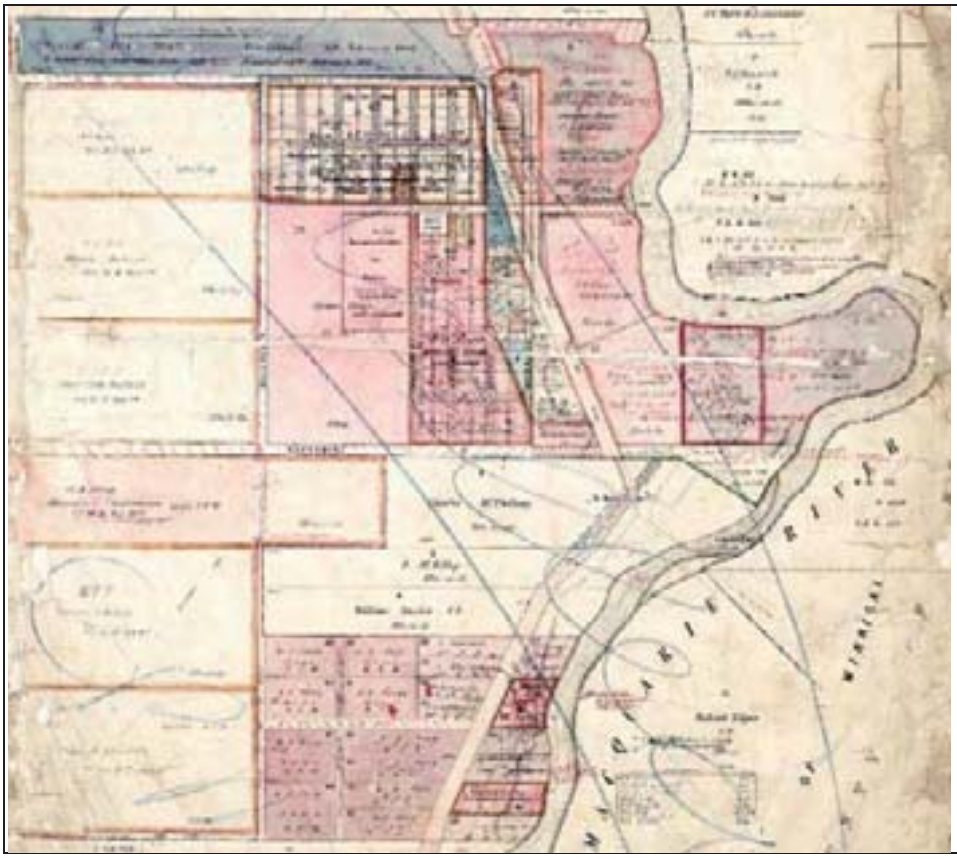


Plate 3.7

1882 Town Map of the former village of Timbrebongie

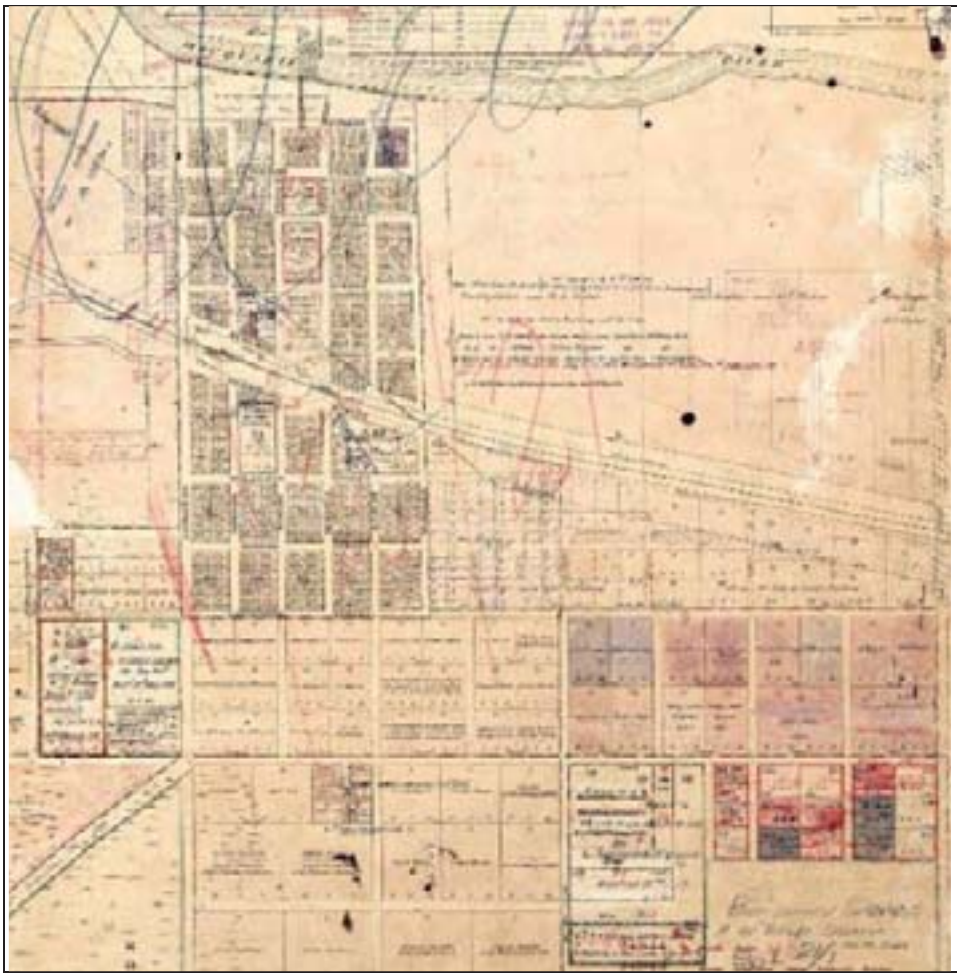


Plate 3.8

1900 Town Map of Narromine

The rail line runs through the centre of the town

3.11 Railway

Although the first steam railway between Sydney and Parramatta opened in 1855, the extension west was delayed with the engineering issues presented by the Blue Mountains. Bathurst and Orange were finally reached by rail in the 1870s and the extension of the line to Molong served as the railhead for Parkes and the western districts until the 1890s.

The railways in NSW were built to 2 main standards: main line and branch line / Pioneer Lines. In the period 1910 to 1930 a large number of branch railway lines were constructed through western and north western NSW with the aim of establishing access to wheat growing areas and also reaching the edge of the productive wool growing areas. These branch lines were known as Pioneer Lines (refer to **Section 3.11.1**) which had a cheaper railway construction method than the main rail lines. While larger towns were established independent of (and not dependant on) the railway (Dubbo), urban centres were established as the railway extended through the Darling Plains region (Moree and Narrabri) and smaller towns were created specifically by the arrival of the railway (Bellata) (Heritage Office 1996:80-87). The development of the railway through the region enabled the bulk transportation of wheat and was a major factor in encouraging agricultural expansion through the district as it reduced or eliminated 'the long and costly haul by slow horse transport to distant railheads' (Tindall 1982:28). The railway runs through the heart of the NSW wheat belt.

3.11.1 Pioneer Lines

The economic depression of 1889 to 1894 dramatically slowed railway construction in NSW and when expansion of the rail system resumed, it was under a new era of austerity. The most dramatic feature of the change was the advent of the Pioneer Line. These lines were an innovation that represented a shift away from British railway practices to those used in the United States.

Freight rail traffic was considered to be seasonal and not justify the expense of not being utilised for much of the year. In 1894, Chief Railway Commissioner Edward Eddy and Henry Deane, the Engineer-in-Chief for Railway Construction, considered the options available for the construction of branch railway lines. Deane visited North America and Europe to investigate cheaper methods of railway construction. Practices in the USA particularly interested him because of the similar conditions there. Deane noted that it was common to construct lines initially without using ballast. Ballast could be added later as an improvement when the rail line had earned sufficient profits to warrant the added expense. Deane subsequently recommended that the American practices, including limited earth works, a reduced number of sleepers, light rails, the absence of ballast and a 20mph speed limit, were subsequently adopted in NSW (Fraser 2015:54-57, McKillop 2009:46).

The routes (known as Pioneer Lines primarily to serve agricultural areas) were selected to be located where possible beside or between the major inland rivers to minimise the need for construction of expensive bridges. The rail lines were constructed using light rails and low-quality sleepers with no ballast. Rail traffic was kept at a minimum except for the heavy seasonal demand dictated by the agricultural and pastoral industries. Train speeds were initially restricted to 15 miles per hour; which while being acceptable for goods trains was suitable for passenger trains who expected similar speeds to those on the main lines. As a result upgrade works commenced a few years after construction to increase the speed of trains to 30 miles per hour. Railway buildings were austere and of timber construction with station buildings being little more than sheds with minimal public facilities. Any bridges were to be simple short-span timber girder bridges as the cheapest way of water crossing. Deane and his engineers redesigned the timber girder bridge which contributed to the low costs of the Pioneer Lines. The new design changed John Whitton's timber girder bridge design (which had ballasted track supported by deck planks resting on four timber girders) to have an open deck or transom-top (a transom comprises timber laid across girders to attaché rails)eliminating the need for heavy ballast and allowed only three timber girders to be used (Fraser 2015:54-57, McKillop 2009:46). The inexpensive Pioneer Lines were upgraded if they proved to be profitable. The continued success of wheat growing ensured that most of the rail lines were upgraded.

The first Pioneer Lines were completed to Berrigan and Bogan Gate in 1896; essentially to support the wheat industry. The Pioneer Line from Jerilderie to Berrigan (a distance of 34.8 kilometres), opened on 14 October 1896 at a cost of £2036 per mile (McKillop 2009:46).

3.11.2 Parkes to Narromine Railway Line

The Parkes to Narromine line is currently a redundant rail line located between the Main Western line and the Broken Hill line. The rail line from Narromine to Peak Hill opened 12 December 1910 as a single track. The contract for its construction was awarded to G. C. Murdock on 5 May 1909. Rail passenger service discontinued 13 October 1974 (Forsyth 2002:72). The extension of the line from Parkes to Peak Hill opened on 30 September 1914 as a single track. Construction of the track was undertaken by the Public Works Department and commenced on 7 May 1912. The '*Instructions to Station Masters, Guards, Drivers, and all other concerned*' included the following details about the line:

> *This line is unfenced, therefore Drivers must keep a sharp look-out for live stock that may be straying...It is classed as a 'Pioneer' line, and the maximum speed of trains and light engines must not exceed 20 miles per hour during daylight, and 15 miles per hour during dark...(New South Wales Railways Circular No. 251)*

Telephone connections were provided at Parkes, Limestone Plains (Goonumbla), Alectown West, Trewilga and Peak Hill. Specific limits were set on loads and the number of vehicles that could be hauled. **Table 3.2** indicates the existing rail line proposed to be upgraded by ARTC as part of the proposal and the dates the lines opened.

Table 3.2 Parkes to Narromine Line

Rail Line	Extent	Date Opened
Parkes to Narromine	Goobang Junction to Peak Hill	1914
	Peak Hill to Narromine	1910

Table 3.3 indicates the stations opened along the Parkes to Narromine rail line and the dates the stations opened and closed (refer to **Figure 3.3**). Details of the stations and associated facilities are discussed in **Table 3.4**.

Table 3.3 Parkes to Narromine Stations

Station	Main Facility	Distance from Sydney (km)	Dates
Goobang Junction	Junction – in use	448.300	In use
Nanardine	Station - closed	457.900	1914 - 1976
Goonumbla	Station -closed	465.600	1914 – 1976
Alectown West	Station - closed	473.600	1914 - 1974
Mickibri	Station - closed	482.362	1914 - 1974
Trewilga	Station - closed	490.916	1914 - 1974
Peak Hill	Station - closed	498.400	1910 - ?
Myaroo – loop only	Loop - closed	513.860	1941 - 1976
Tomingley West	Station - closed	516.100	1910 - 1976
Wyanga	Station - closed	528.990	1910 - 1974
Fairview	Station - closed	539.200	1923 - 1974
Narwonah	Station - closed	547.050	1910 - 1974
Narromine	Station - closed	497.554	1883 - ?

Information sourced from NSW silos nd, NSW rail nd and Forsyth 2002.

Image Source: Google Earth (2013)
Data Source: Geoscience Australia (2009), Parsons Brinckerhoff (2014)

0 5 10 20 km
1:500 000

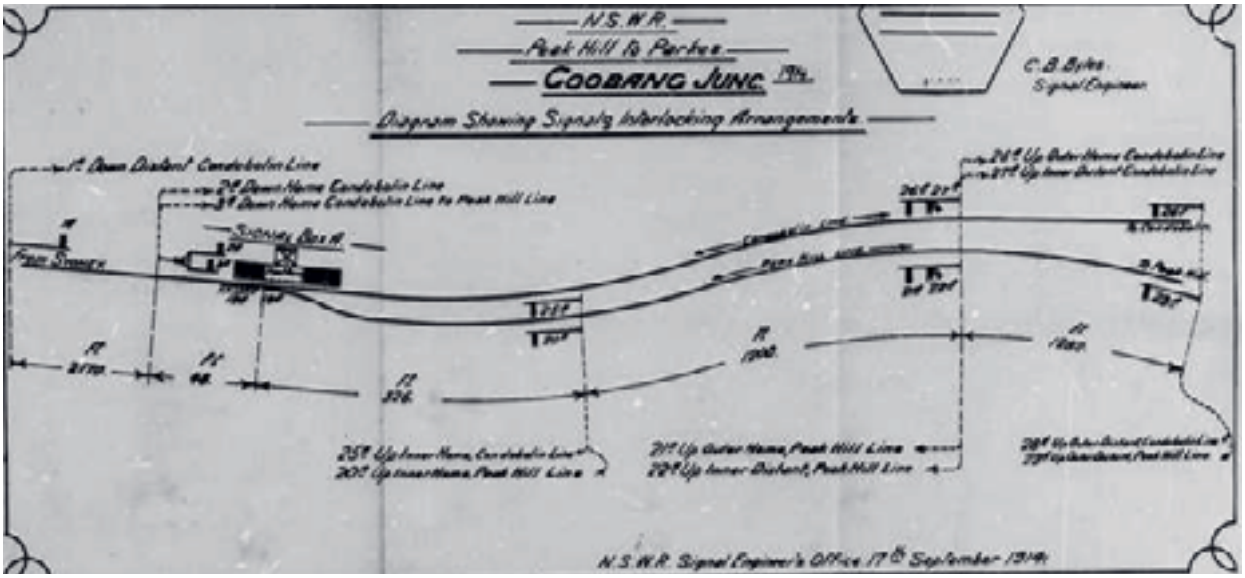
Legend

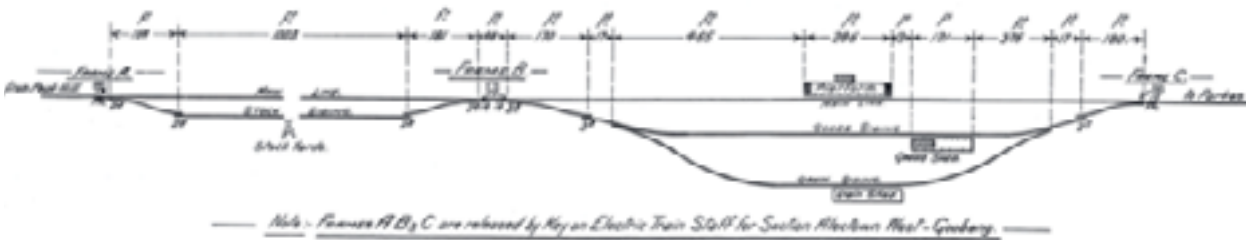
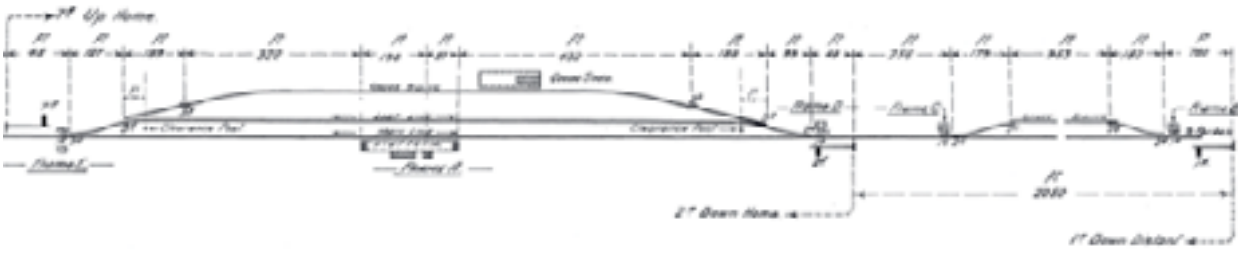
- Proposal Site
- Local Government Area
- Railway Station

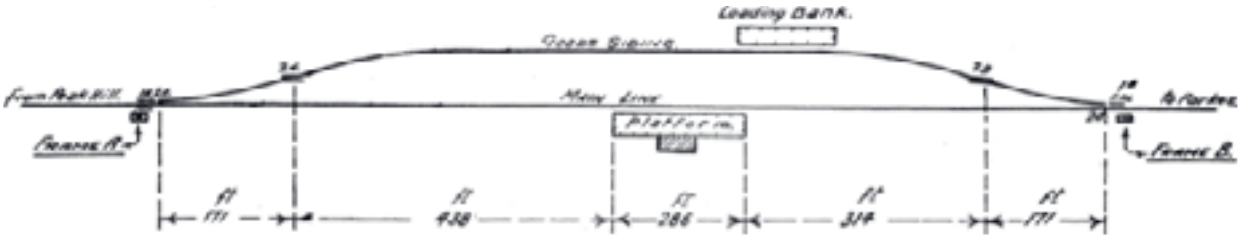
FIGURE 3.3

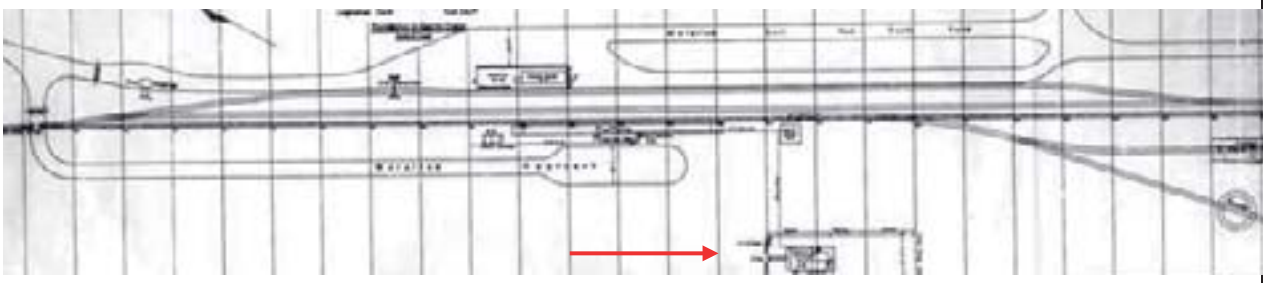
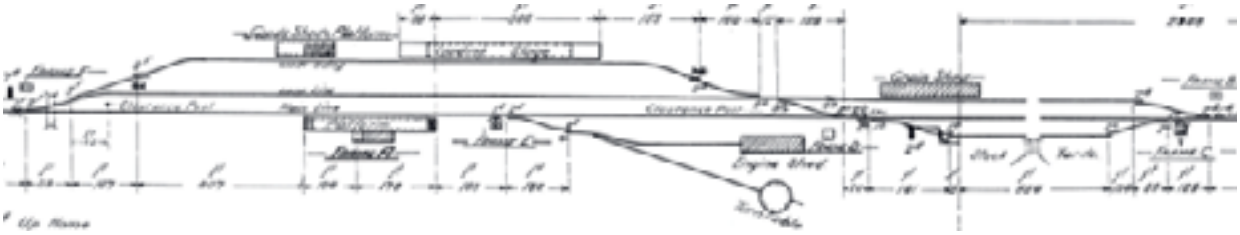
Parkes to Narromine Route Railway Station Locations

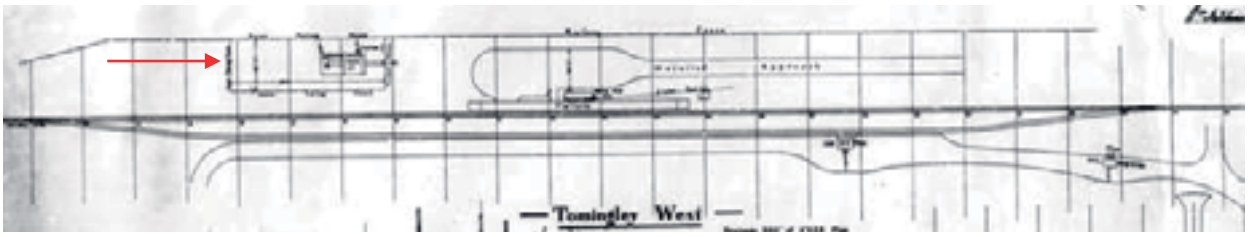
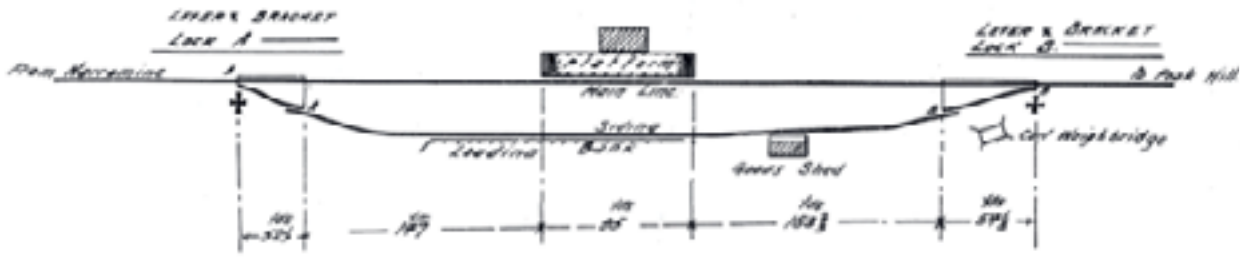
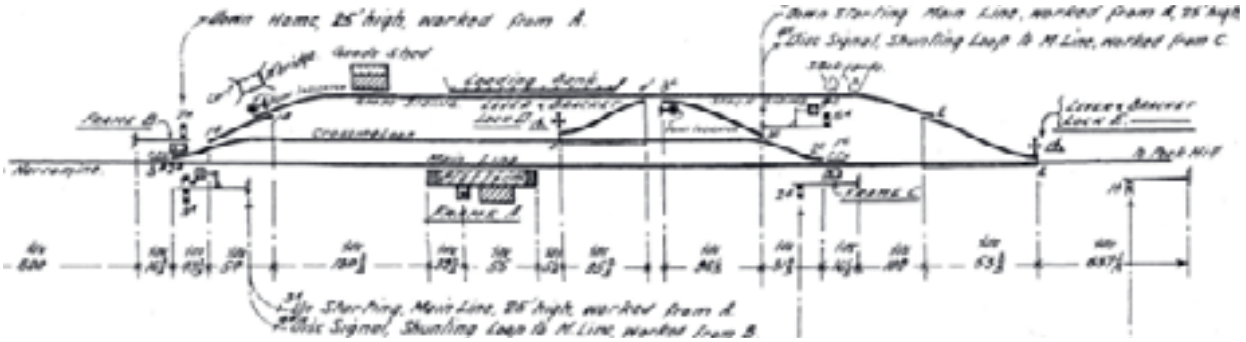
Table 3.4 Parkes to Narromine Railway Stations

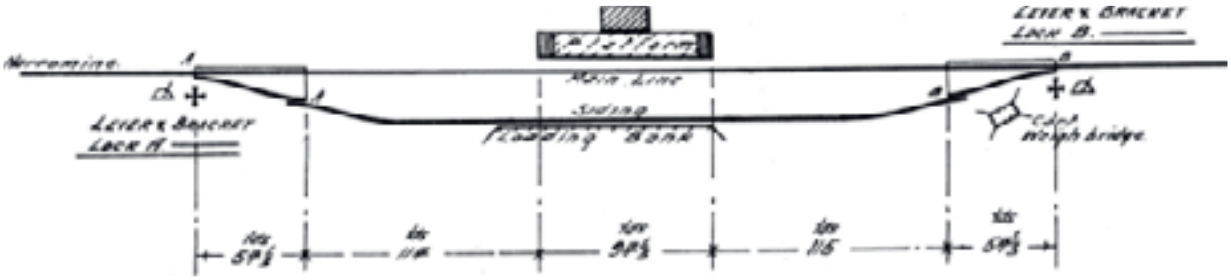
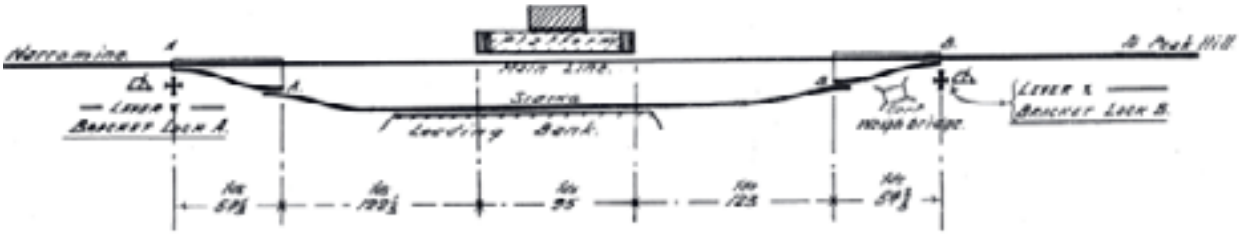
Station	Discussion
Goobang Junction	Goobang Junction is located immediately north of Parkes and until recently was considered to form part of Parkes Station. It has always been a junction and is still in use.
1914 plan of Goobang Junction 	
Nanardine	Nanardine Station opened 30 September 1914 and closed 5 June 1976. Platform constructed on the down side (west side) of the line with a standard station building and toilet. A goods siding was located on the up side (east side) of the line with a goods shed. In January 1916 a cart weighbridge was installed. In 1942 a crossing loop was constructed. In May 1956 the goods siding and loading bank closed.
1914 plan of Nanardine Station 	

Station	Discussion
Goonumbla	Goonumbla Station opened as Limestone Plains 30 September 1914. Renamed Goonumbla 1 June 1915. The station closed 26 April 1976. Platform (28 metres long) constructed on the up side (east side) of the line and a goods and stock siding on the down side (west side) of the line. The station had a standard (station building constructed of concrete units, a toilet, an officer's residence, a 18.20 by 4.80 metre good shed, a loading bank, cattle and sheep races, a grain shed and a grain silo. Although not shown on the plan a station officer's house was built on the east side of the rail line against the boundary of the rail corridor. In January 1918 a 152 metre by 12.10 metre wheat storage site was established. In August 1918 a siding was added for the removal of wheat. In 1930 the concrete grain silos were added.
1914 plan of Limestone Plains Station 	
Alectown West	Alectown West Station opened 30 September 1914. Rail passenger, parcel and goods service discontinued 23 November 1974. Timber platform constructed on the down side (west side) of the line and a loop, goods and stock siding on the up side (east side) of the line. A timber station building was constructed by the Public Works Department with only a waiting room. A second building is reported to have 4 rooms. The station also had a 5 tonne yard crane, a 20 tonne road weighbridge, a 18.2 by 4.8 metre standard G3 goods shed, a standard J3 Station Master's residence. A loading bank, sheep races and a 381 metre crossing loop. In 1930 a grain silo was constructed and in 1959 a wheat depot was added with a capacity of 9259 tonnes.
1914 plan of Alectown West Station 	

Station	Discussion
Mickibri	Mickibri Station opened 30 September 1914 and closed 23 November 1974. Rail passenger service discontinued 23 November 1974. Platform and station building constructed on the down side (west side) of the line and a goods siding on the up side (east side) of the line. There was a goods yard containing a 20 tonne road weighbridge, a loading bank, wheat silo, a small goods shed, sheep races, and a 522 metre long goods loop on the up side (east side of line). In 1933 a concrete grain silo was constructed. In 1968 a wheat depot was added with a total capacity of 30,250 tonnes.
1914 plan of Mickibri Station  	
Trewilga	Trewigla Station opened 30 September 1914 and closed 23 November 1974. Rail passenger service discontinued 23 November 1974. The construction name for Trewilga Station was Mingelo West. Platform constructed on the down side (west side) of the line and a goods siding on the up side (east side) of the line. A number of standard station buildings were constructed including A3 station buildings, C1 toilets and G2 goods shed. In 1971 the goods siding was removed.
1914 plan of Trewilga Staion  	
Peak Hill	Peak Hill Station opened 12 December 1910. The station had a platform and station building on the down side (west) of the line and a grain siding with platform, goods shed and grain shed on the up side (east) (see plans below). An engine shed and turntable were also added on the west side of the line. In 1909 there was also a standard J.2. Station Officer's House constructed on the west boundary of the rail corridor (refer to 1909 plan below – marked with red arrow). In 1911 a rest house was constructed. In 1915 its engine shed was transferred to Tullamore by the Public Works Department. In 1915 a wheat stacking site was provided and in 1918 the grain silo was constructed (refer to **Section 3.12**). In 1941 a 90 kl double tier tank and a 304 millimetre bore water column were installed for defence work. In 1956 the turntable siding was removed. In 1979 the stock siding was removed and in 1982 the goods shed was demolished.

Station	Discussion
1909 plan of Peak Hill Station 	
1914 plan of Peak Hill Station 	
Myaroo – loop only	Myaroo was a crossing loop 519 metres long opened on the down side (west) of the line 2 June 1941 with two telephone and signals.
1941 plan of Myaroo Loop 	
Tomingley West	Tomingley West Station opened 12 December 1910 and closed 26 April 1976. Rail passenger service discontinued 13 October 1974. The station had a platform and station building (waiting shed) on the up side (east) of the line and a grain siding with loading bank, goods shed and cart weighbridge on down side (west) (see plans below). In 1909 there was also a standard J.1 Station Officer's House constructed on the east boundary of the rail corridor (refer to 1909 plan below – marked with red arrow). In 1920 a wheat stacking site was provided which by 1926 allowed for 100,000 bags of wheat. In 1930 a grain silo was constructed and in 1969 a wheat depot added at the station.

Station	Discussion
1909 plan of Tomingley West Station 	
1914 plan of Tomingley West Station 	
Wyanga Opened as Washington. Renamed Wyanga 1911.	Wyanga Station opened as Washington Station on 12 December 1910. It was renamed Wyanga 1 March 1911 and closed 23 November 1974. Rail passenger service discontinued 13 October 1974. The station had a platform and station building (waiting shed) on the down side (west) of the line and a crossing loop, grain and goods siding with loading bank, goods shed, cart weighbridge and stockyards on up side (east) (see plans below). In 1910 a wheat stacking site was provided. In 1914 the station office was damaged by fire. In 1929 a grain silo was constructed followed in 1951 by a wheat bulkhead. An additional wheat bulkhead was constructed in 1964.
1914 plan of Wyanga Station 	
Fairview	Fairview Station opened on 12 December 1910 and closed 23 November 1974. The station had a platform (15 metres long) and station building (timber waiting shed) on the up side (east) of the line and a goods/grain siding with loading bank and cart weighbridge on down side (west) (see plan below). In 1920 a wheat stacking site was provided. In 1973 the goods siding closed.

Station	Discussion
1914 plan of Fairview Station 	
Narwonah	Narwonah Station opened on 12 December 1910 and closed 23 November 1974. Rail passenger service discontinued 13 October 1974. The station had a platform and station building (waiting shed) on the up side (east) of the line and a goods/grain siding with loading bank and cart weighbridge on down side (west) (see plan below). In 1920 a wheat stacking site was provided. In 1956 the length of the platform was increased to 30.48 metres at the Parkes end. In 1966 a wheat depot opened.
Undated Plan of Narwonah Station 	
Narromine	Narromine Station opened as Narramine Station on 20 October 1882. It was renamed Narromine 1 October 1889. Narromine Station is located over 1 kilometre northeast of northern limit of proposal site. As such it is not considered in detail in this report.

Information in Table 3.4 provided by the Australian Railway Historical Society, Railway Resource Centre

3.12 Grain Silos and Sidings

The first country silo constructed in NSW was at Peak Hill. Although other silos were under construction at the same time, Peak Hill was the first silo to begin operating in 1918. Little wheat was delivered to the silo until 1920 as the previous two years were very dry with only 12 to 14 inches of rain recorded (NSW silos nd). An article from The Sydney Mail August 14 1918 reports:

> *A satisfactory trial was recently made at Peak Hill (writes our correspondent) of the first of the completed silos for the bulk handling of wheat. Many farmers were present from the neighbouring districts, as well as from distant parts of the state and from Victoria, to witness the demonstration. Two truckloads of wheat were brought up for the test, and about a dozen wheat lumpers were instructed to take the bags from the trucks, cut them open, and empty the contents into what is called the receiving grating of the elevator leg. The machinery was driven by a Ronaldson oil engine. It soon became apparent that although the men were going as fast as they could possibly go, the receiving grating, was eating up the wheat faster than they could put it in, notwithstanding that the*

engine was only going at a medium rate of speed. A number of farmers then took a hand at opening the bags with pocket-knives. The truck of 200 bags was put through in 18 minutes, at a rate of about 2000 bushels an hour. It is estimated with a greater engine speed, 2300 bushels per hour could be handled. The elevator leg mentioned is part of the machinery to be installed in the future, when the grain will be received in bulk and emptied direct into the leg grating. It will also be necessary, one day to load grain in bulk from the silo to the trucks, and with a leg of this capacity, four trucks per hour, will be easily loaded (NSW silos, nd.).

Although railway stations along the rail line between Parkes and Narromine were opened progressively from 1910 (refer to **Table 3.3**) grain silos were generally not constructed until the late 1920s and early 1930s. Until the silos were constructed, wheat was loaded direct from the farmers' wagons or bagged and stored at the station (refer to **Plate 3.9**). By the 1920s wheat stacking sites were provided at many of the stations (refer to **Table 3.4**). Loading direct from the farmers' wagons was first used at the Goonumbla siding:

Mr. W. E. Tayler, of Adavale, Parkes, writes, describing the wheat-loading method now being used at Goonumbla siding, where there are no silos...16-ton bulk trucks, he says, are being loaded daily direct from the farmers' wagons, and despatched to the terminal silo. "The process is simple in the extreme. Wagons are drawn on to the dump alongside the trucks, bags are put on to a plank that runs across the truck, opened, and emptied in, and the empty bags thrown back on to the wagon to be weighed with it to arrive at the correct tare, thus giving the exact net weight of the wheat put into the trucks.

Mr. Tayler adds that it is estimated that instead of about 80,000 bags of wheat being stacked at Goonumbla, which would be the case without bulk trucking, if the supply of trucks is kept up, no more than 20,000 bags will have to be stacked (SMH Wednesday 14 December 1921: from NSW silos, nd.).

However, there was soon dissatisfaction at the methods of handling wheat at railway stations without silos:

Complaints are still being made that the bulk handling of the wheat, both at the silos and in the allocation "of bulk trucks for non silo sidings, is not being conducted efficiently. Mr. T. I. Campbell, secretary of the Farmers and Settlers' Association, stated yesterday.....

Corroborating and supplementing some of those complaints, Mr. George Tanswoll, a well-known wheat-grower and grazer, of Coradgory, referred Io the experience at Goonumbla siding, on the Parks-Peak Hill line. It was at Goonumbla that the first experiments in transferring farmers' wheat into bulk trucks were conducted, and from that time onwards local growers have been in the forefront in suggesting Improvements.

Mr. Tanswoll said that wheat farmers had on several occasions been given to understand that trucks would be available at all sidings where there were no silos. In spite of this insurance there had been no bulk trucks at Goonumbla for three or four weeks. During that time bulk trucks had passed Goonumbla to load up at Peak Hill silos (SMH Tuesday 20 January 1925: NSW silos, nd.).

The lack of available trains at stations like Goonumbla led to wheat being carted to Parkes which resulted in additional costs for the farmer. Wheat was alternatively being left out on the property which also resulted in heavy losses.

Plate 3.9

1940 photograph of bagged wheat being loaded onto rail wagons at Trewilga

Once the silos were built the typical layout of a station with a grain siding would be the main line with a grain siding, grain silos (for example the 2400 tonnes capacity silos at Goonumbla built in 1930), a bulkhead, grain shed, goods shed, weigh bridge, passenger station building (waiting shed) and station officer's (SO) house. Refer to **Plate 3.10** for a detail of Goonumbla Station in 1917 before the grain silos were built. The silos at Goonumbla were constructed in the location of the grain shed.

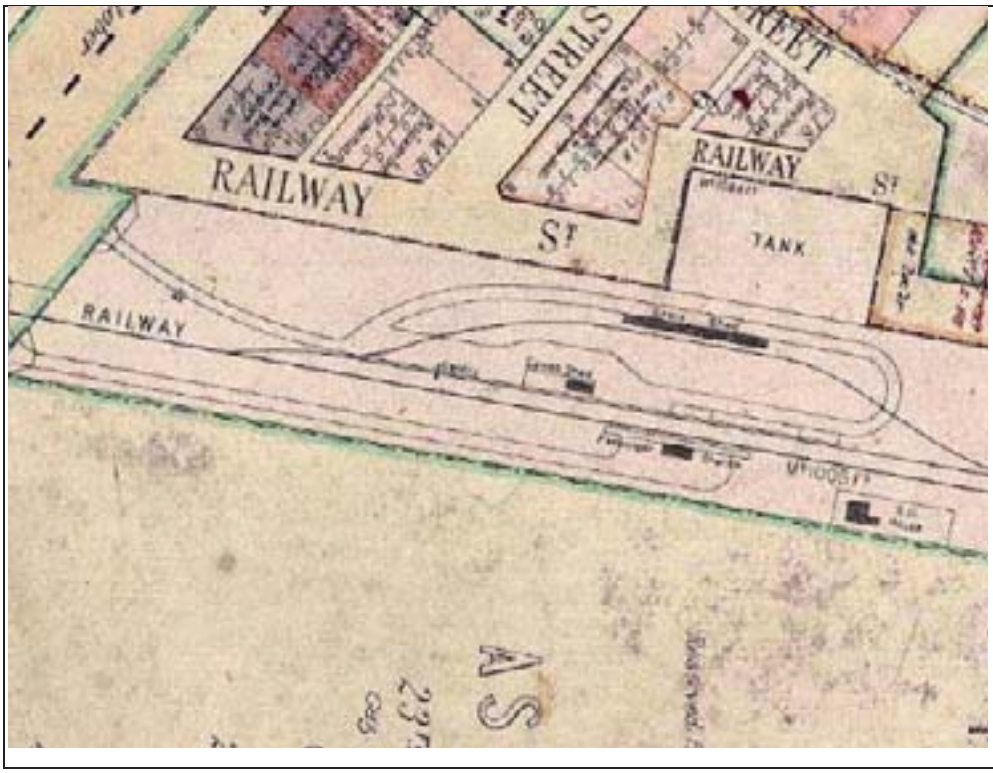


Plate 3.10

Detail of 1917 Town Map of Goonumbla

3.13 Historical Themes

A historical theme is a research tool, which can be used at the national, state or local level to aid in the identification, assessment, interpretation and management of heritage places (AHC 2001:1). Nine national historical themes have been identified by the Australian Heritage Commission (AHC now Australian Heritage Council). The Heritage Division, OEH has identified thirty-five historical themes for understanding the heritage of NSW. The development of the proposal site is broadly reflective of the history of the local region, and can be assessed in the context of the broader historic themes defined by the Heritage Division, OEH and AHC. In accordance with the Heritage Division and AHC framework of historic themes, the themes in Table 3.2 are relevant to the proposal site and locality.

Table 3.5 Historical Themes Relevant to the Proposal site and Locality

National	National Sub Themes	NSW Themes	Local Themes	Examples
Peopling Australia	Living as Australia's earliest inhabitants Adapting to diverse environments Migrating Promoting settlement	Convict Migration	Activities relating to incarceration, transport, reform, accommodation and working during the convict period in NSW. Activities associated with the resettling of people from one place to another and the impacts of such movements	Landscapes of control, convict built structure.
Developing local, regional and national economies	Surveying the continent	Exploration	Looking for overland stock routes Looking for land with agricultural potential Laying out boundaries	Explorers routes Early mapping

National	National Sub Themes	NSW Themes	Local Themes	Examples
Developing local, regional and national economies	Developing Primary Production	Pastoralism	Activities associated with the breeding, raising, processing and distribution of livestock for human use.	Rural landscape, hay barn, dairy, vineyard, farmstead, fencing, shed, orchard.
		Agriculture	Activities relating to the cultivation and rearing of plant and animal species, usually for commercial purposes.	Pastoral landscape, homestead, fencing, well, water trough, shearing shed.
		Mining	Activities associated with identification, extraction, processing and distribution of mineral ores.	Mining field or landscape, mine, quarry, processing plant, miner's office, collier, mine shaft.
Developing local, regional and national economies	Moving Goods and People	Transport Building and maintaining railways	Activities associated with moving goods and people from one place to another, and systems for the provision of such services.	Highway, lane, stock route, bridge, footpath, aerodrome, horse yard. Rail lines and stations.

National	National Sub Themes	NSW Themes	Local Themes	Examples
Building settlements, towns and cities	Making settlements to serve rural Australia Supplying Urban Services	Land Tenure Utilities Accommodation	Activities and processes for identifying forms of ownership and occupancy of land. Activities associated with the provision of services, especially on a communal basis. Activities associated with the provision of accommodation, and particular types of accommodation.	Fence, survey mark, subdivision pattern, stone wall. Bridge, culvert, weir, well, cess pit, reservoir, dam. Homestead, cottage, house site (archaeological site).
Governing	Governing Australia as a province of the British Empire Governing Australia's colonial possessions Administering Australia	Government and administration	Activities associated with the governance of local areas, regions, the State and the nation. Activities associated with maintaining, promoting and implementing criminal and civil law and legal processes.	Land administration and legislation
Educating	Training people for the workplace	Education	Activities associated with teaching	Agricultural training

4.0 Physical Context

This section discusses the potential heritage items present within, and in the vicinity, of the proposal site, identified through a search of relevant heritage registers, previous heritage studies in the area, historical research and archaeological survey. This information, in conjunction with the historical context (refer to **Section 3.0**), forms the basis of the significance assessment (refer to **Section 5.0**) and management strategy (refer to **Section 6.0**).

4.1 Physical Context of the Rail Corridor

As discussed in **Section 1.4** the proposal will generally be located along the existing rail alignment within the rail corridor between Parkes and Narromine (refer to **Figure 1.2**). The rail corridor is generally defined by fences located approximately 20 metres either side of the rail line, however in some sections where fences are not present the rail corridor may be wider, extending out to about 30 to 40 metres from the rail line. At locations where construction works compounds are proposed the development footprint will extent outside of the rail corridor.

The southern extent of the proposal (at Parkes) is situated in the Lachlan River basin and north of the Lachlan River, with the nearest named watercourse being Goobang Creek. The northern extent of the proposal is situated in the Macquarie River floodplain. The proposal crosses 29 waterways including major creeks (such as Burrill Creek, Stanfords Creek, Barrabadeen Creek, Tomingley Creek and Yellow Creek) and other watercourses, some of which are ephemeral.

The majority of the proposal site has been heavily modified by past and ongoing rail disturbances, including clearance and maintenance of the rail corridor, and surrounding agricultural activities.

4.2 Site Survey

4.2.1 2014 Field Survey

A targeted survey was conducted over the course of five (5) days from 10 September 2014 to 14 September 2014 as part of the preparation of the *Melbourne to Brisbane Inland Railway Parkes to Narromine and Narrabri to North Star Historical and Aboriginal Cultural Heritage Evaluation* (Umwelt 2014). The inspections, which covered the whole of the Parkes to Narromine alignment, were undertaken with the intention of inspecting and undertaking preliminary recordings of the location, nature and current condition of:

- any sites (both Aboriginal and non-Aboriginal) identified during the database and literature review
- any additional sites (both Aboriginal and historical) identified during the field survey
- broad scale evaluation of landscape with reference to potential cultural heritage considerations.

Field survey was completed for the existing section of the rail line from south to north, commencing at Parkes and concluding at Narromine.

All watercourses and associated culverts and underbridges along the existing rail line were inspected to identify any that have the potential for any heritage significance (refer to **Section 4.5**).

4.2.2 2016 Field Survey

An additional targeted field inspection was undertaken on the 23 May 2016 along the whole of the Parkes to Narromine alignment focusing on the former railway stations located along the rail line. Field survey was again completed for the existing section of the rail line from south to north, commencing at Parkes and concluding at Narromine.

4.3 Statutorily Listed Heritage Items

As discussed in **Section 2.1** no sites/items with a statutory heritage listing were identified within or in the vicinity of the proposal site with the potential to be subject to either direct or indirect impacts.

As such, the listed heritage items in the vicinity of the proposal site are not considered to be at any risk of impact resulting from the proposal and are not discussed further in this report.

4.4 Potential Non-Aboriginal Heritage Items Within and In Vicinity of the Proposal site

Table 4.1 discusses the broad range of potential (non-listed) heritage items identified within and in the vicinity of the proposal site. These are discussed in more detail below.

Table 4.1 Potential heritage items within and in the vicinity of the proposal site

Item	Location	Description
Rail line	Along entire proposal site	Rail line and associated underbridges / culverts
Rail stations and associated rail infrastructure	Along entire proposal site	Station platforms and buildings, loading banks, station signs, landmark signals, rail signage, rail crossings, communication lines
Grain rail sidings located adjacent to existing rail corridor	Outside but adjacent to proposal site - particularly at station locations	Grain rail sidings including grain silos and associated sheds, loading banks and other infrastructure
Buildings and rural structures and infrastructure located adjacent to existing rail corridor	Occasional locations along rail line – particularly in vicinity of station locations	Houses, shearing sheds, cattle yards, loading ramps and other rural infrastructure
Towns / villages and former village locations	Outside but adjacent to proposal site - particularly at station locations	Towns / villages and former village locations along rail line

All of the potential heritage items identified during the surveys are shown on **Figure 4.1a** and **Figure 4.1b.**

Image Source: Google Earth (2013)
Data Source: Geoscience Australia (2009), Parsons Brinckerhoff (2014)

Legend

- Proposal Site
- Local Government Area
- Potential (non-listed) Heritage Item

FIGURE 4.1A

Potential Heritage Items within 1 km of the Proposal Site

Image Source: Google Earth (2013)
Data Source: Geoscience Australia (2009), Parsons Brinckerhoff (2014)

0 2.5 5.0 10.0km
1:250 000

Legend

- Proposal Site
- Local Government Area
- Potential (non-listed) Heritage Item

FIGURE 4.1B

Potential Heritage Items within 1 km of the Proposal Site

4.5 Rail Line, Underbridges and Culverts

The Parkes to Narromine rail line was originally constructed between Peak Hill and Narromine in 1910 before being extended to Goobang Junction immediately north of Parkes in 1914. It was constructed as an inexpensive Pioneer Line with the intent of upgrading the line if it proved profitable. The line existing today comprises a much upgraded rail line following the same alignment as the original 1910 to 1914 Pioneer Line, with upgraded culverts and underbridges, and track side signage.

Underbridges are considered to comprise structures supporting the rail track that pass over waterways and include culvert structures. During the design process for the proposal all underbridges were assessed for compliance with the Inland Rail performance specification. Any underbridges and culverts that did not comply, were identified as having limited life spans, or cannot be feasibly made to comply, are proposed to be replaced as part of the proposal.

As such there are numerous underbridges along the rail alignment that are proposed to be replaced. The majority of these underbridges / culverts are various types of metal pipe or concrete box structures comprising examples of typical utilitarian rural rail underbridges that would have originally been constructed of timber but have been modified as part of past maintenance works. These are not considered to have any potential heritage significance and are not considered further in this report. There are a number of underbridges surviving along the alignment which still have timber components in addition to early concrete modifications or are entirely constructed of timber. These in general are likely to be more representative of the earlier types of underbridges constructed along the rail line and are detailed in **Table 4.2**.

Table 4.2 Underbridges with timber and concrete components

Location and Underbridge ID (chainage)	Description	Photograph
Goobang Junction 453.403	4 concrete piers supporting timber girder/beam. Vertical concrete abutments.	

Location and Underbridge ID (chainage)	Description	Photograph
Goobang Junction 454.844	17 concrete or timber piers supporting timber girder/beam. Some piers have timber headers. Vertical concrete abutments – with corrugated metal wing walls	
Goonumbla (culvert) 459.676	Low vertical concrete abutments supporting timber girder/beam supporting timber girder/beam.	
Goonumbla 460.698	4 piers (2 timber with timber header, 1 timber, 1 concrete) supporting timber girder/beam. 1 vertical concrete abutment. 1 vertical corrugated metal abutment.	

Location and Underbridge ID (chainage)	Description	Photograph
Goonumbla **461.157**	7 concrete piers with timber headers supporting timber girder/beam. 1 vertical concrete abutment. 1 vertical timber constructed abutment	
Goonumbla **468.565**	5 timber piers with timber headers supporting timber girder/beam. Cut rails used to support / brace piers. Vertical corrugated metal abutments with wing walls.	
Mickibri **478.262**	8 concrete piers with timber headers supporting timber girder/beam. Vertical concrete abutments.	

Location and Underbridge ID (chainage)	Description	Photograph
Mickibri **484.829**	4 timber piers with timber headers supporting timber girder/beam. 1 vertical concrete abutment. 1 vertical timber constructed abutment.	
Peak Hill **498.870**	3 low concrete piers supporting timber girder/beam. Low concrete abutment.	
Peak Hill **503.599**	11 timber piers (2 on concrete footing) with timber headers supporting timber girder/beam. Vertical timber abutment – constructed from horizontal timber planks with wing walls.	

Location and Underbridge ID (chainage)	Description	Photograph
Peak Hill **505.502**	15 timber piers with timber headers supporting timber girder/beam. Cut rails used to support / brace piers. Timber abutments with wing walls.	
Peak Hill **509.64**	5 timber piers with timber headers supporting timber girder/beam. Vertical timber abutment – constructed from horizontal timber planks	
Tomingly West **513.671**	3 low timber piers (2 on concrete footing) piers supporting timber girder/beam. Low vertical corrugated metal abutments.	

Location and Underbridge ID (chainage)	Description	Photograph
Tomingly West **515.011**	10 timber piers with timber headers supporting timber girder/beam. Cut rails used to support / brace piers. Vertical corrugated metal abutments.	
Tomingly West **515.601**	9 timber piers (3 on concrete footing) piers supporting timber girder/beam. Vertical corrugated metal abutments with wing walls.	
Tomingly West **519.224**	3 piers (2 timber , 1 concrete) with timber headers supporting timber girder/beam. Cut rails used to support / brace piers. Vertical corrugated metal abutments	

Location and Underbridge ID (chainage)	Description	Photograph
Wyanga **528.54**	1 piers (timber?) supporting timber girder/beam. Timber abutments.	
Wyanga **529.768**	15 timber piers (with occasional concrete footing) with timber headers supporting timber girder/beam. Vertical corrugated metal abutments	
Narwonah **546.542**	12 piers (2 concrete , 10 timber) with timber headers supporting timber girder/beam. Cut rails used to support / brace piers. Vertical corrugated metal abutments with wing walls.	

All photographs in Table 4.2 © Umwelt, 2014/2016

4.6 Railway Stations

There are 10 former railway stations and one former loop (Myaroo) located within the proposal site and one station and a junction located within the vicinity of the proposal site (Goobang Junction and Narromine). All the stations are closed and in general there is limited remaining evidence of the stations themselves with the exception of raised earthen embankments indicating former station platform or rail siding loading banks. Goobang Junction is still in use, however it has always been a junction with no station structures ever constructed. **Table 4.3** lists the former railway stations located within and adjacent to the proposal site and discusses what physical evidence of the former stations can be identified today with consideration of the evidence provided by the station layout plans discussed in **Table 3.4**.

Table 4.3 Former railway stations within and in vicinity of the Proposal site

Station	Description	Photographs
Goobang Junction **In use** **Outside proposal site**	View to southeast of Goobang Junction. Diagram board and signal box on south side of rail line (background) point levers in foreground Photograph taken at chainage 448.220 south of commencement of proposal site	
Nanardine **Station closed** **Within proposal site**	View to south showing raised earthen embankment indicating former location of loading bank on east side of rail line. No evidence of associated goods shed. No evidence of platform formerly located on west side of line.	

<table>
<tr><th>Station</th><th>Description</th><th>Photographs</th></tr>
<tr><td>Goonumbla
Station closed
Within proposal site</td><td>View to south showing location of main line and grain silos.
No evidence of station platform or station officer’s house formerly located on east side (left of photograph).
Siding rail line is to right of grain silos.</td><td>  </td></tr>
<tr><td rowspan="3">Alectown West
Station closed
Within proposal site</td><td colspan="2">Photograph below is a view to north showing main rail line, loading bank and grain silos. Grain rail siding line is to right of grain silos.
No evidence of timber built station platform likely formerly located in the area of trees centre of photograph.</td></tr>
<tr><td colspan="2">  </td></tr>
<tr><td>View to south showing main line (right of photograph), concrete footing (likely to base of a tank) and grain silos. Rail siding is to left of grain silos.
Station platform was likely located in the area of trees on right of photograph.</td><td>  </td></tr>
</table>

Station	Description	Photographs
Mickibri **Station closed** **Within proposal site**	View to north of weigh bridge. Main line and rail siding on left of photograph. All structures at Mickibri to east of main and siding lines – away from Proposal site.	
	View to north showing slightly raised earthen embankment area (centre of photograph), main line and grain rail siding (with train) and grain silos. Main line is immediately adjacent to (to left of) rail siding with train. No evidence of station platform formerly located in area centre of photograph.	
	Photograph below is a view to north showing weigh bridge and corrugated iron shed located northeast of grain silo. Main line and rail siding on left of photograph. All existing structures at Mickibri to east of main line and rail siding – outside the main corridor works of the proposal site	
		

Station	Description	Photographs
Trewilga **Station closed** **Within proposal site**	View to northeast showing main line with raised earthen embankment (former loading bank of goods siding) to east of rail line. No evidence of station platform formerly to left of photograph	
	View to south showing main line (far right of photograph) with raised earthen embankment to west of rail line – the former location of station platform	
	1940 photograph of former location of Trewilga Station. Earthen embankment comprises only evidence of its location (refer to photograph above). *Photograph: NSWrail.net*	
Peak Hill **Station closed** **Within proposal site**	View to northeast showing main line (foreground), grain rail siding immediately adjacent to main line and loading bank (background)	

Station	Description	Photographs
	View to east showing main line, grain rail siding immediately adjacent to main line, timber faced loading bank (background) and remains of rail related utility services (foreground) possibly related to tank and bore installed in 1941 for defence work.	
	1986 photograph of the former Peak Hill Station. Station building has been relocated to Lindner Oval, Boori Street, Peak Hill. No evidence for platform, sheds or station officer's house remain. *Photograph: NSWrail.net*	
	2006 photograph of the former Peak Hill Station (with chimneys removed) relocated in Lindner Oval, Boori Street, Peak Hill. *Photograph: NSWrail.net*	

Station	Description	Photographs
Myaroo **Loop closed** **Within proposal site**	General view to northwest of main line at Myaroo. No evidence of Myaroo loop found.	
Tomingley West **Station closed** **Within proposal site**	View to south towards junction of main line (on left of photograph) and rail siding (on right of photograph). Old timber cottage on private land adjacent to Tomingley West Road (red arrow) on right of photograph approximately 100 metres to west of main line.	
	Approximately 2000 photograph looking north. Former station located in distance on right of photograph. No evidence of former station or platform survives. *Photograph: NSWrail.net*	

Station	Description	Photographs
	1986 photograph of former Tomingley station with shelter and station sign. No evidence of former station or platform survives today. *Photograph: NSWrail.net*	
	View to southwest showing old cottage on Tomingley West Road (left of photograph – red arrow), rail siding and weigh bridge (right of photograph) Several corrugated iron constructed utilitarian structures on west side of siding line such as weigh bridge and sheds – over 80 metres from main line away from proposal site	
Wyanga **Station closed** **Within proposal site**	2007 photograph looking south. Wyanga Station platform was located on right of photograph before the trees. No evidence of former station or platform survives. *Photograph: NSWrail.net*	

Station	Description	Photographs
	1986 photograph of former Wyanga Station – platform and sign present at time of photograph. No evidence of former station or platform survives. *Photograph: NSWrail.net*	
	View to south of Wyanga grain silos and grain rail siding (left of photograph), location of former siding loading bank (centre of photograph) and derelict cottage adjacent to main line (red arrow).	
	View to southwest of location of former siding loading bank (centre of photograph), main line and derelict cottage adjacent to main line (red arrow).	
	View to southwest of main line and derelict cottage located to south of former station location (refer to **Section 4.8.1**)	

Station	Description	Photographs
Fairview **Station closed** **Within proposal site**	View to north showing raised earthen embankment and remains of communication line – location of former loading bank and loop siding. Main line on right of photograph. No evidence for former station location located out of shot on right (east) of main line.	
Narwonah **Station closed** **Within proposal site**	View to north showing main line, grain siding line and grain silos. No evidence for former station and platform other than very slight rise east of main line (nswrail.net)	
Narromine **Station closed** **Outside proposal site**	View to east showing Narromine. Over 1 kilometre northeast of northern limit of proposal site	

Station	Description	Photographs
	View to east showing Narromine. Over 1 kilometre northeast of northern limit of proposal site	

All photographs in Table 4.3 © Umwelt, 2014 & 2016 unless indicated otherwise

4.7 Grain Rail Sidings

Existing grain rail sidings with grain silos and associated structures and other infrastructure are generally immediately adjacent to, but outside, the proposal site and as such are not expected to be impacted by the proposal. No proposed compounds located outside the rail corridor / main corridor works are located within the area of a grain siding. In places existing overhead powerlines are proposed to be replaced within the general areas of the grain sidings, however these works are not expected to result in any impacts to the grain sidings or silos.

Note that in 2003 the State Library of NSW commissioned the photographic recording of every grain silo across country NSW. The photographs are located in the NSW State Library archives and available online at http://nswsilos.com.au/. The State Library's intent was also to collect historical and cultural information on these landmark structures.

4.8 Other Buildings and Rural Structures in the vicinity of the Proposal site

In general, with the exception of the cottages at Wyanga and Tomingley West, there are no other identified rail (or grain siding) related structures or items within or in the vicinity of the proposal site.

4.8.1 Wyanga Cottage

The cottage at Wyanga comprises a derelict weatherboard cottage with three brick chimneys. The cottage is in a serious state of disrepair and has some internal props supporting the roof (refer to **Plate 4.1**). The structure is located immediately adjacent (approximately 15 metres to the west) to the main rail line and is likely located to the immediate south of the former station location; outside the current rail corridor boundaries.

Plate 4.1

Derelict cottage at Wyanga

4.8.2 Tomingley West Road Cottage

The timber cottage located on private property along Tomingley West Road was not inspected as part of the preparation of this report. It is located outside the proposal site approximately 100 metres to the west of the main rail line. As a result of its distance from the rail line and proposal site there are no expected impacts to the building as a result of the proposal and as such the building is not considered further in this report.

4.9 Villages and Towns

As discussed in **Section 3.10** the construction of an inland railway was a very significant development in the early twentieth century leading to the establishment and survival of villages and towns. The proposal site, and in particular the main corridor works, are within the existing rail corridor outside any existing, or former (for example Goonumbla), villages or towns. The proposal site passes immediately to the west of Peak Hill; however the closest listed heritage item is the Peak Hill Police Station and Official Residence located at 80 Derribong Street approximately 750 metres to east of the proposal site.

As previously discussed, the proposal site comprises the existing Parkes to Narromine rail line and the proposal entails upgrading the rail line to ensure it meets the required Inland Rail performance specification. The upgrading of the existing rail line results in no, or only very minor, change to its overall alignment, location and function. As a result, the proposal is not expected to result in any non-Aboriginal heritage impacts to any part of the town of Peak Hill or the other town and villages (or former village locations) located in the vicinity of the rail line. As such existing, or former, village and towns in the vicinity of the proposal site are not discussed further in this report except in relation to the historical context and significance of the rail line and proposal site in general.

4.10 Summary of Historical, Archaeological and Physical Contexts

The potential non-Aboriginal heritage resource of the proposal site generally reflects the documented history of the surrounding region (discussed in **Section 3.0**) and the extant Parkes to Narromine rail alignment.

The rail line which essentially comprises the proposal site was originally constructed between Peak Hill and Narromine in 1910 before being extended to Goobang Junction immediately north of Parkes in 1914. It was constructed as a Pioneer Line which, as a result of the success of the wheat industry, has been continually upgraded following the same alignment as the original 1910 to 1914 constructed line.

The potential non-Aboriginal heritage resource, and likely absence of any archaeological resource, is considered to be typical of a rail line and includes the rail formation itself with culverts and underbridges of varying construction materials and age, evidence of the former stations and other rail related structures and infrastructure. The grain rail sidings and landmark grain silos dominate the landscape immediately adjacent to the proposal site.

5.0 Significance

5.1 Introduction

An assessment of significance is undertaken to explain why a particular place is important and to enable appropriate site management to be determined. In accordance with the SEARs for the proposal, this section comprises a significance assessment of the non-Aboriginal heritage items within and in the vicinity of the proposal site.

The Australian ICOMOS Burra Charter 1999 (the Burra Charter) defines cultural significance as meaning 'aesthetic, historic, scientific or social value for past, present or future generations' (Article 1.2). The Burra Charter was written to explain the basic principles and procedures that should be followed in looking after important places. Cultural significance is defined as being present in the 'fabric, setting, use, associations, meanings, records, related places and related objects'. The fabric of a place refers to its physical material and can include built elements, sub surface remains and natural material (Australia ICOMOS 2013).

5.2 Basis of Assessment

The NSW Heritage Manual (1996), published by the then NSW Heritage Office and Department of Urban Affairs and Planning, sets out a detailed process for conducting assessments of heritage significance. The manual provides a set of specific criteria for assessing the significance of an item, including guidelines for inclusion and exclusion.

The seven criteria defined by the Heritage Division, OEH, and used by the NSW Heritage Council as an assessment format within NSW are outlined below:

Criterion (a) an item is important in the course, or pattern, of NSW's cultural or natural history;

Criterion (b) an item has strong or special association with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history;

Criterion (c) an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW;

Criterion (d) an item has strong or special association with a particular community or cultural group in NSW for social, cultural or spiritual reasons;

Criterion (e) an item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history;

Criterion (f) an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history; and

Criterion (g) an item is important in demonstrating the principal characteristics of a class of NSW's cultural or natural places or cultural or natural environments.

The following significance assessment is based upon the above seven criteria.

As a component of the holistic concept of significance, archaeological significance has been described as a measure by which a site may contribute knowledge, not available from other sources, to current research themes in historical archaeology and related disciplines (Bickford and Sullivan, 1984 19-26). Archaeology is concerned with material evidence and the archaeological record may provide information not available from other sources. An archaeological study focuses on the identification and interpretation of material evidence to explain how and where people lived, what they did and the events that influenced their lives.

Considerations material to the study of the archaeology include:

- whether a site, or the fabric contained within a site, contributes knowledge or has the potential to do so. If it does, the availability of comparative sites and the extent of the historical record should be considered in assessing the strategies that are appropriate for the management of the site

- the degree and level at which material evidence contributes knowledge in terms of 'current research themes in non-Aboriginal archaeology and related disciplines'.

Following Bickford and Sullivan's work on archaeological significance (1984, 19-26) the following questions can be used as a guide to assessing the significance of an archaeological site:

- Can the site contribute knowledge that no other resource can?

- Can the site contribute knowledge that no other site can?

- Is this knowledge relevant to general questions about human history or other substantive questions relating to Australian history, or does it contribute to other major research questions?

The Heritage Council of NSW recognises four levels of significance for heritage in NSW: Local, State, National and World. An item has local heritage significance when it is important to the local area. An item has state heritage significance when it is important in NSW. Most heritage in NSW is of local significance.

5.3 Significance of the Potential Heritage Items/Sites within and in the immediate vicinity of the Proposal site

5.3.1 Statement of Significance

The significance of the potential heritage sites/items located within and in the vicinity of the proposal site (refer to **Section 4.0**) and the proposal site itself is assessed in **Table 5.1** below.

Table 5.1 Assessment of significance of potential heritage sites/items

Heritage Division Standard Criteria	Significance Assessment
Criterion (a) **Historical**	The proposal site essentially comprises the existing rail corridor of the Parkes to Narromine rail line which was opened between 1910 and 1914 as one of the low cost NSW Pioneer Lines constructed through western and north western NSW. These lines were constructed with the aim of establishing access to wheat growing areas and also reaching the edge of the productive wool growing areas. As such the proposal site demonstrates the pattern of land use and development in the area and has associations with the broader development of the region including its early exploration, settlement, and exploitation for pastoral and agricultural purposes. The stations located along the rail line, in addition to the rail line itself (including underbridges and associated rail infrastructure), have historical association with the expansion of the NSW rail network through the region and its role in encouraging agricultural and pastoral development. Underbridges can provide examples of the differing and changing construction techniques used to raise the rail line. Although outside the rail corridor the derelict house at Wyanga located between the main rail line and Peak Hill Railway Road is likely to be related to the rail line and may comprise a former Rail Officer's House which in a more urban setting would generally comprise a Station Master's House. The grain rail sidings, grain silos and associated other structures and infrastructure located immediately adjacent to the proposal site are closely associated with the rail line. The grain silos comprise significant landmark features throughout the region. The locations of towns, small villages and former village locations (for example Goonumbla) adjacent to the rail line contribute to the history of the development of the area as the rail line led to the establishment and survival of a number of these villages and towns. With the exception of the rail line and its associated structures, evidence of stations and other infrastructure, the proposal site itself is unlikely to contain significant non-Aboriginal heritage or archaeological remains associated with the development history of the area.
Criterion (b) **Associative**	Although the proposal site can be considered to have associations with the people who constructed and worked on the railway in addition to the agriculturalists and pastoralists who depended on it, the proposal site is not known to have any strong or special associations of particular significance. As discussed this report does not consider any Aboriginal historic associations with the proposal site, refer to *ARTC Inland Rail – Parkes to Narromine Aboriginal Cultural Heritage and Archaeological Assessment* (Umwelt 2017) for consideration of any such associations or connections. Accordingly, in general the potential heritage sites/items identified within the proposal site do not meet this criterion.

Heritage Division Standard Criteria	Significance Assessment
Criterion (c) **Aesthetic**	The proposal site may demonstrate some aesthetic significance as an example of a pioneer rail line with adjacent associated grain rail sidings and landmark grain silos crossing a rural landscape; however there are many other similar examples of Pioneer Lines with associated grain rail sidings throughout NSW.
Criterion (d) **Social**	It is considered unlikely that the potential non-Aboriginal) heritage resource of the proposal site would have a strong or special association with any previous or contemporary particular community or group. As the existing rail line comprises a Pioneer Line constructed with the aim of establishing access to wheat and wool growing areas, the proposal site demonstrates an important and integral part of the history of the pattern of settlement and development in the area from the early to mid nineteenth century, and is typical of a rail line crossing a large rural landscape within the wider regional area. A detailed stakeholder engagement program including consultation with local landholders and other stakeholders, has been prepared as part of the EIS for the proposals. As discussed this report does not consider any Aboriginal social, cultural or spiritual associations with the proposal site, refer to *ARTC Inland Rail – Parkes to Narromine Aboriginal Cultural Heritage and Archaeological Assessment* (Umwelt 2017) for consideration of any such associations with both traditional and modern Aboriginal ways of life. Accordingly, in general the potential heritage sites/items identified within the proposal site do not meet this criterion.

Heritage Division Standard Criteria	Significance Assessment
Criterion (e) **Scientific**	As the proposal site comprises an extant redundant Pioneer Rail line constructed across an area with little known previous development with the potential to result in an archaeological resource, there are unlikely to be any intact non-Aboriginal archaeological remains within the proposal site. A high degree of intactness in the archaeological resource is necessary before a substantive contribution can be made to the research potential and hence, the ability of the archaeological resource to answer research questions for the site. Any archaeological evidence associated with the pre rail use and development of the proposal site (such as for early settlement, grazing, agriculture and land clearing) is likely to be patchy at best, and it would be impossible to specify what such remains may entail and where they would be located. In general the existing Parkes to Narromine rail line formation (including extant 'early' underbridges, former station locations, former loading banks, disused communication lines and power poles etc) comprises a typical example of a rural rail line. The extant underbridges comprise examples of typical utilitarian rural rail underbridges that would have originally been constructed of timber but have been modified as part of past maintenance works. Many of the underbridges on the rail line have been partially, or entirely replaced, with the use of other construction materials such as concrete. The extant underbridges with surviving timber components provide examples of the differing and evolving construction techniques and materials formerly used to raise the rail line. Station layout plans provide evidence of what was likely constructed at each station in terms of platforms, station buildings and loading banks. In general there is limited extant evidence of the stations themselves. Platforms and embankments would have comprised simply constructed earthen embankments faced with timber (for example at Peak Hill) or concrete (for example at Tomingley West – refer to 1986 photograph in Table 4.3). With the exception of the previously removed station building at Peak Hill, station buildings would have been simple functional structures built to standard railway design plans (for example at Tomingley West – refer to 1986 photograph in Table 4.3). Any evidence of the former locations of platforms or loading banks is at best in the form of existing earthen embankments which would not be considered to comprise 'relics' under the Heritage Act and as such have no archaeological significance. There would not be expected to be any archaeological resource associated with the rail line itself which is currently, and since its construction in the early twentieth century always has been, a rail line. The level of ongoing works within the rail corridor which has for the most part removed all evidence of stations and associated platforms is likely to have removed all evidence of station officer's houses that may have been located at station areas along the line (for example at Goonumbla, Peak Hill and Tomingley West Stations - refer to **Table 3.4**). Any surviving evidence would likely be highly disturbed and confirm the former building location rather than have any research potential. Station Officer's houses were built to standard plans, for example the standard J.2 Station Officer's House constructed at Peak Hill or the standard J.1 Station Officer's House constructed at Tomingley West.

Heritage Division Standard Criteria	Significance Assessment
	It is possible however that the derelict house at Wyanga is a former Station Officer's house. While the proposal site does demonstrate the use and historical development of the area, in particular its use as a rail line, in general the proposal site is considered to have little research potential and is unlikely to provide further information regarding the history and development of the area not already known.
Criterion (f) **Rarity**	The rail line itself and associated potential heritage sites/items identified within the proposal site, including remains of former rail loading banks, platforms and underbridges, are typical of structures found associated with rail lines throughout NSW and are unlikely to meet these criteria. The potential heritage resources associated with the proposal site are not associated with an unusual or remarkable aspect of the region's history. Although any heritage resource within the proposal site is part of an ever decreasing resource, in general the resource does not meet these criteria.
Criterion (g) **Representativeness**	The potential heritage sites/items identified within the proposal site are generally representative of the structures items/sites typically found associated with a Pioneer rail line in regional NSW.

5.3.2 Archaeological Significance

Archaeological significance is directly linked to the archaeological (or scientific) research potential of an archaeological site or resource. An archaeological site comprises below ground archaeological 'relics' which can be broadly described as physical evidence of building foundations, occupation/archaeological deposits, features and artefacts (Heritage Office and DUAP, 1996b:2).

The Heritage Act defines a 'relic' as any deposit, object or material evidence that:

- relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement
- is of State or local heritage significance.

The research already undertaken as part of this proposal has included an evaluation of available documentary evidence which provides information regarding the use and development of the area. It is considered unlikely for any substantial intact archaeological remains to be present within the proposal site.

Rail tracks (both existing and former) and associated extant rail related earthen embankments comprising locations of former platforms and loading banks would be considered to comprise works or structures rather than 'relics' as defined by the Heritage Act.

As discussed, the level of ongoing works within the rail corridor which has for the most part removed all evidence of stations and associated platforms is likely to have also removed all evidence of station officer's houses that may have been located at station areas along the line (for example at Goonumbla, Peak Hill and Tomingley West Stations - refer to **Table 3.4**). No evidence of former house locations was identified within the main works corridor during site inspections. Any surviving evidence would likely be highly disturbed and confirm the former building location rather than have any research potential. Station Officer's houses were built to standard known plans, for example the standard J.2 Station Officer's House constructed at Peak Hill or the standard J.1 Station Officer's House constructed at Tomingley West.

The cottage at Wyanga is located outside the rail corridor and will not be physically impacted by the proposal.

As such, in general no potential non-Aboriginal archaeological resource has been identified within the proposal site. As a result, the three questions derived from Bickford and Sullivan's work on archaeological significance (discussed in **Section 5.2**) are not discussed further and archaeological significance in general is not discussed further in this report.

5.3.3 Condition and Integrity of Sites within the Proposal site

This section addresses matters that combine with the assessment of significance to allow a formal Heritage Impact Statement to be appropriately validated. The condition and integrity of sites/items is considered as part of the assessment of heritage significance.

The Parkes to Narromine rail line comprises an intact redundant rail line originally constructed as a Pioneer Line between 1910 and 1914. A heritage item is said to have integrity if its fabric is still largely intact. The rail line itself and associated culverts and underbridges are largely intact and in good condition. However in general any other potential non-Aboriginal heritage resource within the proposal site, for example stations and loading banks, is in a poor physical condition represented by the locations of former stations and other rail structures / infrastructure with varying degrees of intact fabric. The majority of station platforms and loading banks have been removed or are evident only as a raised earthen bank.

5.3.4 Summary Statement of Significance

The existing rail line comprises a former (now redundant) Pioneer Line constructed with the aim of establishing access to wheat and wool growing areas in regional NSW. As such the proposal site demonstrates and contributes to an important part of the history of the pattern of settlement and development in the region.

As a result of its strong historical relationship with the construction of Pioneer Lines in rural NSW at the beginning of the twentieth century and its role in encouraging settlement and agricultural and pastoral development in the region the proposal site, and its individual surviving component elements such as the extant timber constructed underbridges and remnant evidence of former stations, is considered to generally be of local significance.

6.0 Heritage Impact Statement and Management Strategy

This section provides a heritage impact statement and management strategy for the heritage sites/items within and where relevant within the vicinity of the proposal site. The heritage impact statement identifies the potential impacts from the proposal on known and potential heritage sites/items identified within, and where relevant within the vicinity of, the proposal site. The impacts are assessed against the significance of the respective elements.

The Burra Charter's options for managing non-Aboriginal heritage include maintenance, preservation, restoration, reconstruction, adaptation and interpretation, or a combination of these (Australia ICOMOS. 2013).

As discussed in **Section 1.2** the proposal is generally located in the existing rail corridor between the towns of Parkes and Narromine in NSW and involves the upgrading of the existing rail line between Parkes and Narromine (refer to **Figure 1.1**).

The proposal would involve upgrading the existing rail line between Parkes and Narromine. Refer to **Section 1.1** for details.

6.1 Potential Impacts of the Proposal

The proposal has the potential for impacts on both heritage items within the proposal site and items in the vicinity. Direct impacts affect heritage items located with the proposal site, while indirect impacts can occur both inside and outside the proposal site. Types of direct and indirect impacts along with the potential impacts of this proposal are discussed below.

6.1.1 Direct Impacts

Direct heritage impacts are considered to be those that may arise as a primary consequence of a project or change of use of an area (note that this is not relevant to the proposal as the use of the proposal site will remain a rail line).

Direct impacts can result in the physical loss of part or all of an item or place, and/or changes to its setting. Setting is considered to include the surroundings of an item or place, its local context and can include present and past relationships to the surrounding landscape. Direct impacts resulting in physical loss are usually permanent and irreversible; they generally occur as a consequence of construction and are usually confined within the development footprint. Direct impacts that affect setting may occur as a consequence of construction or operation of a development and may have an effect some distance from the development. Assessment of impacts on setting refers to perceptible visual and aural (noise) effects that can be appreciated at a given time. Such impacts may be temporary or permanent, reversible or irreversible depending on the extent to which the cause of the impact can be removed. Impacts may also be transient where occurrence is sporadic or of limited duration, for example, related to hours of operation or the frequency of passage of vehicles (ICOMOS 2011).

The majority of the main corridor works (upgrading the existing track and track formation) fall within the existing rail corridor (generally approximately 15 metres from outer rail).

No listed heritage items or potential (non-listed) heritage items have been identified within or in the immediate vicinity of the Parkes north-west connection proposal site.

Existing high voltage overhead power lines require alteration where they currently cross the rail corridor. This is due to the increases in clearances from the rail due to the double stacking arrangement that is a fundamental performance criteria of the Inland Rail strategy. Works include dropping the existing lines and erecting new lines with greater clearance. As such there are not expected to be any additional power poles required or any impact as a result of works associated with replacing overhead powerlines.

In general the impact of the proposal can be considered to comprise the removal of the existing rail line, including rails, sleepers and ballast, and its associated culverts and the construction of a new rail line within the same rail corridor. As such the rail line will remain as an easily understood rail line in regional western NSW.

Retaining all evidence of the former rail line, culverts and stations etc. as extant today is not feasible as significant upgrades to the formation are required as part of the proposal in order for the rail line to comply with the Inland Rail required performance specifications. No identified original elements of the Pioneer Line survive intact that would warrant consideration of preservation.

The majority of the former stations have been previously removed with only occasional earthen embankments or loading banks remaining as evidence of their former locations. The rail line itself has been continually upgraded as required since its construction as a Pioneer Line and no original features (with the possible exception of some of the timber components of a number of underbridges) have been identified or are expected to be found.

Statements of Heritage Impact are provided in **Section 6.2**, **6.3** and **6.4** for the listed and unlisted heritage items potentially impacted by the proposal and summarised in **Table 6.2** (**Section 6.5**).

6.1.2 Indirect Impacts

Indirect impacts are considered to be those that may arise as a secondary consequence of construction or operation of a project, and can result in physical loss or changes to the setting of an item or place beyond a project area.

Indirect impacts relevant to the proposal include vibration and visual impacts which have the theoretical potential to damage/destroy/disturb or dominate/detract from a non-Aboriginal heritage items or place or its setting.

ACARP Report (No. C14057) Effect of Blasting on Infrastructure recommends ‘safe’ vibration limits for heritage structures such as those used by British Standard BS7385. Annex A of the British Standard BS7385:Part2:1993 for the Evaluation and Measurement for Vibration in Buildings states that:

> *...the age and existing condition of a building are factors to consider in assessing the tolerance to vibration. If a building is in a very unstable state, then it will tend to be more vulnerable to the possibility of damage arising from vibration or any other ground-borne disturbance British Standard BS7385:7.*

The British Standard BS7385 further discusses that ‘a building of historical value should not (unless it is structurally unsound) be assumed to be more sensitive’ (British Standard BS7385:5). The German standard DIN 4150: Part 3 Effects of Vibration on Structures includes a building type ‘Particularly Sensitive’ which is assigned vibration limits of 3 mm/s (at less than 10Hz), 3 to 8 mm/s (at 10-50Hz) and 8 to 10 mm/s (at 50-100Hz). Swiss Standard SN640 312:1978 also includes a ‘Particularly Sensitive’ structural type which is assigned vibration limits of 3 mm/s (at 10 to 30Hz) and 3 to 5 mm/s (at 30 to 60 Hz).

Australian Standard AS 2187.2-2006 Explosives—Storage and use Part 2: Use of Explosives no longer references 'sensitive or heritage structure'. The previous AS 2187.2-1993 indicated a conservative vibration level of 5 mm/s should be assigned to 'sensitive or heritage structures'. In the absence of a current Australian Standard which refers to structural vibration in buildings or heritage structures specifically, or any building specific assessment of the relevant sites/items considered in this report, a conservative peak particle velocity limit of between 3 to 5 mm/s is considered to be appropriate when assessing heritage structures. Note however, heritage type structures should also be considered on an individual basis in terms of their structural integrity; as an abandoned semi-derelict and dilapidated structure would likely be more sensitive to vibration induced damage than a well maintained and regularly utilised building.

As discussed in **Section 2.1** general construction activities are not expected to be sufficient to cause damage if the equipment operates at distances greater than 35 metres from heritage buildings and structures'. With the exception of impact piling typical vibration limits resulting from the construction and operation of the rail line are expected to be less than 3 mm/s at a conservative distance of 50 metres away from the proposal site (GHD 2017). As discussed there are no statutorily listed heritage items within 700 metres of the proposal site, which will continue to be used as a rail line, and as such there are not expected to be any impacts to any listed heritage in the vicinity of the proposal site. Potential heritage items such as station buildings and sidings are located within, and in the vicinity of, the proposal site. With consideration to structural damage resulting from vibration impacts caused by general construction activities, the expected magnitude of ground vibration should not be sufficient to cause damage if the equipment operates at distances greater than 35 metres from any potential heritage buildings and structures. It is recognised that there are items located within this 35 metre buffer, however levels measured on other similar projects indicate that vibration limits are not expected to exceed 3 mm/s and vibration damage is not expected for structures immediately adjacent to construction activities (GHD 2017).

All of the heritage items (both listed and unlisted) are currently located in proximity to a rail corridor and in many cases the heritage items existence is due to past and current associations with the railway line. The proposal comprises the removal of the existing rail line and the construction of a new rail line within the same rail corridor. As such, it is considered likely that the associations, setting, vistas and curtilage of the heritage items (both listed and unlisted) in relation to the rail line will essentially remain the same and as such will not be impacted. The proposal does create the potential for intermittent visual impacts as a result of the increased traffic on the railway line; however these are again related specifically to the continued and ongoing use of the railway line. As a result, the upgrade of the existing line does not change the setting or character of these heritage items and in general has at most a low visual impact.

The *Australian Rail Track Corporation Inland Rail – Parkes to Narromine Landscape and Visual Impact Report* (Urbis 2017) identifies that the visual impact of the proposal is generally low and does not identify any visual impacts in terms of the non-Aboriginal heritage of the proposal site.

6.2 Potential Non-Aboriginal Heritage Items within the Proposal site

This section addresses the potential impacts resulting from the proposal to the elements identified within the proposal site as being of significance as part of the former Pioneer Line and proposes a management strategy to mitigate any impacts.

The proposal proposes to upgrade the existing Parkes to Narromine rail line. The proposal has no proposed impacts to existing grain sidings and associated landmark grain silos. As such, apart from temporary impacts during construction, there are no known impacts to the function and setting of the proposal site or its past and present relationships to the surrounding landscape.

6.2.1 Underbridges

Heritage Impact Statement

As discussed in **Section 4.5**, during the design process for the proposal all underbridges were assessed for compliance with the Inland Rail performance specification. Any underbridges and culverts that did not comply, were identified as having limited life spans, or cannot be feasibly made to comply, are proposed to be replaced as part of the proposal.

As such, there are numerous underbridges along the rail alignment that are proposed to be replaced. The majority of these underbridges / culverts are various types of metal pipe or concrete box structures comprising examples of typical utilitarian rural rail underbridges that would have originally been constructed of timber but have been modified as part of past maintenance works. In general these are not considered to have any potential heritage significance. There are a number of underbridges surviving along the alignment which are entirely constructed of timber or have timber components in addition to early concrete modifications. These in general are likely to be more representative of the earlier types of underbridge constructed along the rail line (refer to **Table 4.2** for details). Note that none of the existing underbridges with timber components are considered to comprise examples of intact original timber girder underbridges designed by Henry Deane (refer to **Section 3.11.1.1**). The proposal will impact all of the surviving timber underbridges and underbridges with timber components, therefore impacting the significance of these items. However these impacts to heritage significance will be mitigated by following the recommendations provided below.

Recommendation

A photographic/archival recording is recommended for the underbridges listed in **Table 4.2** prior to the commencement of construction. The photographic recording will be undertaken with consideration of Heritage Division, OEH guidelines *Photographic Recording of Heritage Items Using Film or Digital Capture* (2006).

The proposed photographic recording will ensure that a full understanding and record of the former Pioneer rail line and its associated infrastructure is documented and will be available for future generations. The report would include photographs of the rail line itself in the locations of the underbridges and any other rail related infrastructure such as former communication line / power poles etc, station locations (refer to **Section 6.2.2**) and as such comprise a detailed record of the former Pioneer Line and its surviving component elements.

6.2.2 Main Rail Line Former Station Areas

Heritage Impact Statement

As a result of the proximity of the earthen embankments / loading banks etc that in general comprise the only remaining evidence of the former railway stations, it is likely that any remaining evidence will be impacted to some extent as part of the main corridor works.

Recommendation

A photographic/archival recording is recommended for remaining evidence of the former stations located along the Parkes to Narromine rail line prior to the commencement of any works with the potential to impact the former station areas. The photographic recording will be undertaken with consideration of Heritage Division, OEH guidelines *Photographic Recording of Heritage Items Using Film or Digital Capture* (2006) and form part of a photographic recording report produced for the proposal which will include the

station areas and underbridges. The photographic recording will include contextual photographs showing relationships between the rail line, station areas and associated grain rail sidings and silos.

If possible the intact timber faced loading bank located at Peak Hill should be retained in situ as an example of loading banks constructed as part of the rail line and associated grain rail sidings. The loading bank is approximately 15 metres east of the main rail line; immediately adjacent to 'buffer' boundary of main corridor works.

Table 6.1 considers the impacts at each station location and recommends any management (for example photographic recording) specific to that location.

Table 6.1 Impacts and Recommended Management Measures for Railway Stations

Station	Remains	Impact	Recommended Management
Nanardine	Main rail line. Raised earthen embankment (former location of loading bank or platform) on east side of rail line.	Main rail line removed as part of main corridor works. Raised earthen embankment likely impacted as part of main corridor works.	Photographic recording
Goonumbla	Main Rail line. No evidence of former station.	Main rail line removed as part of main corridor works. Note former Goonumbla Village location outside Proposal site.	No management required
Alectown West	Main rail line. Loading bank and concrete pier footings.	Main rail line removed as part of main corridor works. Loading bank approximately 10 metres east of main rail line. Potential impacts as part of main corridor works. Concrete footings likely impacted as part of main corridor works.	Photographic recording
Mickibri	Main rail line. Earthen embankment area (former platform).	Main rail line removed as part of main corridor works. Raised earthen embankment likely impacted as part of main corridor works.	Photographic recording

Station	Remains	Impact	Recommended Management
Trewilga	Main rail line. Raised earthen embankments to east (former station platform) and west (loading bank) of rail line.	Main rail line removed as part of main corridor works. Raised earthen embankments likely impacted as part of main corridor works.	Photographic recording
Peak Hill	Main rail line. Grain rail siding immediately adjacent to main line. Loading bank with timber facing. Remains of rail related utility services - possibly related to tank and bore installed in 1941 for defence work.	Main rail line and former utility services removed as part of main corridor works. Loading bank approximately 15 metres east of main rail line – immediately adjacent to 'buffer' boundary of main corridor works.	Photographic recording. If possible the intact timber faced loading bank should be retained *in situ* as an intact example of loading banks constructed as part of the rail line and associated grain rail sidings.
Myaroo Loop	Main rail line	Main rail line removed as part of main corridor works.	No management required
Tomingley West	Main rail line. Utilitarian sheds etc associated with grain siding.	Main rail line removed as part of main corridor works. Utilitarian sheds etc associated with grain siding outside proposal site.	No management required
Wyanga	Main rail line. Raised earthen embankment (former loading bank).	Main rail line removed as part of main corridor works. Former loading bank likely removed as part of main corridor works.	Photographic recording
Fairview	Main rail line. Raised earthen embankment (former loading bank).	Main rail line removed as part of main corridor works. Former loading bank likely removed as part of main corridor works.	Photographic recording
Narwonah	Main rail line	Main rail line removed as part of main corridor works.	No management required

6.3 Identified Sites within the Immediate Vicinity of the Proposal site

6.3.1 Grain sidings and associated infrastructure

Heritage Impact Statement

The existing grain rail sidings with their landmark grain silos and associated structures are generally located immediately adjacent to, but outside, the proposal site and as such are not expected to be impacted by the proposal. No proposed compounds or access roads, located outside the rail corridor, are expected to impact the area of a grain siding or grain silo. In certain locations existing overhead powerlines are proposed to be replaced within the general areas of the grain sidings, however these works are not expected to result in any impacts to the grain sidings or silos (refer to **Section 6.1**).

This report does not include detailed consideration of the structural integrity of the grain silos however there are not expected to be any impacts to the grain sidings and associated silos as a result of vibration associated with the construction or operation of the proposal. Vibration levels resulting from the construction and operation of the proposal are not expected to exceed those already experienced as a result of the Parkes to Narromine rail line.

As the proposal would upgrade the existing rail line, apart from temporary impacts during construction, there are no expected impacts to the setting of the grain silos and their landmark silos as a result of the proposal.

The State Library of NSW commissioned photographic recording of NSW grain silos comprises an existing valuable and important photographic record of NSW grain silos; including those within close proximity to the proposal site.

Recommendation

The proposed photographic recording of elements of the existing rail line discussed above (including station areas) will include contextual photographs showing relationships between the rail line, its stations and the grain rail sidings and silos.

6.4 Wyanga Cottage

Heritage Impact Statement

The cottage located to the south of the former location of Wyanga Station is approximately 15 metres from the centre line of the rail line (refer to **Figure 4.1b**). Although the cottage has no known statutory heritage listing, it is considered to be of local significance as a result of its likely association with the construction of the rail line and potential use as a Station Officer's house.

Wyanga Cottage has likely always been associated with the rail line and as such its location immediately adjacent to the rail line is directly associated with its construction and use (potentially as a Station Officer's house). The proposal comprises the removal of the existing rail line and the construction of a new rail line within the same rail corridor. As such, it is considered likely that the associations, setting, vistas and curtilage of Wyanga Cottage in relation to the rail line will essentially remain the same and as such will not be impacted.

The cottage is in a serious state of disrepair and at risk of collapse. Although located immediately outside the current boundaries of the rail corridor and not proposed for demolition or disturbance there are potential indirect impacts, caused by vibration, as a result of the construction and operation of the proposal. The noise and vibration assessment of the proposal (GHD 2017) concluded that the cottage is located within the buffer distance where vibration levels from construction activities may cause impacts, therefore mitigation measures are recommended to minimise the potential for any impacts. The management of vibration in the vicinity of the cottage would be undertaken in accordance with the approach defined by the *Inland Rail Construction Noise and Vibration Management Framework*. Potential management actions could include a dilapidation survey and careful selection of construction techniques in the vicinity of the cottage. Further information on the framework with respect to the management of vibration is provided in the noise and vibration assessment.

Recommendation

In addition to the implementation of vibration management measures in accordance with the *Inland Rail Construction Noise and Vibration Management Framework*, it is recommended that a photographic/archival recording be undertaken of the cottage prior to the commencement of any works in the area. The photographic recording (including a base/floor plan) will be undertaken with consideration of Heritage Division, OEH guidelines *Photographic Recording of Heritage Items Using Film or Digital Capture* (2006) and form part of the proposed photographic recording report produced for the proposal which will include the station areas and underbridges.

Site specific archaeological assessment should also be undertaken if any ground disturbance is proposed.

6.5 Summary of Management and Mitigation Recommendations

A summary of the proposed management and mitigation recommendations detailed in **Section 6.0** is provided in **Table 6.2**.

Table 6.2 Summary of Management and Mitigation Recommendations

Item	Report Section	Management/Mitigation Recommendations
Goobang Junction 453.403 Underbridge	Section 6.2.1	• Undertake photographic archival recording.
Goobang Junction 454.844 Underbridge	Section 6.2.1	• Undertake photographic archival recording.
Goonumbla 459.676 Culvert	Section 6.2.1	• Undertake photographic archival recording.
Goonumbla 460.698 Underbridge	Section 6.2.1	• Undertake photographic archival recording.
Goonumbla 461.157 Underbridge	Section 6.2.1	• Undertake photographic archival recording.

Item	Report Section	Management/Mitigation Recommendations
Goonumbla 468.565 Underbridge	Section 6.2.1	• Undertake photographic archival recording.
Mickibri 478.262 Underbridge	Section 6.2.1	• Undertake photographic archival recording.
Mickibri 484.829 Underbridge	Section 6.2.1	• Undertake photographic archival recording.
Peak Hill 498.870 Underbridge	Section 6.2.1	• Undertake photographic archival recording.
Peak Hill 503.599 Underbridge	Section 6.2.1	• Undertake photographic archival recording.
Peak Hill 505.502 Underbridge	Section 6.2.1	• Undertake photographic archival recording.
Peak Hill 509.64 Underbridge	Section 6.2.1	• Undertake photographic archival recording.
Tomingly West 513.671 Underbridge	Section 6.2.1	• Undertake photographic archival recording.
Tomingly West 515.011 Underbridge	Section 6.2.1	• Undertake photographic archival recording.
Tomingly West 515.601 Underbridge	Section 6.2.1	• Undertake photographic archival recording.
Tomingly West 519.224 Underbridge	Section 6.2.1	• Undertake photographic archival recording.
Wyanga 528.54 Underbridge	Section 6.2.1	• Undertake photographic archival recording.
Wyanga 529.768 Underbridge	Section 6.2.1	• Undertake photographic archival recording.
Narwonah 546.542 Underbridge	Section 6.2.1	• Undertake photographic archival recording.
Nanardine Station	Section 6.2.2	• Undertake photographic archival recording.

Item	Report Section	Management/Mitigation Recommendations
Alectown West Station	Section 6.2.2	• Undertake photographic archival recording.
Mickibri Station	Section 6.2.2	• Undertake photographic archival recording.
Trewilga Station	Section 6.2.2	• Undertake photographic archival recording.
Peak Hill Station	Section 6.2.2	• Undertake photographic archival recording. • If possible the intact timber faced loading bank should be retained *in situ* as an intact example of loading banks constructed as part of the rail line and associated grain rail sidings.
Wyanga Station	Section 6.2.2	• Undertake dilapidation survey • Undertake photographic archival recording.
Fairview Station	Section 6.2.2	• Undertake photographic archival recording.
Grain Silos and sidings	Section 6.3.1	• Photographic archival recording of elements of the existing rail line discussed above (including station areas) will include contextual photographs showing relationships between the rail line, its stations and the grain rail sidings and silos
Wyanga Cottage	Section 6.4	• Undertake photographic archival recording. • If the vibration assessment identifies the risk of the cottage collapsing, then a detailed Statement of Heritage Impact will be required to assess the entire structure including internal and external fabric.

6.6 Photographic Recording

A photographic recording comprises an archival record of a heritage place or object which may include sites, buildings, structures and movable items of heritage significance. The purpose of a photographic recording is to document a heritage item for future generations; as making a photographic record of a heritage place or object documents it for the future, before it is lost or changed, either by progressive alterations or by the ravages of time (Heritage Office 2006). The photographic recording will be undertaken with consideration of Heritage Division, OEH guidelines *Photographic Recording of Heritage Items Using Film or Digital Capture* (2006).

It is not appropriate, feasible or practical to record the entire Parkes to Narromine section of rail line prior to its removal. Table 6.2 lists all items where it is recommended that photographic recording be undertaken. It is assessed that this will comprise an adequate and appropriate photographic recording of the rail line and its associated elements and will ensure that a full understanding and record of the former Pioneer Line will be available for future generations.

6.7 Interpretation

As discussed, the Burra Charter's options for managing non-Aboriginal heritage include maintenance, preservation, restoration, reconstruction, adaptation and interpretation, or a combination of these (Australia ICOMOS. 2013).

The long linear nature of the proposal site and its location in a rural environment makes interpretation problematic, however the proposal site does form a significant part of the history of the pattern of settlement and development in the region. Pioneer Lines were constructed in rural NSW at the beginning of the twentieth century; encouraging settlement and agricultural and pastoral development throughout the region. The proposal site, and its individual surviving component elements such as the extant timber constructed underbridges and remnant evidence of former stations, is considered to generally be of local significance.

While in general the proposal comprises upgrading the existing track, any remaining evidence related construction of the Pioneer Line will be removed. As discussed, undertaking photographic recording of elements of the rail line is considered to comprise an adequate and appropriate recording of the rail line and its associated elements and will ensure that a full understanding and record of the former Pioneer Line will be available for future generations. However, consideration should be given to developing an Interpretation Strategy for the proposal.

The Heritage Division, OEH identifies interpretation as an integral part of the conservation and management of NSW's heritage. An Interpretation Strategy would provide a concept and framework for the interpretation of the existing rail line and associated features in order to communicate its significance to all stakeholders.

6.8 Unexpected Finds

6.8.1 Section 146 Heritage Act 1977 (NSW)

In the unlikely event that unexpected archaeological remains or potential heritage items not identified as part of this report are discovered during construction, all works in the immediate area should cease, the remains and potential impacts should be assessed by a qualified archaeologist or heritage consultant and, if necessary, the Heritage Division, OEH notified in accordance with Section 146 of the *Heritage Act 1977* (NSW).

If an archaeological relic is located as part of the proposal, a S146 Discovery of a Relic notification form must be completed and submitted to the Heritage Division, OEH.

6.8.2 Human Skeletal Material

In the unlikely event that a potential burial site or potential human skeletal material is exposed within the proposal site, the following procedure should be followed in accordance with the *Policy Directive – Exhumation of Human Remains* (NSW Department of Health 2008), *Skeletal Remains – Guidelines for the Management of Human Skeletal Remains under the Heritage Act 1977* (NSW Heritage Office 1998) and the *Aboriginal Cultural Heritage Standards and Guidelines Kit* (NPWS 1997):

- as soon as remains are exposed, work is to halt immediately to allow assessment and management
- contact local police, OEH and the Heritage Division

- a physical or forensic anthropologist should inspect the remains *in situ*, and make a determination of ancestry (Aboriginal or non-Aboriginal) and antiquity (pre-contact, historic or forensic)
- if the remains are identified as forensic the area is deemed as crime scene
- if the remains are identified as Aboriginal, the site is to be secured and OEH and all registered Aboriginal parties are to be notified in writing
- if the remains are non-Aboriginal (historical) remains, the site is to be secured and the Heritage Division is to be contacted.

The above process functions only to appropriately identify the remains and secure the site. From this time, the management of the remains is to be determined through liaison with the appropriate stakeholders (NSW Police Force, forensic anthropologist, OEH, Heritage Division, registered Aboriginal parties etc) and in accordance with the Public Health Act 1991.

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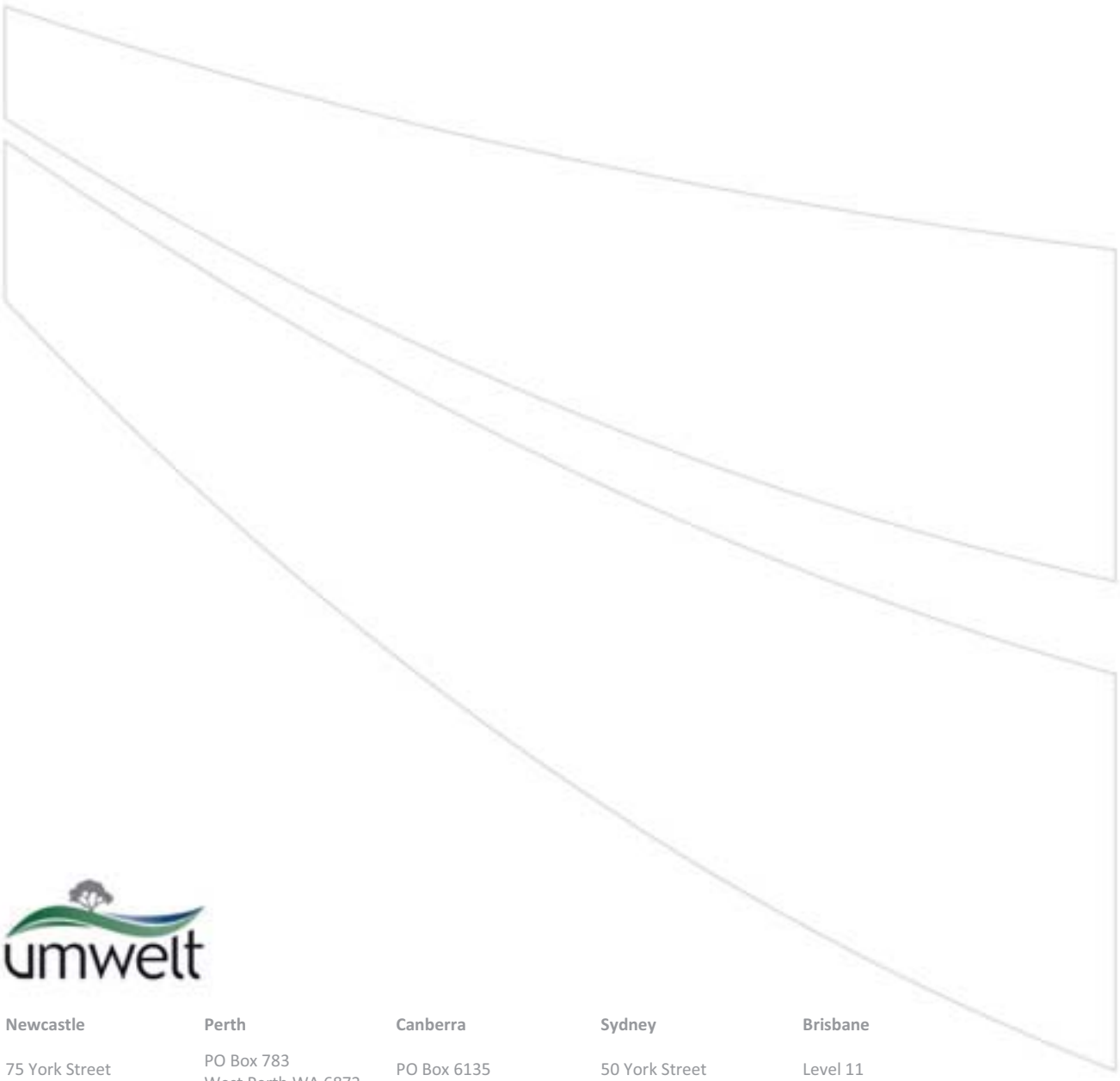

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