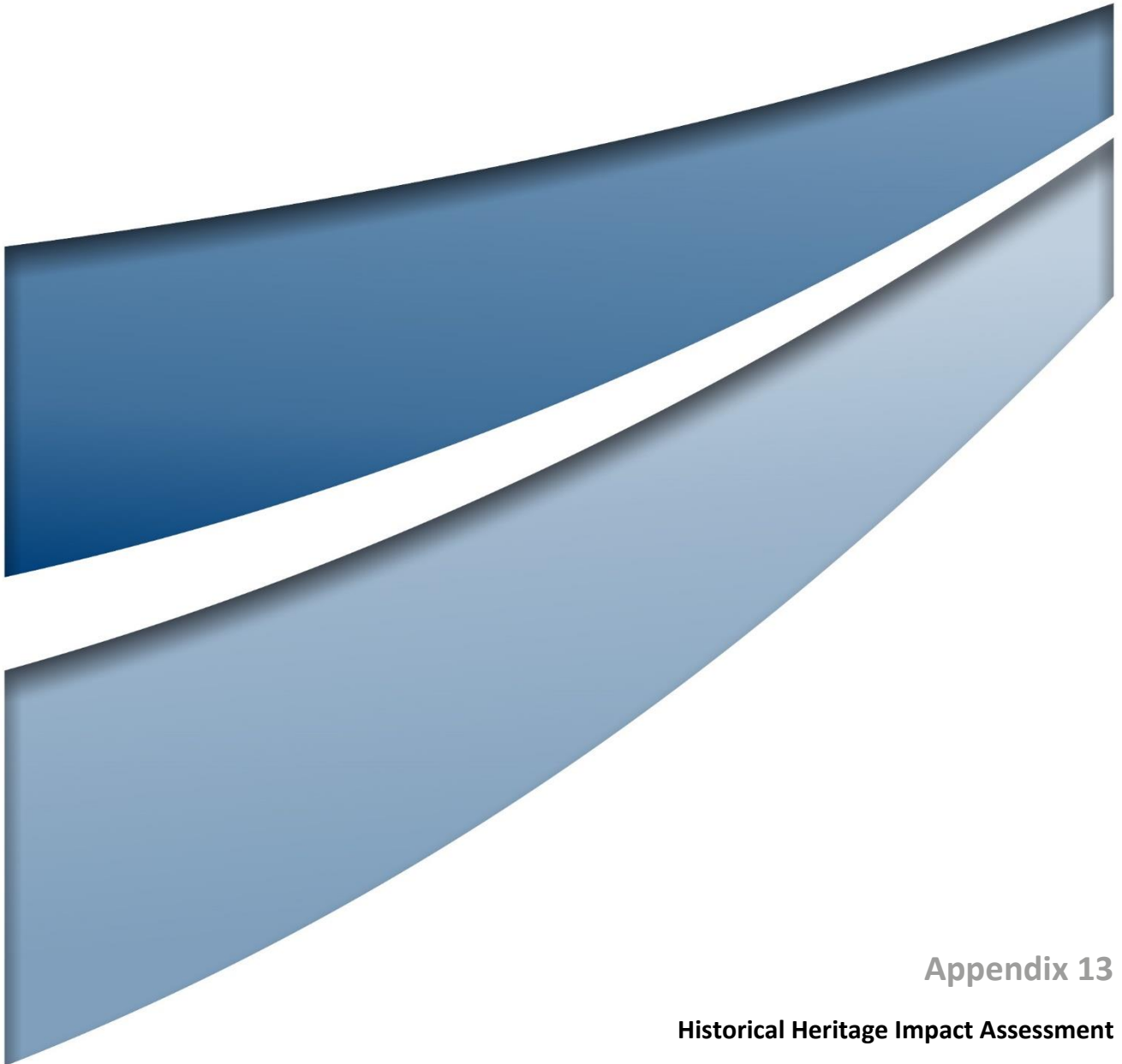




Appendix 13

Historical Heritage Impact Assessment

JUNCTION RIVERS WIND PROJECT

Historical Heritage Impact Assessment

FINAL

May 2024



JUNCTION RIVERS WIND PROJECT

Historical Heritage Impact Assessment

FINAL

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

Project Director: Paul Douglass
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Report No. 22601/R05
Date: May 2024



This report was prepared using
Umwelt's ISO 9001 certified
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Acknowledgement of Country

Umwelt would like to acknowledge the traditional custodians of the country on which we work and pay respect to their cultural heritage, beliefs, and continuing relationship with the land. We pay our respect to the Elders – past, present, and future.

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Document Status

Rev No.	Reviewer		Approved for Issue	
	Name	Date	Name	Date
Final	T. Adams	14/05/2024	T. Adams	14/05/2024

Executive Summary

Windlab Pty Ltd (Windlab) proposes to develop the Junction Rivers wind project (the Project) to generate renewable wind energy to supply the people of New South Wales (NSW). Umwelt (Australia) Pty Ltd (Umwelt) has been engaged by Windlab to undertake a historical heritage impact assessment (HHIA) in relation to the proposed Project.

The Project Area was first visited by Europeans in 1817. Over the course of the early nineteenth century, extensive squatter's runs were established across the landscape. By the end of the century, the western NSW landscape was characterised by extensive runs and few landholders. In 1884, the *Crown Lands Act* was introduced in an attempt to reform the system and break the squatters' monopoly. Resultingly, the large runs in the Project Area were broken into several smaller holdings, including: 'Lynwood', 'Oldham Park', 'Spring Plain', 'Tyndale', 'Arundel', and 'Myall Farm'. These holdings were prosperous up until the mid-twentieth century, when many of the original homesteads were abandoned. The remains of three homesteads — Lynwood, Oldham Park, and Tyndale — are still present within the Project Area.

There are no registered heritage items or values located within the Project Area. The Project Area has been assessed as having high potential to contain archaeological material relating to the late nineteenth homesteads that characterised the landscape. There is also potential for archaeological materials related to other aspects of the area's history to be present, although the current landowners are not aware of any potential heritage structures, items, or features.

The proposed works do not directly impact any registered or known potential heritage values. Subsequently, recommendations have been made to mitigate accidental impact and promote heritage awareness amongst the Project team.

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1.0 Introduction

Windlab Pty Ltd (Windlab) proposes to develop the Junction Rivers wind project (the Project) to generate renewable wind energy to supply the people of New South Wales (NSW). Umwelt (Australia) Pty Ltd (Umwelt) has been engaged by Windlab to undertake a historical heritage impact assessment (HHIA) in relation to the proposed Project.

The Junction Rivers wind project is a State Significant Development (SSD) as defined under *State Environmental Planning Policy (Planning Systems) 2011* (Planning Systems SEPP) and will require development consent under Part 4 of the *Environmental Planning and Assessment Act 1979* (NSW) (EP&A Act).

1.1 Project Area

The Project Area is located approximately 15 kilometres (km) south of Balranald and 10 km north of Kyalite within the southern section of the Murray-Darling Basin in NSW. The Project is within the Murray River Local Government Area (LGA) and the NSW South West Renewable Energy Zone (REZ) (refer to **Figure 1.1**).

1.2 Project Overview

The Project would involve the construction, operation, maintenance and decommissioning of a wind farm consisting of up to 96 wind turbine generators (WTGs), grid support (battery energy storage systems (BESS) or Static Compensators (StatCom) and associated electrical infrastructure. The generating capacity of the wind farm would be approximately 750 megawatts (MW) with the potential to power approximately 434,000 NSW homes. The key components of the Project include (refer to **Figure 1.2**):

- up to 96 (3 blade) WTGs with a maximum blade tip height of up to 300 metres (m)
- electrical connections between the proposed WTGs and substations/switching stations (underground or a combination of underground and overhead powerlines)
- substations/switching stations and transmission connections to connect to the existing 220 kV transmission line and/or the approved 330 kV Project EnergyConnect transmission line
- up to four BESS (totalling 200 megawatts (MW) with an 800 megawatt hour (MWh) delivery capacity) or StatCom facilities
- Permanent Power Performance Masts
- other associated infrastructure including access roads and tracks, operation and maintenance buildings, construction facilities
- temporary on-site concrete batching plants, rock crushing facilities, calibration meteorological masts during the construction phases
- targeted road network upgrades to facilitate delivery of WTG components to the site as required.

1.3 Methodology and Report Structure

As mentioned above and discussed further in **Section 2.0**, the Project is SSD. The Secretary's Environmental Assessment Requirements (SEARs) for the Project were issued on 21 December 2021 and identify the specific requirements to be addressed by the Environmental Impact Statement (EIS) for the Project. Supplementary SEARs were issued on 19 December 2023. The SEARs relating to historical heritage necessitate:

- an assessment of the impacts to historic heritage having regard to the *NSW Heritage Manual*.

The purpose of this HHIA, therefore, is to:

- satisfy the assessment requirements of the SEARs
- identify and tabulate listed heritage items located within or in proximity to the Project Area
- identify and assess any unlisted items (e.g. buildings, structures, moveable relics, archaeological sites) of potential historical heritage significance located within or in proximity to the Project Area
- identify and assess the likelihood, extent, and nature of potential impacts to any listed or unlisted items located within or in proximity to the Project Area
- develop appropriate measures to avoid, manage, and/or mitigate any identified impacts.

The policies and guidelines referenced in the SEARs are outlined in **Section 2.2**.

The structure of this report is outlined in **Table 1.1** below.

Table 1.1 Outline of report structure

Report Section	Section Outcomes
Section 1.0	Introduction to the HHIA purpose and aims, and summary of the Project
Section 2.0	Outline of the statutory context and heritage significance legislative framework
Section 3.0	Overview of the methodology used for the preparation of this HHIA
Section 4.0	Historical context for the Project area
Section 5.0	Identification of known heritage items and values within and in proximity to the Project area, including review of previous assessments
Section 6.0	Assessment of archaeological potential and heritage significance
Section 7.0	Heritage impact assessment
Section 8.0	Conclusion and recommendations
Section 9.0	References

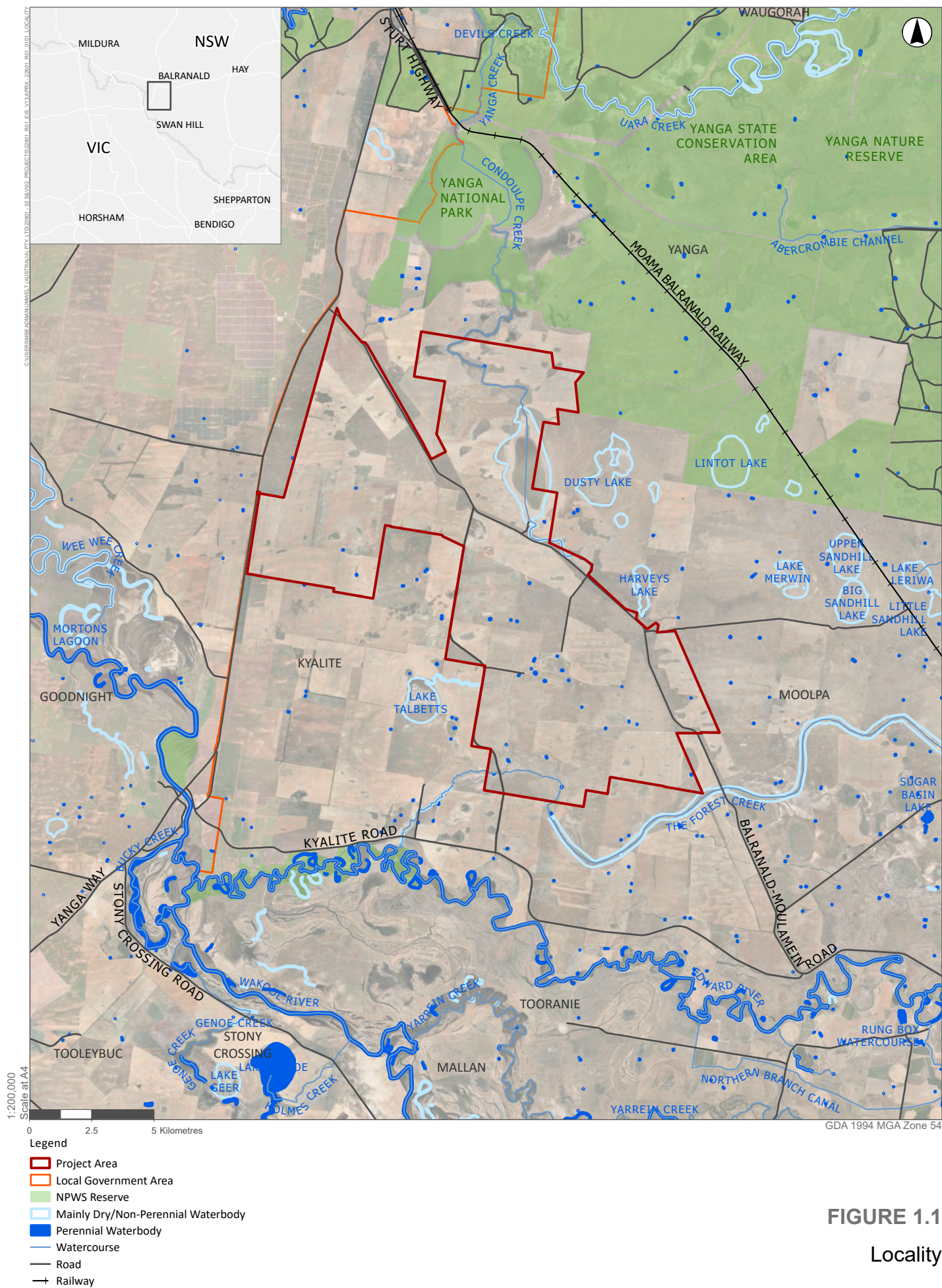
1.4 Project Team and Acknowledgements

This report was prepared by Elise Jakeman (Archaeologist) and reviewed by Tim Adams (Principal Archaeologist, Historical Heritage) of Umwelt.

1.5 Limitations

A site inspection was not undertaken as part of this HHIA. All heritage values have been identified through a non-exhaustive desktop study of documentary materials available. There may be additional resources not identified during this assessment that may have provided supplementary information about the historical use activities of the Project Area.

This HHIA has been prepared to assess the historical (non-Aboriginal) heritage of the Project area only, and does not discuss impacts to Aboriginal cultural heritage or archaeology. These have been addressed separately in an Aboriginal Cultural Heritage Assessment Report (ACHAR) prepared for the Project.



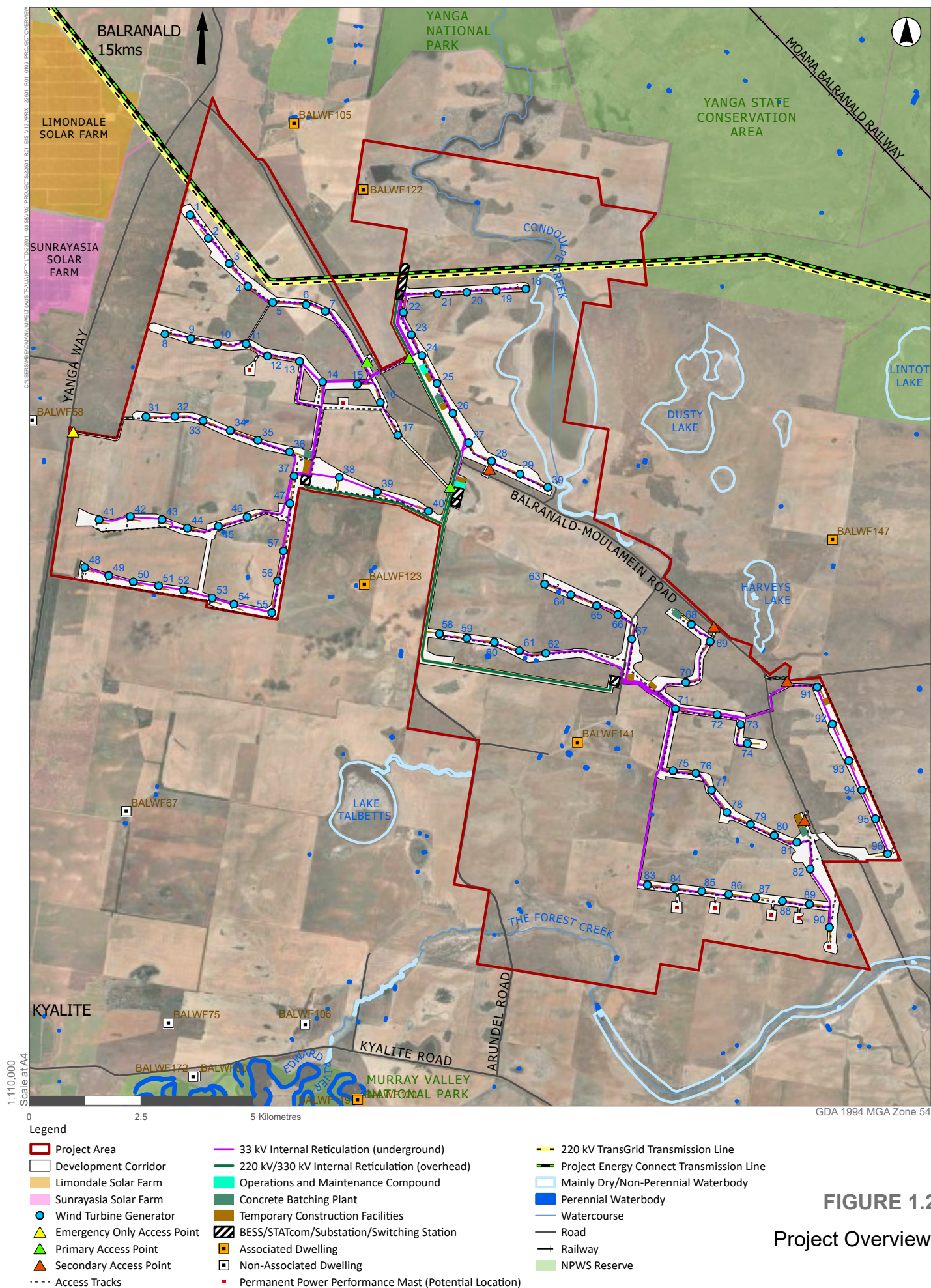


FIGURE 1.2

Project Overview

2.0 Statutory and Policy Framework

The following section provides an overview of the legislative framework relating to the protection and management of historic heritage in NSW. The management and conservation of non-Aboriginal heritage items, relics, archaeological sites, and places is subject to statutory provisions in the NSW government legislation. The relevant statutory and non-statutory heritage listings are discussed in this section.

2.1 Legislation

Heritage Act 1977

The *Heritage Act 1977* (Heritage Act) affords automatic statutory protection to items of heritage significance which form part of the heritage record of NSW (except where these provisions are suspended by other prevailing legislation). The Heritage Act defines a heritage item as a place, building, work, 'relic', moveable object, or precinct.

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

- related to the settlement of the area that comprises NSW, not being Aboriginal settlement
- of State or local heritage significance.

The Heritage Council of NSW (Heritage Council), appointed by the Minister, is responsible for heritage in NSW, as constituted under the Heritage Act. The Heritage Council is a cross-section of heritage experts with Heritage NSW being the operational arm of the Heritage Council.

Under Section 4.41 of the EP&A Act, approval under Part 4 or an excavation permit under Section 139 of the Heritage Act do not apply to SSD projects. Heritage management requirements will be incorporated into the development consent, should the Project be approved. Any further assessment, investigation, or salvage of historical heritage sites, items, or elements within the Project Area are proposed to be undertaken in accordance with the management strategies outlined in **Section 8.0**.

Environmental Planning and Assessment Act 1979

The *Environmental Planning and Assessment Act 1979* (EP&A Act) requires that consideration be given to environmental impacts, including heritage, as part of the land use planning process. The provisions of the EP&A Act allow for the implementation of Local Environmental Plans (LEPs), the standard instrument within which local governments manage impacts to the environment, including heritage. Part 5 Clause 5.10 of the relevant LEPs (being the Murray LEP 2011 and Wakool LEP 2013) provides the statutory framework for heritage conservation.

Due to the Project's classification as an SSD, the approval of the Minister for Planning is required, and an EIS has been prepared under division 4.7 of the EP&A Act. The EIS addresses the requirements of the EP&A Act and regulations and the SEARs (refer to **Section 1.3**).

2.2 Policies and Guidelines

In accordance with the SEARs and best practice heritage standards, this HHIA has been undertaken in accordance with the following guidelines.

NSW Heritage Manual

The *NSW Heritage Manual* (Heritage Office and Department of Urban Affairs and Planning 1996) provides a series of guidelines for undertaking heritage value identification, significance assessment, and management. The guidelines respond to the three steps of the NSW heritage management system, which are focused on the investigation of significance, assessment of significance, and appropriate management of significance.

Archaeological Assessment Guidelines

The *Archaeological Assessment Guidelines* (Department of Urban Affairs and Planning 1996) provides a detailed processes for undertaking archaeological assessments and managing archaeological resources in NSW. An archaeological assessment should include:

- thorough background research to identify themes and environmental conditions to determine the likelihood of archaeological remains being present
- assessment of the significance or likely significance of archaeological remains
- research questions to guide the investigation of any archaeological remains
- appropriate management procedures.

Assessing Significance for Historical Archaeological Sites and ‘Relics’

The *Assessing Significance for Historical Archaeological Sites and ‘Relics’* (NSW Heritage Branch, Department of Planning 2009) considers a broader approach to archaeological significance rather than a focus on the research potential of an archaeological site only. It advocates for archaeological research to contribute to the knowledge of the past in a meaningful way, rather than duplicating information that is known or could be gained from other archaeological remains, documentary records, or oral history.

Statements of Heritage Impact

The *Statements of Heritage Impact* (Heritage Council of NSW 2002) provides a framework for the preparation of a Statement of Heritage Impact (SoHI). The guidelines require a SoHI to:

... explain how the heritage value of an item is to be conserved, or preferable enhanced, by the proposed development ... Where the effect of proposed work is likely to be detrimental to the heritage significance of the item or area, a SoHI needs to argue why such an action is the only viable solution.

The Burra Charter

The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance 1999 (Australia ICOMOS 2013) (the Burra Charter) is a set of best practice principles and procedures for heritage conservation and investigation. The Burra Charter was developed by the Australian group of the international professional organisation for conservation; the International Council for Monuments and Sites (ICOMOS). Although not a statutory document, the Burra Charter sets out the best practice standard for heritage management in NSW and Australia. The policies and legislative guidelines of the Heritage Council and Heritage NSW are consistent with and guided by the Burra Charter.

3.0 Methodology

The purpose of this HHIA is to identify and assess historical heritage items and areas of potential archaeological sensitivity within the Project Area. This section of the report sets out the methodology used to undertake the assessment.

3.1 Background Research

The aim of the desktop research for the present HHIA was to establish a historical context for the Project Area and identify potential heritage values. Historical research for the region and Project Area was compiled based on:

- A review of existing and available background documentation, including primary source materials and heritage studies, to establish a context for the Project Area. These were sourced from the following databases and/or references:
 - National Library of Australia (Trove)
 - Picture Australia, National Library of Australia Photographic Database
 - National Archives of Australia
 - NSW Land and Property Information
 - State Records NSW
 - Heritage NSW Catalogue.
- An updated search of the Australian Heritage Database (which includes results from the World Heritage List, Commonwealth Heritage List [CHL], and National Heritage List [NHL]) and State Heritage Inventory (SHI) (which includes results from the State Heritage Register [SHR], LEPs, and Section 170 registers) to identify listed heritage items within and in proximity to the Project Area.

3.2 Determining Historical Archaeological Potential

Historical archaeology in Australia generally relates to the study of the past using physical evidence in conjunction with historical sources. Historical archaeology is generally defined as comprising the period since European arrival in Australia in 1788. An archaeological resource is the physical evidence of the past and may comprise sub-surface evidence including building foundations, occupation deposits, features and artefacts. Archaeological resources are irreplaceable and have the potential to contribute to our knowledge and understanding of early history using information that is unavailable from other sources (Department of Urban Affairs and Planning 1996:2).

The historical archaeological potential of the Project Area refers to the likelihood that there may be physical evidence relating to the early development and occupation of the Project Area beneath the current ground surface.

3.2.1 Potential

Archaeological potential is defined as ‘the degree of physical evidence present on an archaeological site, usually assessed on the basis of physical evaluation and historical research’ (Heritage Office and Department of Urban Affairs and Planning 1996).

Archaeological research potential of a site is the extent to which further study of relics likely to be found is expected to contribute knowledge about the history of NSW which is not demonstrated by other sites or archaeological resources. The archaeological potential of the Project Area, and its immediate surrounds is assessed using the following gradings:

- **Low Potential:** land use history suggests limited development or use, or there is likely or known to have been quite high impacts in these areas. However, deeper sub-surface features such as wells, cesspits and their artefact-bearing deposits, and deeply embedded footings or piles may survive at depth.
- **Moderate Potential:** land use history suggests limited phases of low to moderate development intensity, or that there have been impacts in this area. A range of archaeological remains may survive, including building footprints and shallower remains or deposits as well as deeper sub-surface features.
- **High Potential:** substantially intact historical archaeological remains could survive in these areas.

The assessment of potential is dependent upon the extent of disturbance that has occurred in the area of the assessment. This has been considered in the following section.

3.2.2 Disturbance

In order to assess the extent of disturbance, the following classifications are used:

- **Low disturbance:** the area or feature has been subject to activities that may have had a minor effect on the integrity and survival of archaeological remains.
- **Moderate disturbance:** the area or feature has been subject to activities that may have affected the integrity and survival of archaeological remains. Archaeological evidence may be present; however, it may be disturbed.
- **High disturbance:** the area or feature has been subject to activities that would have had a major effect on the integrity and survival of archaeological remains. Archaeological evidence may be greatly disturbed or destroyed.

The historical background presented in **Section 4.0** demonstrates that the Project Area has been used primarily for agricultural and pastoral activities since the mid nineteenth century. As such, it has likely been subject to few activities that would have resulted in high levels of disturbance of historical archaeology. Activities that likely occurred within the Project Area that would have resulted in some level of disturbance include:

- construction of dams and irrigation channels, modification of creeklines
- removal of vegetation
- frequent or high intensity livestock gathering or movement
- construction of new dwellings, outbuildings, and occupational structures, including any grading or excavation for footings.

3.3 Assessing Significance

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 caring for 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).

The assessment of significance presented in **Section 6.2** is based on the below processes for built items and archaeological sites.

3.3.1 Built Heritage

The NSW Heritage Manual (1996) 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, now NSW Department of Climate Change, Energy, the Environment and Water [NSW DCCEEW]), and used by the NSW Heritage Council as an assessment format within NSW have been used in the preparation of this HHIA. The seven criteria are:

- **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.
- **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 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 to NSW. Most heritage in NSW is of local significance.

3.3.2 Archaeology

As a component of the holistic concept of significance, archaeological significance has traditionally 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). Archaeological significance has traditionally been linked to archaeological research potential in that ‘a site or resource is said to be scientifically significant when its further study may be expected to help answer questions’ i.e. scientific significance is defined as research potential (Bickford and Sullivan 1984: 23-24).

Following Bickford and Sullivan’s work on archaeological significance (Bickford and Sullivan 1984) the following questions are generally used as a guide to assessing the significance of an archaeological site in terms of its research potential (Criterion (e) of the NSW Heritage assessment criteria):

- 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?

3.4 Determining Impact

The impact assessment has been undertaken using the heritage impact gradings included in **Table 3.1**. The gradings have been developed in accordance with the Heritage NSW guidelines and the Burra Charter (refer to **Section 2.2**).

Table 3.1 Heritage impact gradings

Grading	Definition
Major Adverse	An action which will have a severe, long term and possibly irreversible impact on the heritage item. Major adverse impacts include the partial or complete demolition of a heritage item or addition of new structures in its vicinity that would destroy the visual setting of the items. The action will have a substantial impact on the fabric and or values of the heritage item. Actions of a major adverse impact cannot be fully mitigated.
Moderate Adverse	An action that will have an adverse impact on a heritage item. Moderate adverse impacts include the modification of a heritage item, including partial removal of significant fabric or elements, altering the setting of a heritage item or landscape and construction of new structures which alter the visual setting of the heritage item. Actions of a moderate adverse impact may be able to be reduced through appropriate mitigation measures.
Minor Adverse	An action that will a minor adverse impact on a heritage item. This may include an action affecting only a small element of the heritage item, or a small or partial impact on the setting of a heritage place. The action may be temporary or reversible. Actions of a minor adverse impact are able to be minimised or reduced through use of appropriate mitigation measures.
Negligible	Actions which do not affect the heritage values of a place, or do not affect significant elements, fabric, views, or the setting of a heritage item.
Minor Positive	An action which will bring a minor benefit to a heritage item, such as improving an item’s visual setting.

Grading	Definition
Moderate Positive	An action which will bring a moderate benefit to a heritage item, such as the removal of an intrusive element or fabric, or a substantial improvement to the heritage items setting or reinstatement of obscured views.
Major Positive	Major positive impacts include actions which include a major benefit to the heritage item and add to or increase the heritage values of the item. This includes actions such as the reconstruction of significant elements, removal or substantial intrusive elements or structures in the curtilage or reinstatement of a heritage items visual curtilage or setting. This can also include the reintroduction of former uses of an item which are key to demonstrating its heritage significance.

4.0 Historical Landscape

The following section provides a historical context for the locality to provide an understanding of the significance of the historical landscape that the Project Area is situated within. The Aboriginal cultural heritage background has been discussed extensively in the ACHAR prepared for the Project and will not be repeated here.

4.1 Early European Settlement

The first Europeans to arrive in the Riverina area were the surveyor John Oxley and his team in 1817 as they charted the course of the Lachlan River. The expedition reached as far west as the modern town of Booligal, approximately 150 km northeast of the Project Area. It was here that Oxley declared ‘that the interior of this vast country is a marsh and uninhabitable’, ended the venture, and returned to Bathurst (*Sydney Morning Herald* 26 May 1928: 13). It was another 13 years before Charles Sturt proposed an expedition to chart the Murrumbidgee River. During his travels along the watercourse, Sturt would have passed through the future site of Balranald, approximately 15 km north of the Project Area. In 1836, the surveyor Thomas Mitchell picked up where Sturt had left off, and continued on to map a further 480 km of the Darling River (Baker 1967).

European occupation of the landscape intensified from 1848. In the same year, two townships were initiated in proximity to the Project Area: Balranald, on the Murrumbidgee River to the north, and Kyalite (formerly Wakool Crossing), on the Wakool River to the south. Both places had been selected for the establishment of punt services, enabling colonialists to ferry their possessions, livestock, and other goods into the Riverina. Land was rapidly claimed. By 1847, the entire frontage of the Murrumbidgee and Lachlan Rivers in the area had been taken up (Tonkin Zulaikha Greer Architects [TZG] 2013: 50). Possibly as a result of the intensification of squatting, surveyor Francis McGabe was instructed to assess the western rivers and map the locations of squatters’ establishments (TZG 2013: 50). By the time surveyor Thomas Townsend visited the region in 1851–1852, the squatters were firmly entrenched (TZG 2013: 50).

4.1.1 Squatting Runs

Alexander MacDonald’s map of the Riverina from 1879 shows that the Project Area fell across three main properties: ‘South Yanga’, ‘Moulpar’, and ‘Burrawang’ (see **Figure 4.1**).

Source: Trove, MAP RM 3062

South Yanga made up part of the larger 'Yanga' holding (TGZ 2013: 50). It was selected by William Charles Wentworth, a member of the exploration party that crossed the Blue Mountains in 1813 (*NSW Government Gazette* 18 November 1845 Issue No. 94: 1298). Very quickly, Wentworth began to monopolise the area. Around the same time as he claimed Yanga, he also squatted the adjoining 'Tala' run (TGZ 2013: 50). In 1848, Wentworth claimed the nearby 'Paika' holding as a result of the Order-in Council that required squatters to tender for their lands, and by 1852 he also had possession of 'Nap Nap' to the northwest (TGZ 2013: 50, 54). At this point Wentworth began to divest large quantities of land. In 1853, the pastoralist Augustus Morris purchased the combined holdings of Yanga, Tala, Paika, and Nap Nap (Bernard 1974).

Junction Rivers Wind Project
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Moolpa was initially claimed by John Henry Stonehouse Lydiard c1855. In 1858, Moolpa was listed for sale (*The Argus* 20 September 1858: 8) (refer to **Figure 4.2**). It was advertised as consisting of 320,000 acres (including the Moolpa back run and 'Moulamein' blocks A and B) and containing 5,000 cattle, 14,360 sheep, 30 horses, and a variety of machinery and yards (*The Argus* 20 September 1858: 8). Also on the property was 'a comfortable six-roomed cottage, with outbuildings, store, stable, men's huts, [and] woolshed' (*The Argus* 20 September 1858: 8). The run was purchased shortly after by the brothers George Augustus Mein and Pulteney Mein.

It is unclear when Burrawang was first claimed or who it was claimed by. The run first appears in records from 1864, when it was owned by the Mein brothers. A reference in 1922 indicates that it was 'resumed [as] part of the Yanga station' (*Sydney Morning Herald* 13 June 1922: 7).

With the withdrawal of Wentworth from the area following the sale of Yanga, Tala, Paika, and Nap Nap, Morris became the predominant landowner. In 1864, Morris purchased Burrawang from the Mein brothers (*Deniliquin Stock Report* 3 September 1864: 3). *The Argus* (30 August 1864: 4) reported that:

The land disposed of was necessary to fit in Mr. Morris's extensive stations on the lower Murrumbidgee. This adjustment of boundaries, making stations more uniform and consequently more useful and compact, it getting much in vogue. Station-holders are enlarging their views on this head, by disposing to their neighbours large slices of territory of greater use to the latter than to the original lessees.

Shortly after his purchase, Morris is declared bankrupt. In April 1866, the Tala, Woogora, Lurica, Yanga, and Burrawang runs were listed for sale (*The Argus* 19 April 1866: 3) (refer to **Figure 4.3**). The Yanga and Burrawang runs were included in one sale lot. At the time of listing, the two runs totalled an area of 111,700 acres, of which 28 miles were fenced and held approximately 4,000 cattle and 20 horses (*The Argus* 19 April 1866: 3). The advertisements stated that the properties 'cannot be surpassed by any in Riverina' (*The Argus* 19 April 1866: 3).

STATION on the LOWER EDWARD.—KAYE and BUTCHART have been favored with instructions from Messrs. Mackinnon and Lydiard to **SELL by PRIVATE CONTRACT**, their magnificent squatting property of **MOOLPA**, on the Lower Edward River, in New South Wales with the following stock, viz. :—
 5,000 head of cattle
 10,800 sheep
 60 rams
 Along with which will be given in,
 3,500 lambs
 30 horses, worth at least 1,000l.
 2 teams of working-bullocks
 3 drays
 8 large iron tanks
 Hurdles, yards, station implements,
 And,
 Household furniture.
 The stores must be taken at a valuation.
 This station is well known to be one of the finest in New South Wales, it possesses 98 miles' frontage to the north bank, and 8 miles to the south bank of the Edward River, also 6 miles to the north bank of the Yarran Creek, and 4 to its south bank, with a vast extent of back country (estimated at 500 square miles), including Moulamein blocks A and B, and Moolpa back run, as laid down in the Government charts.
 The country consists of salt-bush and fine grassy plains. The agents can testify to the grazing capabilities and value of the station, from the fact that the returns during last 12 months have been upwards of £19,000. Being in New South Wales territory, the proprietors are entitled to a 14 years' lease.
 The improvements consist of a comfortable six-roomed cottage, with outbuildings, store, stable, men's huts, woolshed, stockyard and grass paddock. In short, the station is in complete working order, and is now in the market solely on account of the proprietors' intention of returning to England.
 For further particulars and prices apply to Kaye and Butchart, 56 Bourke-street west, Melbourne.

Figure 4.2 Advertisement for Moolpa

Source: The Argus 20 September 1858: 8.

THURSDAY, 31st May, 1866.—Important Sale of Valuable Squatting Properties in Riverina.
POWERS, RUTHERFORD, and Co. have received instructions from Augustus Morris, Esq., to **SELL by PUBLIC AUCTION** (if not previously disposed of), at Morton's Hotel, Bourke-street, Melbourne, on Thursday, the 31st day of May, at 2 o'clock,
 His magnificent stations and stock as enumerated below, viz. :—
TALA, WOOGORA, And LURICA.
 Situate on the Lower Murrumbidgee, Together with
 4000 bullocks, mixed ages
 2000 cows, chiefly speyed, mixed ages
 Total, 6000, more or less
 And
 25 horses, broken to saddle and harness.
 The above stations form one compact block of country, the estimated area of which is 134,160 acres, and having a frontage of over 40 miles to the Murrumbidgee River. There are also numerous permanent creeks and lakes, which afford an ample supply of water at all seasons. The cattle are all sound and healthy, none being too old for fattening. The improvements consist of four-roomed Cottage, with stock-yard; also, Horse Paddock, containing about 850 acres, and large collecting yards.
 The boundaries are strictly defined, the back portion being fenced with a substantial cattle-proof fence, nearly new. About 16 miles would completely fence in the whole property, which will carry 10,000 head of cattle in ordinary seasons.
 Also,
SOUTH YANGA and BURRAWONG,
 In the same district, together with
 2000 bullocks, mixed ages
 2000 cows, chiefly speyed, do
 Total, 4000 more or less
 And 20 horses, broken to saddle.
 These runs adjoin each other, South Yanga having a water frontage to Yanga Lake, and Burrawong a frontage of ten miles to the Edwards River, besides other creeks and lakes. The estimated area is 111,790 acres. There is twenty-eight miles of fencing, a considerable portion of which is sheep proof, and the whole is in good order, having been only recently erected.
 With these runs will also be sold the right of run to the Cannally Station, with eighteen miles river frontage, up to the 1st day of March, 1867.
 The above properties are so well known that the auctioneers deem it unnecessary to comment upon them to any extent; suffice it to say, that they cannot be surpassed by any in Riverina. They only require to be inspected to make this manifest to intending purchasers. It may be added, that the cattle cannot be surpassed, either for breeding or quality, having been carefully selected by competent judges from the best herds on the Clarence and Richmond Rivers.
 Further particulars can be obtained at the offices, 122 Queen-street.

Figure 4.3 Advertisement for South Yanga and Burrawang

Source: The Argus 19 April 1866: 3.

4.1.2 Establishment of the Townships

As the population of the area increased, townships were quickly formalised. There are two towns in the vicinity of the Project Area: Balranald and Kyalite. Both were established as key places for the transportation of stock and provisions over the major rivers.

The location of Balranald to the north of the Project Area was first visited in 1848 by George MacDonald, the Commissioner for Crown Lands in the Lower Darling District. Shortly after his visit and proclamation of the township site, both a general store and public house were established. In 1851, Balranald was gazetted as an official settlement and the first 35 urban allotments were submitted to public auction in early 1852.

In spite of the initial success, economic interests in the area quickly plummeted as the hype of the Victorian goldrush increased through the 1850s to late 1860s. Whilst having the appearance of a thriving population of almost 700 people by 1860 (Vaugh 1859: 226–227), Balranald was described as an ‘obscure and miserable township ... being one of those rowdy places for which the Australian bush interior has become famous’ (*Sydney Morning Herald* 23 August 1858: 2). It was also apparently the location for a series of unfortunate events:

The public will bear in mind that it was at Balranald that ... the publican was killed ; the doctor who attended the trial [of the murderer] was drowned on his way home; the widow, having gone to Deniliquin to get married, when absent her child was burned to death; and the messenger sent to inform her of the accident was drowned while crossing the Murrumbidgee (*Sydney Morning Herald* 23 August 1858: 2).

On 15 September 1860, Robert O’Hara Burke and William Wills’ expedition party arrived in the town. It was there that they left a variety of ‘goods in charge of the storekeeper’ and controversially dismissed three men from the exploration party (*Mount Alexander Mail* 28 September 1860: 4). The remaining party members departed from Balranald two days later.

Balranald eventually recovered from this initial bad reputation. In 1887, the town was described as ‘a squarely-built little town’ that is ‘centrally situated for traffic [where] business is not at all dull, and that for enterprise its inhabitants are amongst the foremost in the Riverina’ (*Riverina Recorder* 17 August 1887: 5).

Comparatively, Kyalite, initially named ‘Wakool Crossing’ or ‘Wakool Junction’, did not share in the same success as Balranald during the nineteenth century. This is despite a very similar developmental timeline. In 1848, Henry Talbot established a ferry service on the banks of the Wakool River, which soon grew to include an inn and a general store (Balranald Shire Council 2010: 4). The population remained small and transient, and the township made no notable appearances in local or regional newspapers for a significant portion of the nineteenth century. This is despite the visit of Burke and Wills’ expedition party on 13 September 1860, prior to their departure for Balranald.

The growth of both towns was limited due to their remote location.

4.1.3 Land Subdivision Phase One

By the late nineteenth century, the western NSW landscape was characterised by extensive runs and few landholders. In 1884, the *Crown Lands Act* was introduced in an attempt to reform the system and break the squatters’ monopoly. The Act divided large pastoral runs into new tenure types, including Leasehold Areas (short-term leases) and Resumed Areas (smaller homestead leases). In the early 1890s, a number of smaller agricultural blocks were selected from the Burrawang and Yanga runs.

A 1923 map (**Figure 4.4**) depicts homesteads across the landscape around the Project Area, demonstrating how runs were successively subdivided, purchased, and renamed. According to this map, by the end of the nineteenth century, prior to the subdivision of the 1920s (refer to **Section 4.2.2**), three homesteads were located within and in proximity to the Project Area: ‘Lynwood’, ‘Oldham Park’, and ‘Spring Plain’. An additional three homesteads not depicted on the 1923 map were also present: ‘Tyndale’, ‘Arundel’, and ‘Myall Farm’. The locations of these homesteads in relation to the Project Area are depicted in **Figure 4.7**.

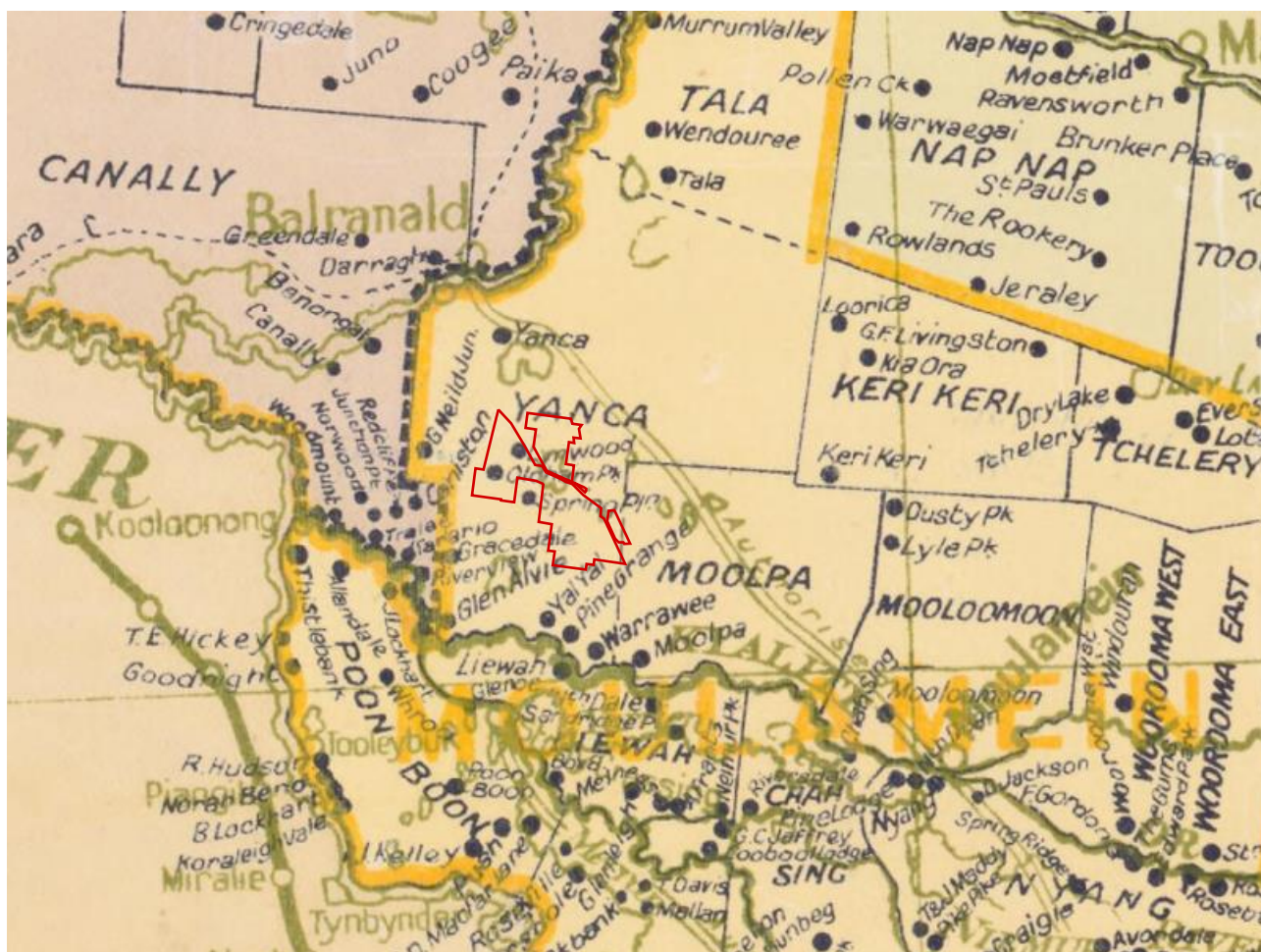


Figure 4.4 Detail from H.E.C Robinson's 1923 map of NSW pastoral stations. Red annotations show the approximate location of the Project Area.

Source: Trove, MAP G8971.G46 [1923].

Limited historical records are available to document the growth, and sometimes decline, of the properties and their associated homesteads. Where information is available, it is generally found in the obituaries dedicated to the 'Burrawong settlers' of the late nineteenth century. The following **Table 4.1** discusses the information that has been able to be identified.

Table 4.1 Homesteads in the vicinity of the Project Area

Homestead	Date Selected	Selector	Summary
Arundel	1890	William Webb	Arriving in the Balranald area in 1890, brothers William and Alfred Stephen Webb purchased neighbouring portions of land, naming them Arundel and Merwin, respectively. When the brothers left the Balranald area in 1910, the <i>Riverina Recorder</i> (20 July 1910: 2) declared that: 19 years ago ... [the properties] were then a wilderness, overrun with rabbits. Today, every acre was improved and ... supporting a great number, if not in luxury, at least in comfort. A homestead was constructed by William Webb on Arundel, however, no homestead associated with Merwin could be found. It is unknown whether the brothers shared a residence, given the proximity of the landholdings. The properties passed through several hands before being purchased by the Hodgson family.
Spring Plain	1892	George Trafford Wood	Documentary references of the station are scant. The majority of references that could be identified are concerned with the rabbit plague of the 1910s (refer to Section 4.2.1). After Wood's death in 1939 and a protracted issue with his will (<i>Riverine Grazier</i> 8 April 1941: 4), a large proportion of the Spring Plain estate was claimed by the Rural Bank of NSW.
Tyndale	1892	John Isles Brown	Little documentary evidence discussing Tyndale could be identified. One article from 1935 stated that the property 'has been fully improved for many years' (<i>Riverina Recorder</i> 16 November 1935: 4), which suggests that the land had been fenced, subdivided, and potentially had permanent water. Further references to the property are generally with regards to the rabbit plague (refer to Section 4.2.1). After the death of John in 1930, the estate was managed by his widow and sons.
Lynwood	1893	Frederick William Grabau	An emigrant from Denmark, Grabau gained agricultural experience working on properties around the Echuca area. After selecting the Lynwood property, Grabau had intended to pursue wheat cultivation, but: His efforts in this direction were attended with little success. He managed to grow good crops in favourable seasons, but generally speaking he found that wheat growing alone was unprofitable, and he then turned his attention to grazing (<i>Riverina Recorder</i> 12 March 1932: 3). In addition to agriculture, the Grabau family also hosted a local school 'on the verandah of Lynwood homestead' (O'Halloran 2012: 369). A teacher — subsidised by the NSW Government — resided at the homestead, and provided educations for the Grabau children and other local families, such as the neighbouring Nield family (O'Halloran 2012: 369). Following Frederick's retiring to Melbourne in 1918 (<i>Riverina Recorder</i> 12 March 1932), the property was managed by his sons. In 1927, the homestead was extended (O'Halloran 2012: 371). Due to the lack of natural water on the property and tough conditions, Lynwood was eventually subdivided and sold to the National Bank of Australasia Limited and the Nield family.

Homestead	Date Selected	Selector	Summary
Oldham Park	1983	George Nield	Prior agricultural experience in Victoria gave Nield a wealth of farming knowledge and, shortly after acquiring the property, he had it 'fenced, cleared, subdivided, and a fair proportion under cultivation, as well as permanently watered' (<i>Riverina Recorder</i> 1 August 1923: 2). The family appear to have been very socially affluent, with newspapers from the early twentieth century reporting a variety of events that took place at the homestead. No contemporary description of the homestead could be identified, however, it was likely extensive based on the events it held. One such event included the seventeenth birthday party of Elizabeth Nield, where: ... all the residents within a radius of 20 miles were present ... About 90 persons sat down to a poultry dinner [followed by] a supper ... at midnight when about 40 couples sat down ... and before the assemblage left on Saturday tea and cake was again served ... [A] splendid time was spent by all dancing and singing, which was kept up till daylight' (<i>Riverina Recorder</i> 17 August 1904: 3). After the death of George Nield in 1923, the property was managed by his son, John (also known as Jack). Mentions of Oldham Park in local newspaper articles cease following the death of John in 1949 and no advertisement for sale of the property could be identified. A 1948 parish map indicates that the portion containing the homestead had been transferred to the Australian Mercantile Land and Finance Company Limited. The western allotment adjacent to the road was eventually sold to the Minney family.
Myall Farm	1896	David Bush	Bush, an emigrant from Scotland, arrived in the Balranald area in 1892 and 'engaged in fencing contracts, which were all carried out in a most satisfactory manner' (<i>Riverina Recorder</i> 18 May 1929: 2). Bush then tried his luck on the goldfields at Coolgardie, before returning to Balranald and selecting his property in 1896. His obituary stated that with: ... perseverance through periods of drought [Bush] managed to pull through successfully ... Having fenced and improved [the land] he was enabled to dispense with agriculture to a great extent, and go in for grazing, which he found more profitable and not nearly so laborious (<i>Riverina Recorder</i> 18 May 1929: 2). Following Bush's death, the property passed through several hands.

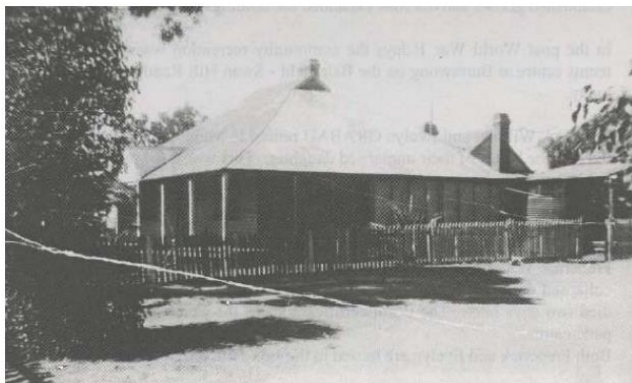


Figure 4.5 Lynwood homestead, date unknown **Figure 4.6** Oldham Park homestead, c1900

Source: O'Halloran 2012.

Source: Jackie Bario, Balranald Historical Memorabilia Facebook Group.

Additional landholders were present within the Project Area, however, it appears that no homesteads were constructed on these properties.

The families who took up land in the Burrawong area in the late nineteenth century were often dubbed the 'pioneers' of the region. Upon arrival, they faced tough conditions, including isolation from other towns due to a lack of railway, a harsh landscape and lack of reliable water, and bushfires.



FIGURE 1.1

Late Nineteenth Century Homesteads

4.2 Twentieth Century Development

4.2.1 The Rabbit Problem

In 1859, English emigrant Thomas Austin released a breeding population of 24 rabbits on his property near Geelong in order to provide shooting sport. The rabbits multiplied rapidly, and by 1877 the Riverina area was being plagued by large numbers wreaking havoc for the pastoralists.

The *Pastures and Stock Protection Act 1880* (NSW) provided for the establishment of a Protection Board to be set up in each sheep district of NSW, with the primary task of each board to ensure ‘the destruction of all noxious animals’ (State Records Authority of NSW 2023). The Burrawong area fell at varying times within the Balranald, Moulamein, and Hay Boards.



Figure 4.8 Rabbit shooters on ‘Barokaville’ near Walgett, c1900

Source: Mitchell Library, State Library of NSW, FL1682004.



Figure 4.9 Pile of rabbit skins on ‘Rocky View’, near Alectown, c1900

Source: Mitchell Library, State Library of NSW, FL1672630.

From the early twentieth century, the observations of rabbit populations and activity on properties around Balranald as recorded by ‘rabbit inspectors’ were published in the local newspaper. Inspections at Oldham Park in 1912 yielded the report of ‘all satisfactory’ (*Riverina Recorder* 19 June 1912: 4). Unfortunately, rabbit populations at Arundel and Merwin, Lynwood, and Tyndale were not as well managed, with reports of ‘all unsatisfactory’ and ‘requires attention’ (*Riverina Recorder* 19 June 1912: 4). The situation was quickly rectified, with Lynwood, Spring Plain, and Tyndale being reported as ‘good work has been done, rabbits well under control’ by 1913 (*Riverina Recorder* 15 October 1913: 3). Overall, one inspector, W Fraser, reported that the rabbit population was being managed adequately:

I have visited all holdings in my division ... and find that taking the district as a whole rabbits are not nearly so numerous as I anticipated. They are patchy. A good many owners are doing their best to cope with the pest, while others are not in my opinion doing sufficient work to keep them in check ... If owners would work together, more especially those in groups, no difficulty would be experienced in keeping the rabbits well under (*Riverina Recorder* 27 November 1907: 2).

Rabbit population continued to fluctuate over the remainder of the century, generally as a response to prevailing draught conditions. In the 1920s, the situation had worsened again. Inspections of Arundel and Lynwood resulted in the observations of ‘numerous signs of rabbits ; not satisfactory’ (*Riverina Recorder* 25 May 1929: 4). The situation was somewhat under control again by the end of the 1930s, when Arundel, Spring Plain, Myall Farm, and Oldham Park were all reported as ‘satisfactory’ (*Riverina Recorder* 25 October 1941: 3). This was shortly before the plague of the late 1940s.

In 1950, biological control of rabbit populations was attempted through releasing the myxomatosis virus into feral populations. It initially worked with great success and reduced the wild rabbit population by approximately 95 per cent (RSCPA 2023). Natural resistance to the virus has since increased, and the rabbit population continues to fluctuate.

4.2.2 Land Subdivision Phase Two

Whilst the *Crown Lands Act 1884* managed to break up some of the larger squatter runs, ultimately the Act did not succeed in its aims, as settlement continued to proceed very slowly and landholders were still able to accumulate subdivided areas into large estates (Australian Bureau of Statistics 2012).

Between 1901 and 1908, a series of Closer Settlement Acts were enacted in a further attempt to encourage increased subdivision of the large pastoral estates. They were particularly aimed at land that ‘was to be suitable for agriculture, within reach of a railway line ... and able to be divided into portions large enough for a family to prosper’ (Small 2018: 111). As the Balranald area was not to be serviced by a railway line until 1926, these Acts had little effect on the large estates of the western Riverina.

This changed in the 1920s. In 1922, the *Border Railways Act*, which authorised the construction of cross-border railway lines in the Riverina, was passed by the Victorian and New South Wales Parliaments. One aim of these Acts was facilitate ‘closer settlement in the district’ (*The Maitland Weekly Mercury* 26 June 1926: 8). The Lands Department requested that:

... the owners of large estates within the influence of the railways were asked to subdivide a reasonable proportion of their respective properties ... in preparing suitable designs for settlement, and providing advances for purchasers through the Rural Bank (*The Maitland Weekly Mercury* 26 June 1926: 8).

Along the Moama to Balranald Line, 38 original runs were subdivided into a further 378 smaller holdings (*The Maitland Weekly Mercury* 26 June 1926: 8). This included Yanga, Moolpa, and Burrawang (refer to **Figure 4.10** and **Figure 4.11**). Once again, the aim for closer settlement was not achieved. Despite the intention that these smaller blocks would provide for a higher density population, many of the blocks were still retained by major landholders and remained grouped as large properties.

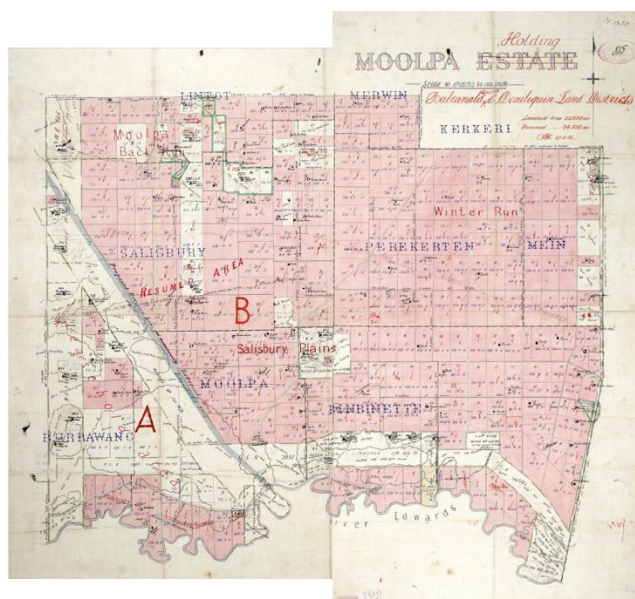
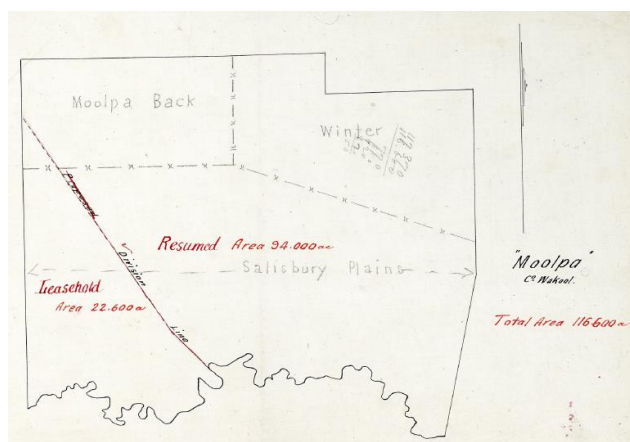


Figure 4.10 Moolpa prior to (left) and following subdivision (right) following the *Crown Lands Act 1884* and *Border Railways Act 1922*

Source: NSW Land Registry Services, Map No. 573474.

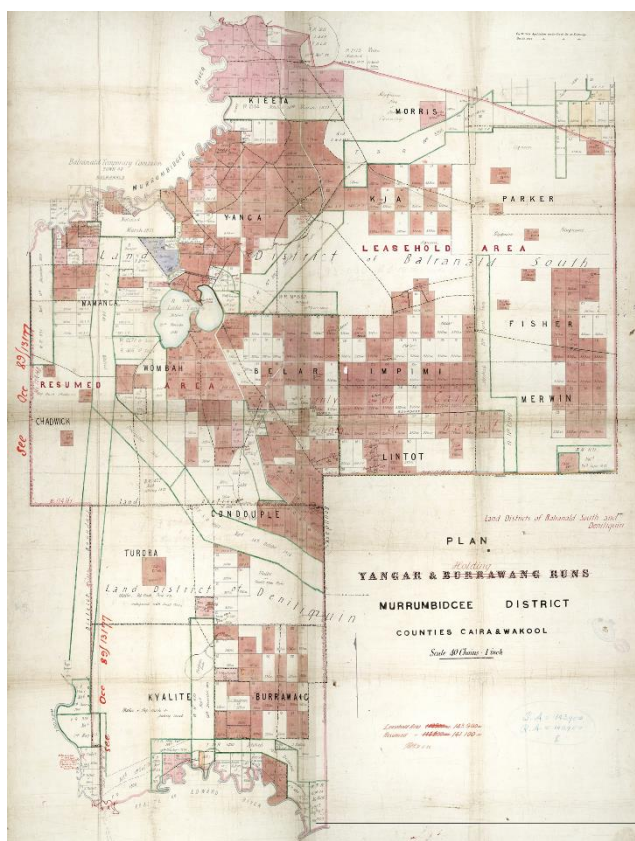
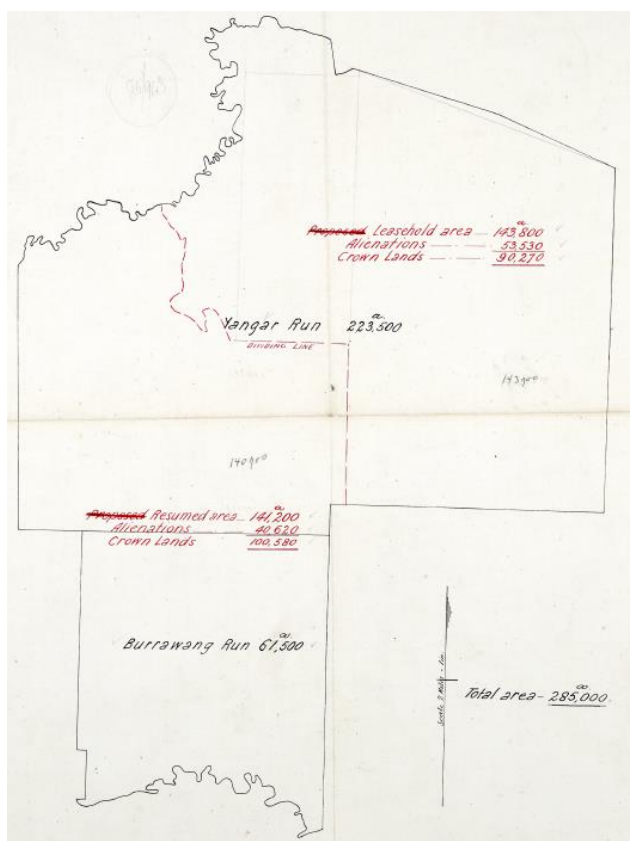


Figure 4.11 Yanga and Burrawang prior to (left) and following subdivision (right) following the *Crown Lands Act 1884* and *Border Railways Act 1922*

Source: NSW Land Registry Services, Map No. 573708.

4.3 Current Landscape

4.3.1 Aerial Photography Review

The current landscape remains largely unchanged since the early twentieth century. The area is divided into large pastoral landholdings, with isolated homesteads spread out across the properties. Aerial photography demonstrates that development within the Project Area has been limited. Where new infrastructure is present, it generally consists of sheds, livestock yards and shelters, and excavations for dams (refer to **Figure 4.12** to **Figure 4.14**).

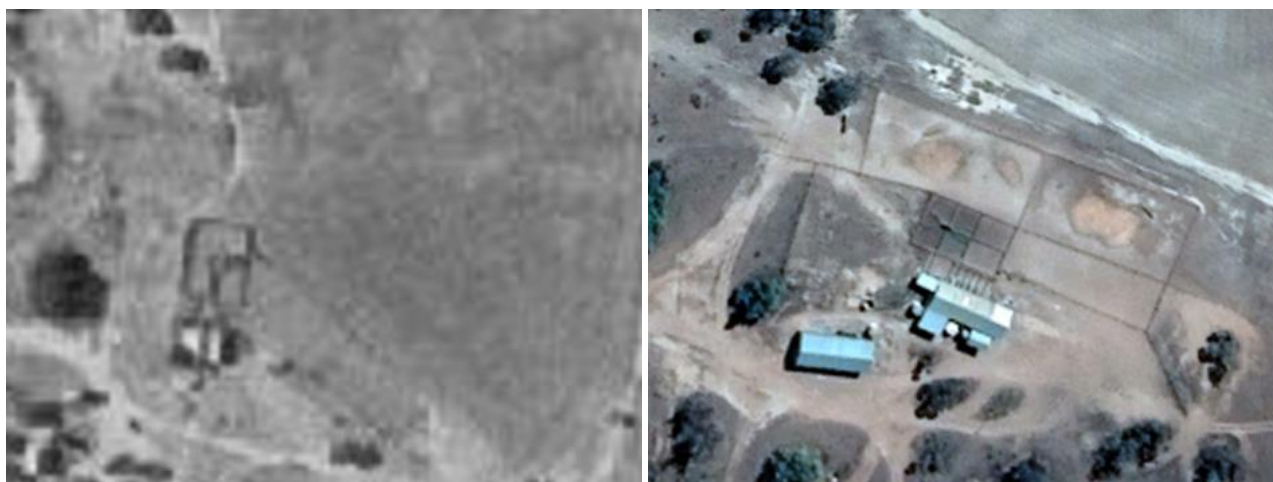


Figure 4.12 New sheds and animal yards adjacent to Myall Farm homestead. Location photographed in 1964 (left) and 2018 (right).

Source: NSW Spatial Services, Historical Imagery 1084_1C_098 (left) and Google Earth CNES/Airbus 2023 (right).



Figure 4.13 New shelter adjacent to Lynwood homestead. Location photographed in 1990 (left) and 2021 (right).

Source: NSW Spatial Services, Historical Imagery 3742_05_042 (left) and Google Earth CNES/Airbus 2023 (right).



Figure 4.14 Three new dams adjacent to Spring Plain homestead. Location photographed in 1961 (left) and 2021 (right).

NSW Spatial Services, Historical Imagery 1084_3C_049 (left) and Google Earth CNES/Airbus 2023 (right)

Four late nineteenth century homesteads were constructed within the Project Area (refer to **Section 4.1.3**). Of these, only Arundel remains occupied (**Figure 4.15**). Comparison between the 1961 and 2018 aerals show that the homestead site has seen considerable development, with a new dwelling constructed on the southeast corner of the site. Lynwood homestead was destroyed in a bushfire in the latter half of the twentieth century (O'Halloran 2012: 371). The central building depicted in the 1961 aerial has disappeared by the 1974 aerial, and the whole complex is decayed in the 1990 aerial (**Figure 4.16**). The 2018 aerial shows the site has been cleared (**Figure 4.16**). Oldham Park and Tyndale were likely vacated in the late twentieth century and simply allowed to fall into disrepair. Maintenance of the Oldham Park homestead complex appears to continue in the 1974 aerial, with some decay evident in the 1990 aerial, and total dereliction in the 2021 aerial (**Figure 4.17**). Tyndale was likely abandoned somewhat earlier, with signs of disrepair already visible in the 1974 aerial (**Figure 4.18**). A new shed was constructed in the 1980s, indicating that some activity was occurring around the homestead site, although the 2018 aerial shows little improvement to the condition of the grounds (**Figure 4.18**).



Figure 4.15 Arundel homestead in 1961 (left) and 2018 (right)

Source: NSW Spatial Services, Historical Imagery 1084_3C_048 (left) and Google Earth CNES/Airbus 2023 (right).

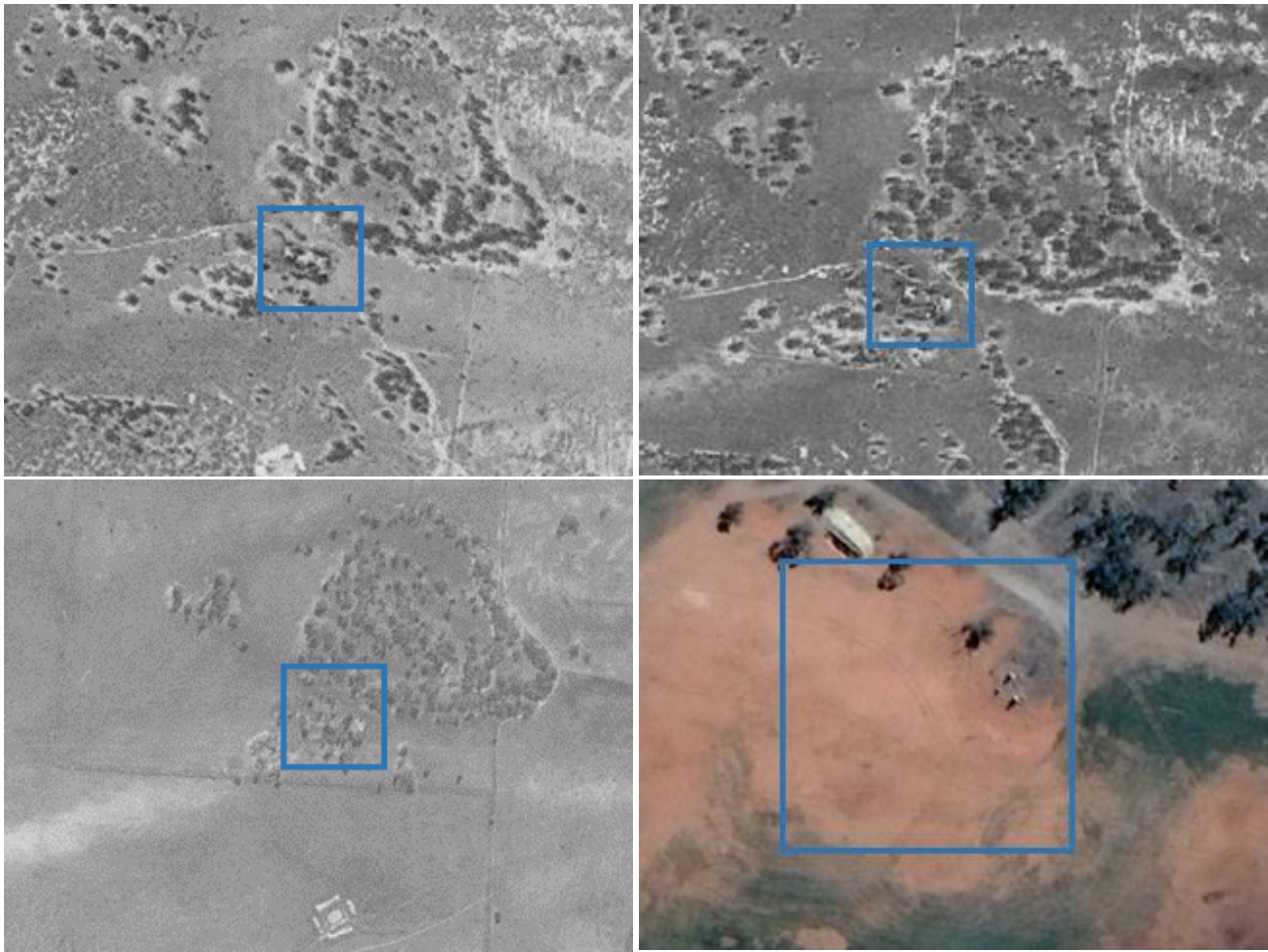


Figure 4.16 Lynwood homestead in 1961 (top left), 1974 (top right), 1990 (bottom left), and 2018 (bottom right)

Source: NSW Spatial Services, *Historical Imagery* 1084_2C_069 (top left), 2192_04_104 (top right), 3742_05_042 (bottom left), and Google Earth CNES/Airbus 2023 (bottom right).

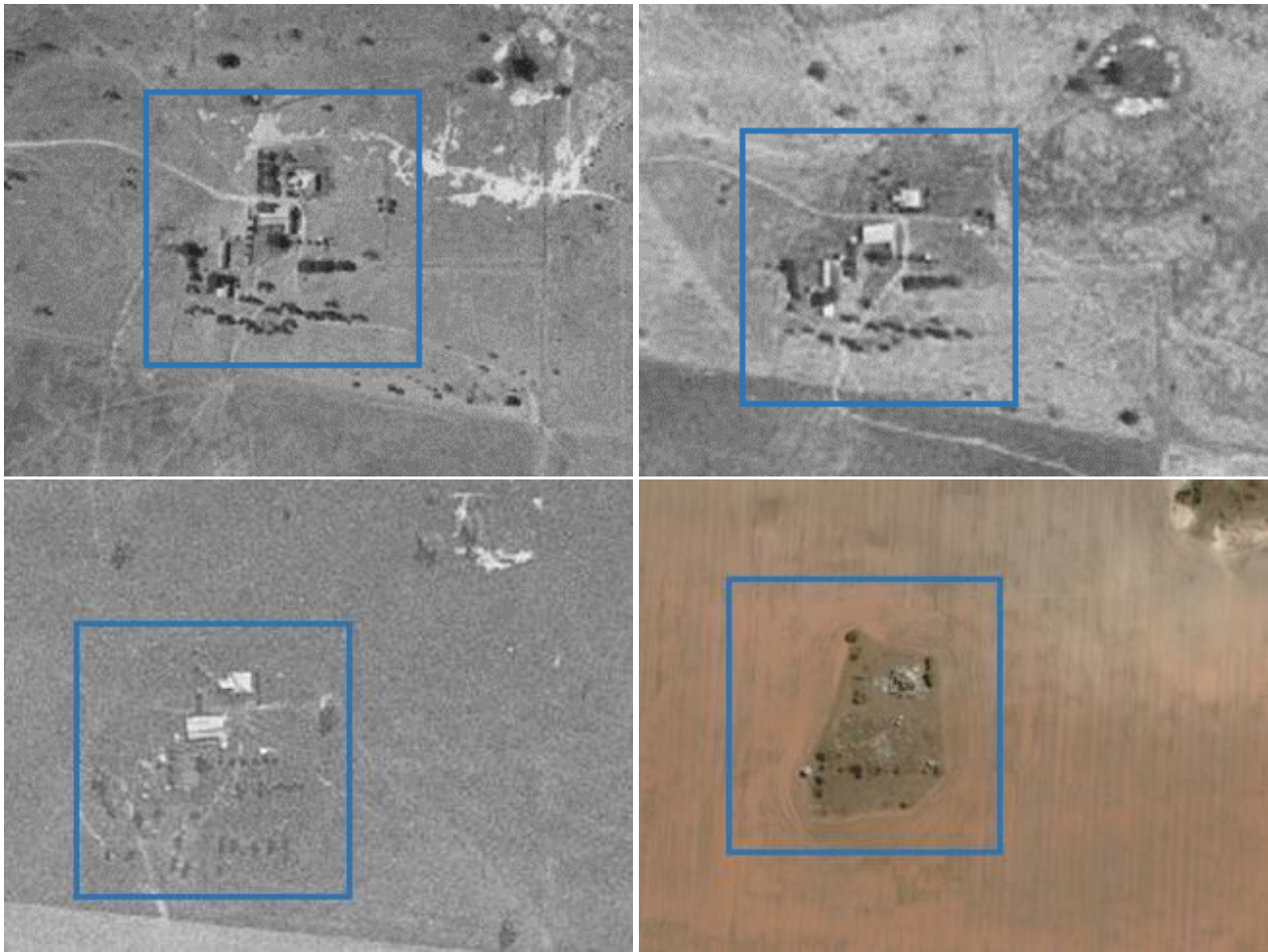


Figure 4.17 Oldham Park homestead in 1961 (top left), 1974 (top right), 1990 (bottom left), and 2021 (bottom right)

Source: NSW Spatial Services, Historical Imagery 1084_2C_069 (top left), 2192_04_104 (top right), 3742_05_042 (bottom left), and Google Earth CNES/Airbus 2023 (bottom right).

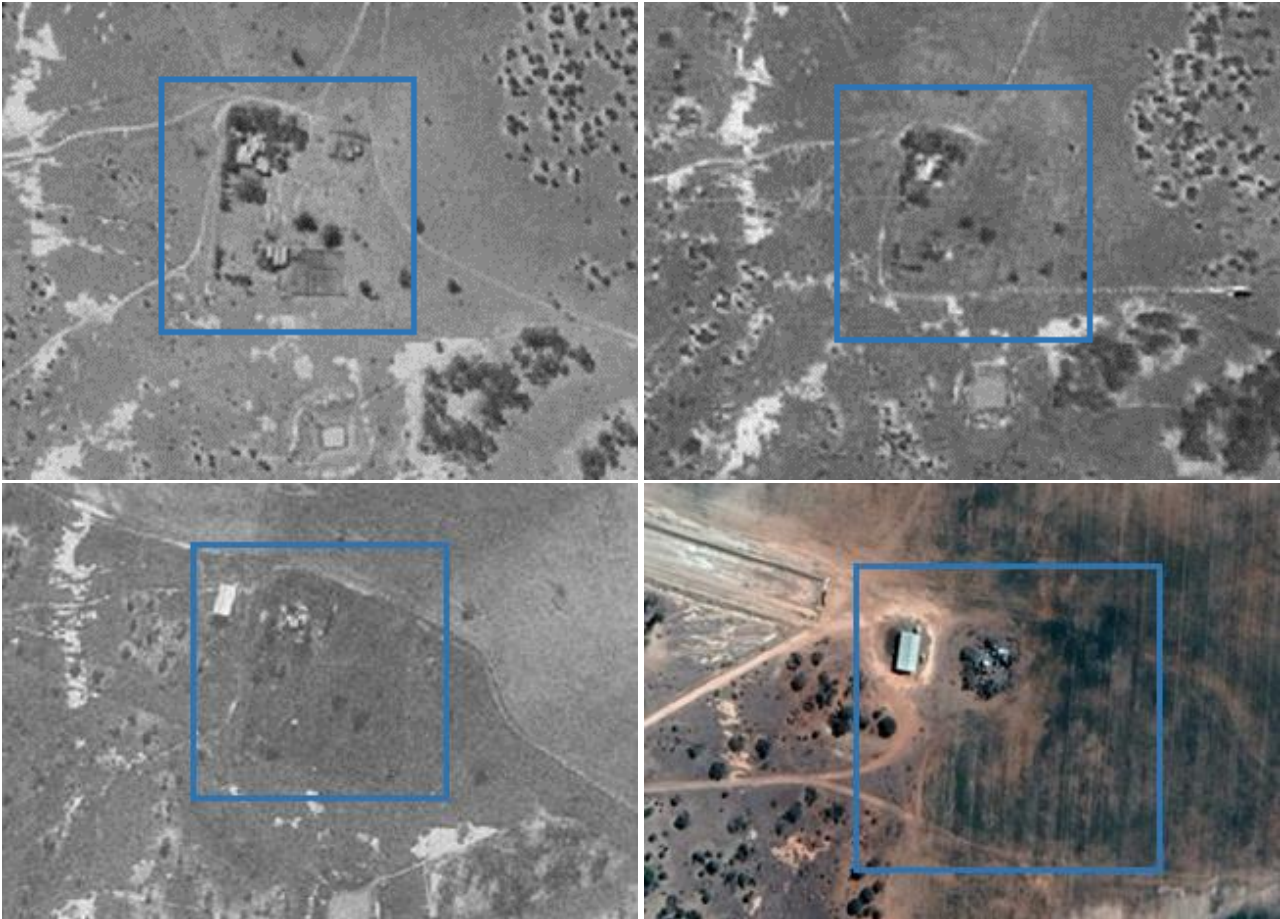


Figure 4.18 Tyndale homestead in 1961 (top left), 1974 (top right), 1990 (bottom left), and 2018 (bottom right)

Source: NSW Spatial Services, Historical Imagery 1084_3C_050 (top left), 2192_04_105 (top right), 3742_05_070 (bottom left), and Google Earth CNES/Airbus 2023 (bottom right).

4.3.2 Landholder Photographs

The current landholders of the Project Area were contacted on 2 February to 3 February 2023. They were asked a number of questions about the heritage landscape of the properties, including:

- when the abandoned homesteads (Lynwood, Oldham Park, and Tyndale) were last occupied
- if any visible scatters of artefacts (e.g. glass, ceramic, metal) are visible around the remains of the abandoned homesteads
- if the remains of the abandoned homesteads had been impacted by any construction works or agricultural activities
- if any other historical structures, items, or features (e.g. squatter's huts, pastoral buildings, graves) are present in the area.

The last date of occupation for the abandoned homesteads was not known by any landholders. Extensive artefact scatters are visible around the remains of Oldham Park and Tyndale, whilst few artefacts are present at the remains of Lynwood. No modern works had impacted the Oldham Park or Tyndale remains, however, cropping has been undertaken right up to the surface structures present at Lynwood.

Recent photographs of Oldham Park (**Figure 4.19**) and Tyndale (**Figure 4.20**) have been provided. A photograph of the Lynwood remains was included in the Aboriginal Cultural Heritage Assessment Report (ACHAR) (NGH Pty Ltd, 2023) (**Figure 4.21**).



Figure 4.19 Oldham Park, February 2023

Source: Courtesy of John Standen.



Figure 4.20 Tyndale, February 2023

Source: Courtesy of John Standen.



Figure 4.21 **Lynwood, March–April 2022**

Source: NGH, 2023.

All landholders indicated that they are not aware of any other potential heritage structures, items, or features located on the properties.

5.0 Identified Heritage Values

The following section details the results from the register searches. It also provides a summary of other assessments of historical heritage and archaeological potential in the landscape surrounding the Project Area.

5.1 Relevant Heritage Listings

Updated searches of relevant heritage databases and resources were undertaken on 19 February 2024. This included searches of:

- Murray LEP 2011 and Wakool LEP 2013 (now amalgamated under the draft Murray River LEP 2021), and Balranald LEP 2010
- the SHI, which includes places and items listed on the SHR, LEPs, and interim heritage orders
- the NSW DCCEEW Historic Heritage Information Management System (HHIMS)
- the Australian Heritage Database, which includes places and items listed on the World Heritage List, NHL, CHL, the Register of the National Estate (RNE), and List of Overseas Places of Historical Significance to Australia.

The searches identified no listed heritage items located within the Project Area. The closest listed heritage item is the Yanga Pastoral Station Complex (NSW DCCEEW HHIMS 10626), approximately 9.6 km north of the Project Area. Several other registered heritage items are located within the township of Balranald. These are detailed in **Table 5.1** and depicted in **Figure 5.1**.

Table 5.1 Listed heritage items located within 20 kilometres of the Project Area

Proximity to Project Area	Item	Listing	ID
9.6 km	Yanga Pastoral Station Complex	DCCEEW HHIMS	10607
13.8 km	Dippo Ceremonial Group	Balranald LEP 2010	I4
14.1 km	Fish Traps	Balranald LEP 2010	I3
14.8 km	Aboriginal Cemetery	Balranald LEP 2010	I1
14.9 km	Fire Station	Balranald LEP 2010	I2

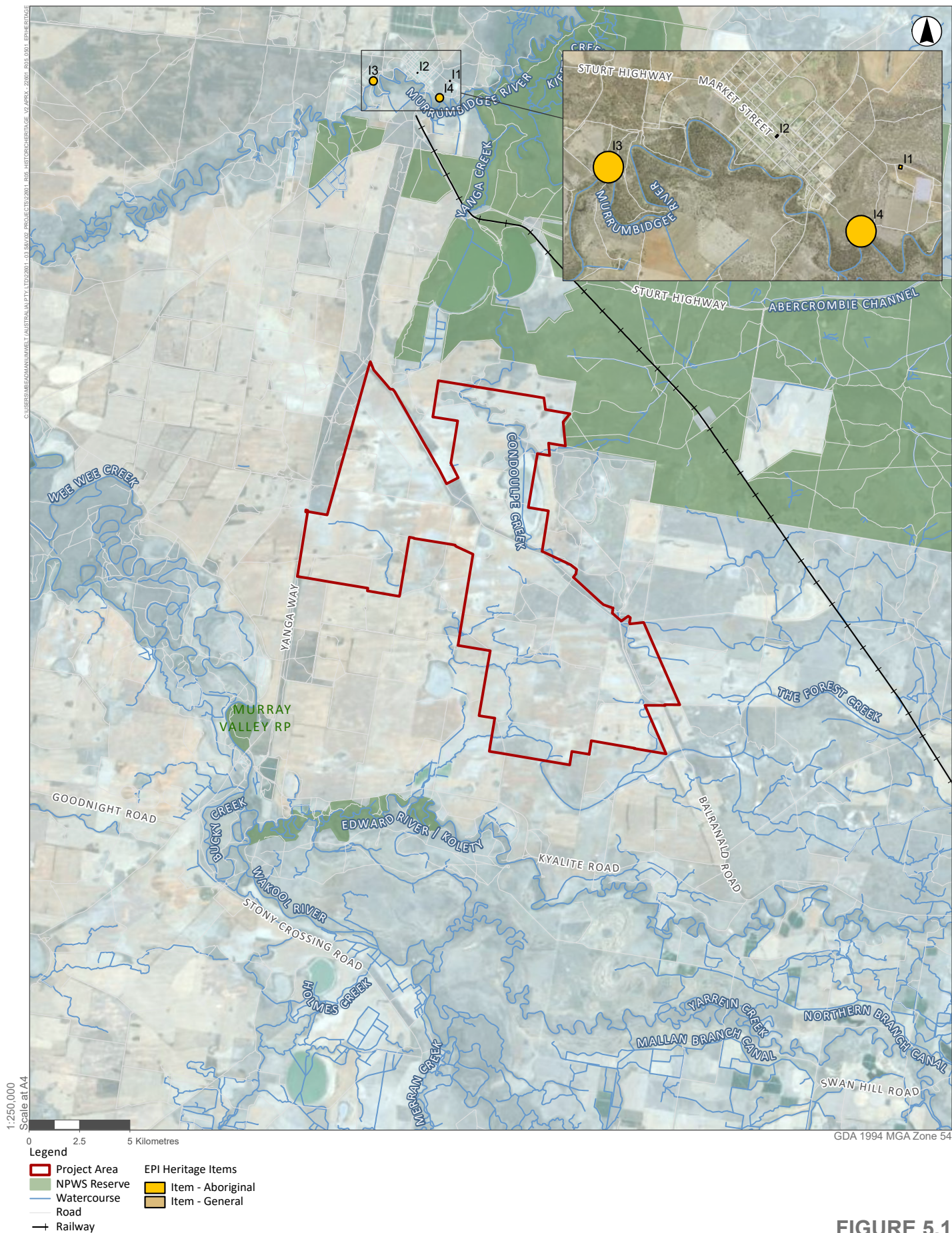


FIGURE 5.1
EPI Heritage Items

5.2 Previous Assessments

No prior historical heritage assessments have been undertaken within the Project Area. The below section discusses a number of investigations that have occurred in the surrounding area to provide context.

Landskape Natural and Cultural Heritage Management, *Balranald Mineral Sands Project, Pre-Feasibility Study, Non-Aboriginal Cultural Heritage Assessment*, prepared for Iluka Resources Limited, 2012

In preparation for the establishment of sand mining activities at the West Balranald and Nepean Deposits approximately 22 km northwest of the Project Area, an assessment of historical heritage values was undertaken. Whilst no registered heritage items were present within the study area, it was predicted that any sites present were likely to be agricultural in nature, including ‘dwellings and outbuildings, discarded farm machinery and blazed survey marks’ (Landskape 2012: 11). A lack of historical or extant homesteads in the study area meant that the likelihood for these items to occur was low (Landskape 2012: 11).

No unregistered potential heritage items were located within the study area during a survey of the area, however, a landholder identified the inferred route of the Burke and Wills expedition and a late nineteenth century water supply channel (Landskape 2012: 12).

Tonkin Zulaikha Greer Architects, *Yanga Conservation Management Plan*, prepared for Office of Environment and Heritage, 2013

The Yanga Pastoral Station Complex (NSW DCCEE HHIMS 10607) was one of the Riverina’s most productive pastoral stations in the late nineteenth and early twentieth centuries. A Conservation Management Plan (CMP) was prepared for the site in 2013 to assist in guiding maintenance and interpretation of its numerous features. As part of the preparation of the CMP, a comprehensive assessment was undertaken of the historical built items and areas of archaeological potential.

The first dwelling, a single-roomed squatter’s hut, was constructed on the northern banks of Yanga Lake in 1846. Early maps depict at least four buildings, a series of fences, and a yard (TZG 2013: 173). The site now consists of a surface scatter of nineteenth century artefacts (TZG 2013: 173). In 1862, the present homestead was constructed. Over time, the homestead has been extended and altered, and the surrounding grounds developed to include stables, a coach house, craftsmen’s sheds and workers’ accommodation, storage sheds, animal yards and shelters, and other outbuildings (TZG 2013: 199). A number of these structures have subsequently been demolished or relocated and replaced. Irrigation systems were installed in 1920 and are considered to be culturally significant (TZG 2013: 187). The last major phase of construction occurred in c1950 (TZG 2013: 199).

Due to the numerous alterations and phases of development, areas of archaeological potential relating to previous structures have been identified. Any in situ archaeological remains within this area have been assessed as significant at a Local and State level, with the potential to:

... further enhance an understanding of the history and operation of the site. The use of the land, irrigation systems, stock management and rural work are areas for further study. Little is known about the historic irrigation systems, their operation and construction, and their survival in other places.

... The design and construction of buildings and building techniques and materials are an area where study could reveal information about vernacular construction generally and about the place (TZG 2013: 348).

Overall, it was concluded that the property represents a rare site, with a full range of building types, structures and gardens that are generally unchanged since the early twentieth century demonstrate how people lived at that time (TZG 2013: 348).

EMM Consulting Pty Ltd, *Limondale Sun Farm, Environmental Impact Statement*, prepared for Overland Sun Farming Pty Ltd, 2017

An EIS was prepared for the Limondale Solar Farm, located on the northwest border of the Project Area. No registered historical heritage items were located within the study area. One potential unregistered historical heritage item was identified during a survey of the study area for Aboriginal heritage values. This item consisted of the ruins of a weatherboard cottage and its outbuildings (EMM 2017: 85). The historical associations and significance of the ruins were not assessed (Biosis 2017: 18). It was determined that the ruins would not be impacted by the construction of the solar farm (Biosis 2017: 18).

NGH Environmental, *Sunraysia Solar Farm, Environmental Impact Statement*, prepared for Sunraysia Solar Farm Two Pty Ltd, 2017

An EIS was prepared for the Sunraysia Solar Farm, located on the western border of the Project Area. No registered historical heritage items were located within the study area and no potential unregistered heritage items were identified during a survey of the study area (NGH 2017: 138).

6.0 Assessment of Historical Heritage

The following section provides an assessment of the historical archaeological remains likely to be present within the Project Area. It also provides an indicative significance assessment for the types of heritage values likely to be identified.

6.1 Predictive Modelling

The Project Area is characterised by a pastoral landscape, with numerous structures relating to managing livestock, improving water availability, and domestic occupation. Historical records and aerial photography indicate that four 1890s homesteads (Lynwood, Oldham Park, Tyndale, and Arundel) were constructed within the Project Area (refer to **Figure 4.7**). Ancillary structures associated with the agricultural and pastoral activities occurring in the area also would have been present.

A predictive model for the likelihood of historical heritage and archaeological sites being present within the Project Area is discussed in **Table 6.1**.

Table 6.1 Predictive model for historical archaeological remains within the Project Area

Site Type	Description	Project Area Discussion	Project Area Potential
Burials	Formal and informal locations of graves. May be marked or unmarked, and include a single individual or multiple individuals from the same family.	Private and undocumented burials were common in the nineteenth century. Documentary research of the families within the Project Area did not indicate that burials took place on the private homesteads.	The potential for archaeological remains associated with burials within the Project Area is low .
Domestic	Spaces associated with domestic activities, such as squatter's huts, homesteads, outbuildings (e.g. kitchen blocks, ablution and laundry blocks), and workers accommodation.	The land contained within the Project Area was originally squatted in c1830–1855 as part of the Yanga, Burrawang, and Moolpa holdings. Squatter's huts associated with this early period of occupation may be present within the landscape, although exact locations have not currently been identified. Archaeological remains associated with squatter's huts may include: • structural remains (e.g. foundations, postholes, floor surfaces, chimneys) • domestic waste (e.g. cesspits, refuse pits) • boundary markers (e.g. fence postholes). Following subdivision of the landscape in the late nineteenth century, four homesteads were established in the Project Area. All date to the early 1890s. Three homesteads are no longer extant (Lynwood, Oldham Park, and Tyndale). Archaeological remains associated with the homesteads may include: • Lynwood (destroyed by a bushfire in the late twentieth century, now completely demolished): ○ structural remains (e.g. homestead and outbuilding foundations, floor surfaces, chimneys) ○ domestic waste (e.g. subfloor deposits, cesspits, refuse pits). • Oldham Park and Tyndale (homestead remains still present on surface): ○ structural remains (e.g. homestead and outbuilding foundations, floor surfaces, chimneys) ○ domestic waste (e.g. subfloor deposits, cesspits, refuse pits) ○ boundary markers (e.g. fence postholes, garden beds, garden features). Locations of accommodation for workers have not been identified. However, noting the pastoral nature of the Project Area, it is likely that worker accommodation was provided. Archaeological remains associated with workers' accommodation may include:	The potential for archaeological remains associated with domestic activities within the Project Area is high .

Site Type	Description	Project Area Discussion	Project Area Potential
		• structural remains (e.g. foundations, postholes, floor surfaces) • domestic waste (e.g. cesspits, refuse pits, campfires).	
Agricultural and Pastoral	Spaces associated with agricultural or pastoral activities, such as livestock yards, shelters, sheds, and processing facilities (e.g. shearing sheds, abattoirs).	Occupational spaces were typically constructed within close proximity to the homestead site, however, generally may have been spread across the landscape. Archaeological remains associated with the occupational spaces may include: • structural remains (e.g. foundations, postholes, floor surfaces) • occupational waste (e.g. product packaging, tools, machinery, animal by-products) • boundary markers (e.g. fence postholes).	The potential for archaeological remains associated with occupational activities within the Project Area is high .
Water Management	Landform modifications and structural remains associated with water collection and control of natural waterways or water sources.	When rainfall or natural water are not plentiful, dams and other forms of irrigation (e.g. channels) were historically constructed to assist in water collection and movement across the landscape. The Project Area experiences low average rainfall levels. Water management in the area would have been crucial for the production of livestock and crops. As a result, dams are present across the landscape, and irrigation channels may have also been constructed. Archaeological remains associated with historical water management may include: • networks of ditches and banks • redirected creeks.	The potential for archaeological remains associated with water management within the Project Area is high .
Exploration and Survey	Structures or markers within a landscape recording exploration and survey routes, historical property boundaries.	Nineteenth century explorers and surveyors would often mark their routes and determined boundaries so that they could be reidentified at a later date (e.g. carved trees, rock cairns). Locations of surveyors' marks have not been identified. Whilst numerous exploration parties and surveyors have passed through the Project Area, the susceptibility of surveyors' marks to disturbance is high. Archaeological remains associated with exploration and survey may include: • carved trees, metal signage embedded within trees • rock cairns, engraved stone markers.	The potential for archaeological remains associated with explorers and surveyors within the Project Area is low .

6.2 Significance

6.2.1 Known Heritage Values

There are no registered heritage items or values located within the Project Area (refer to **Section 5.1**).

6.2.2 Potential Heritage Values

Detailed significance assessments of the historical heritage values likely to be present in the Project Area have not been undertaken. The following table presents an indicative significance assessment to guide management and mitigation recommendations for the proposed works. The *Heritage Act 1977* criteria are detailed in **Section 3.2**.

Table 6.2 Indicative significance assessment

Site Type	Discussion	Likely Significance
Burials	Graves can have complex heritage values, particularly when they are early, and/or part of large established cemeteries and/or associated with significant individuals. Small family plots on private land (particularly those that are of a recent date), however, generally do not meet the threshold for significance against the Heritage Act.	If graves are present within the Project Area, they are unlikely to meet the threshold for Local or State registration.
Domestic	Squatter's huts from the early and mid nineteenth century were generally lived in for a limited period of time. As a result, any archaeological remains associated with a squatter's hut have the potential to provide insight into how early pastoralists lived in the remote landscape. Archaeological remains of mid nineteenth squatter's huts are not represented. Lynwood, Oldham Park, and Tyndale experienced little development since the early twentieth century and were all abandoned during the mid twentieth century. As a result, any archaeological remains associated with the homestead sites may be indicative of how families lived and worked the land in the late nineteenth and early twentieth centuries. Archaeological remains of late nineteenth and early twentieth century pastoral life in western NSW is not well represented. Arundel homestead has been continuously occupied since its construction c1890. It has likely undergone numerous alterations over the years. Depending on the nature and extent of any alterations, the integrity of the late nineteenth century homestead may have been compromised.	If archaeological remains of a squatter's hut are identified, they may meet the threshold for Local and/or State registration under criteria (a), (e), and/or (f). If the archaeological remains associated with Lynwood, Oldham Park, and Tyndale are well-preserved and extensive, they may meet the threshold for Local registration under criteria (a), (d), (e), and/or (f). If Arundel homestead retains a high level of integrity and representativeness of a late nineteenth century rural dwelling, it may meet the threshold for Local registration under criteria (c), (f), and/or (g).

Site Type	Discussion	Likely Significance
Agricultural and Pastoral	Structures related to agricultural and pastoral practices are common across the landscape. They include larger and more elaborate structures (e.g. shearing sheds) and simpler features (e.g. machinery sheds, livestock yards and shelters). The latter forms are generally do not meet the threshold for significance against the Heritage Act. When in good condition, the former structures can be considered as representative of their type.	If large elaborate structures associated with agricultural and pastoral practices are present within the Project Area, they may meet the threshold for Local registration under criteria (c), (f), and/or (g).
Water Management	Water management was a crucial part of agricultural and pastoral practices. Dams represent common features across the landscape and generally have limited potential to yield additional understanding to their use in water management. Irrigation channels are less common and can often be associated with the work of particular individuals and may have some potential to yield additional understanding to water management.	Water management features present within the Project Area are unlikely to meet the threshold for Local or State registration.
Exploration and Survey	Survey markers are tangible representations of the routes that early explorers and surveyors took through the remote NSW landscape. Due to their susceptibility to disturbance, they are not well represented. When found, they can yield additional understanding to mapping paths through the landscape.	If survey markers are present within the Project Area, they are likely to meet the threshold for Local and/or State registration under criteria (a), (b), and/or (f).

7.0 Heritage Impact Assessment

The following section assesses the likely impacts of the works involved in the Project on the heritage values located within the Project Area (refer to **Section 6.1**).

7.1 Proposed Works

The Project Development Corridor is depicted in **Figure 7.1**. The construction impacts associated with the Project include:

- regrading, removal of topsoil, and establishment of access roads
- localised excavation for the foundations of each WTG, and widespread excavation for the installation of the electrical connections between the WTGs
- excavation for the construction of the substations/grid support, overhead electrical lines, and ancillary infrastructure.

As identified in **Section 5.1**, there are no registered heritage items located within the Project Area. The nearest registered heritage item is Yanga Pastoral Station Complex (DCCEEW HHIMS 10607) located approximately 9.6 km north of the Project Area.

Documentary research and review of aerial photography identified the archaeological remains of three c1890s homesteads located within the Project Area.

7.2 Direct Impacts

As there are no registered heritage items located within the Project Area, there is no physical impact to known heritage items. The Development Corridor does pass within close proximity of the archaeological remains of Lynwood homestead (approximately 75 m) and Tyndale homestead (approximately 20 m) (**Figure 7.2**). Depending on the integrity and contents of the archaeological resources, these homesteads may meet the threshold for registration as Local heritage sites under the *Heritage Act 1977* (refer to **Table 6.2**). There may be additional heritage values associated with squatter's huts, agricultural and pastoral structures, and survey markers (refer to **Table 6.2**).

There would be no direct impacts to the archaeological resources of the two homesteads, as they are located outside of the Development Corridor. Mitigation measures to avoid accidental impact are presented in **Section 8.0**. The Oldham Park homestead archaeological remains and Arundel homestead are over 500 m away from the Development Corridor and would not be physically impacted by the works.

7.3 Indirect Impacts

7.3.1 Viewsheds

A Landscape and Visual Impact Assessment (Moir Landscape Architecture Pty Ltd [Moir], 2023) (LVIA) has been prepared for the Project. As part of the LVIA, the visual impact of the Project on the Yanga Pastoral Station Complex (NSW DCCEEW HHIMS 10607) was examined. The scenic quality of the Yanga Complex was noted as being 'moderate / high' (Moir, 2023: 34).

Photomontages prepared by Moir (2023: Appendix D) show the view towards the Project Area from the lookout within the Yanga Complex as it currently appears (**Figure 7.3**) and how it would appear following construction (**Figure 7.4**). In the latter image, the finished wind turbines are visible from the Yanga Complex, however, they are present as distant views primarily where existing vegetation does not screen the horizon. As such, the wind turbines do not dominate the view nor do they remove focus from the key components of the vista (i.e. the bushland setting and Yanga Lake).

From a historical heritage perspective, the impact of the Project on the viewshed of the Yanga Pastoral Station Complex (DCCEEW HHIMS 10607) is considered to be minor adverse.

7.3.2 Vibration

Heritage structures tend to be more vulnerable to damage from ground vibrations due to an inability for traditional materials (e.g. brickwork and stone) to deform without rupturing (Jordan et al. 2009).

Damage from ground vibrations generally occurs when the heritage structure has a similar natural vibration frequency as the frequency of the ground vibrations (Rainer 1982). Radiant vibration from construction impacts is generally considered to extend for approximately 20 m. There are no extant heritage buildings within 20 m of the proposed Development Corridor.

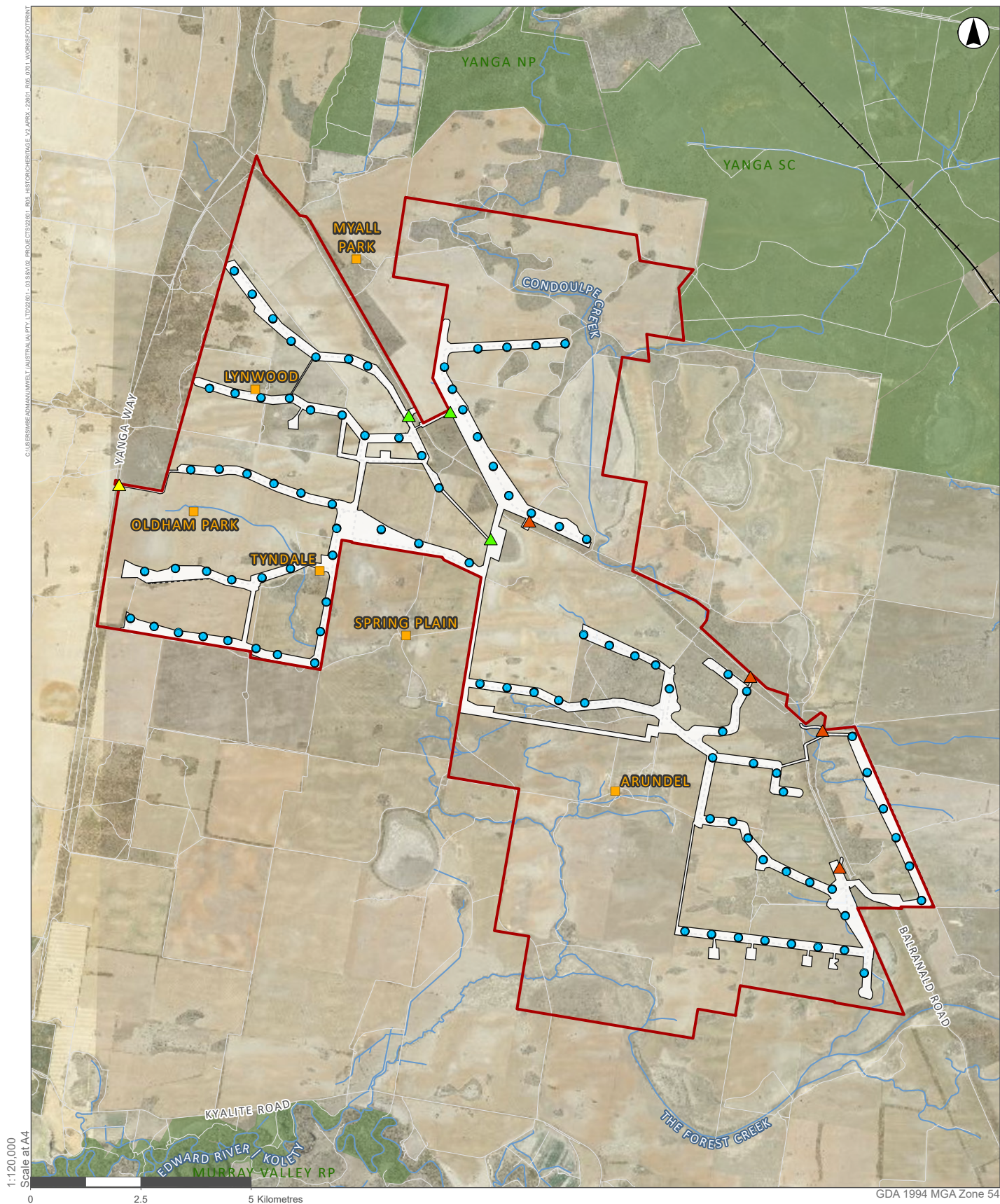


FIGURE 7.1

Works Footprint



FIGURE 7.2

Proximity of the works footprint to the Lynwood and Tyndale homestead archaeological remains

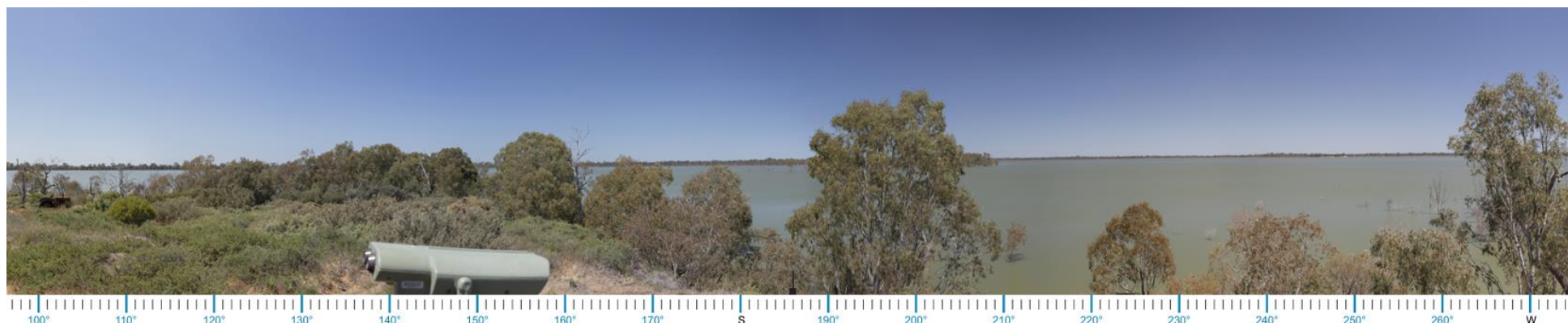


Figure 7.3 Current view from Yanga Pastoral Station Complex (DCCEW HHIMS 10607)

Source: Moir, 2023: Appendix D.

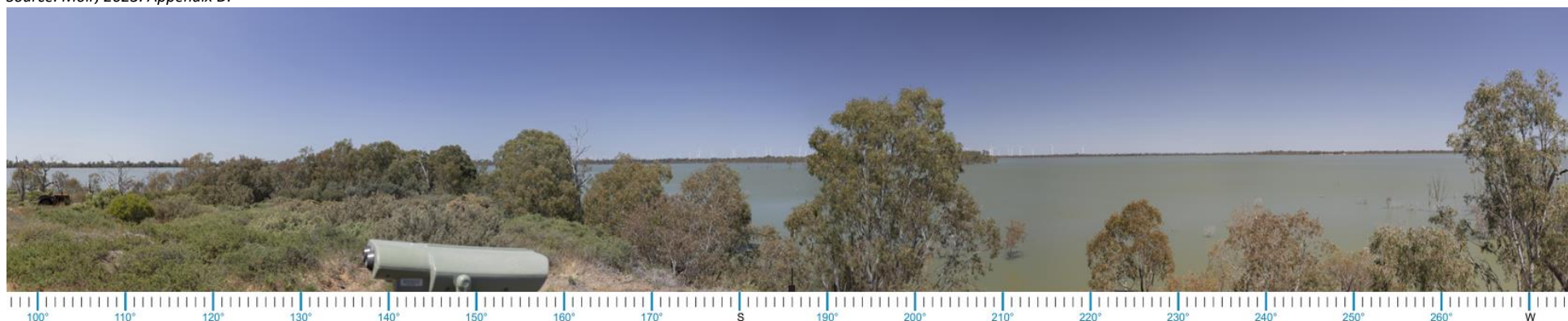


Figure 7.4 View from Yanga Pastoral Station Complex (DCCEW HHIMS 10607) following completion of Project

Source: Moir, 2023: Appendix D.

8.0 Conclusion and Recommendations

The Project Area has been assessed as having high potential to contain archaeological material relating to the late nineteenth homesteads that characterised the landscape at that time. There is also potential for archaeological materials related to other aspects of the area's history to be present.

The proposed works do not directly impact any registered or known potential heritage values located within the Project Area (refer to **Section 7.0**). From a historical heritage perspective the Project would have a minor adverse impact on the viewshed from the Yanga Pastoral Station Complex (DCCEEW HHIMS 10607) when looking towards the Project Area. In light of this, the following recommendations to manage accidental impacts are outlined below:

- **Further investigation** — A site inspection of the proposed works footprint was not undertaken as part of this HHIA. The potential remains for unidentified heritage values (e.g. burials, squatter's huts, workers' accommodation, irrigation channels, survey markers) to be present in the Project Area.

To avoid impact to heritage values that remain unidentified through documentary research, a suitably qualified heritage specialist should conduct a targeted visual assessment of the proposed works footprint. This should be undertaken prior to works commencing.

- **Potential archaeological remains** — The high potential for archaeological remains have been identified at the locations of the 1890s Lynwood, Oldham Park, and Tyndale homesteads.

All three archaeological sites are presently located outside of the proposed Development Corridor. The proposed works would, however, come within 20 m of Tyndale homestead and 75 m of Lynwood homestead. To avoid accidental impact to potential archaeological remains, exclusion zones should be established in accordance with **Figure 8.1**. These zones should be examined regularly during construction to ensure ongoing protection.

If the proposed works footprint alters and impacts to the potential archaeological sites cannot be avoided, further assessment and investigation should be undertaken. This would be in the form of an Archaeological Research Design (ARD) and test excavation to determine the integrity, nature, and significance of any archaeological remains that may be present. Test excavation should be carried out by an appropriately qualified Excavation Director in accordance with the NSW Heritage Council's Excavation Director criteria.

- **Heritage induction** — All Project team members and construction contractors should undergo a heritage-specific induction to support the use of the unexpected finds protocol prior to undertaking any activities within the Project Area.
- **Unexpected Finds Protocol** — An unexpected finds protocol (UFP) should be established and is to be followed in the event that any unexpected historical archaeological deposits, artefacts, or structures of potential heritage significance are identified. In the unlikely event that unexpected finds are encountered during the Project, all work in the area will cease and a suitably qualified archaeologist will be contacted to determine an appropriate course of action. Depending on the extent and/or significance of the finds encountered, consultation with Heritage NSW may also be required prior to the re-commencement of works.



FIGURE 8.1

Exclusion zones around the potential archaeological remains of Lynwood and Tyndale homesteads

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