



Calala Battery Energy Storage System,
Calala (SSD – 52786213):
Historical Archaeological Impact Statement

FINAL REPORT

Prepared for Equis Energy (Australia) Projects (NGUMI4) Pty Ltd (ACN: 657 590 175) as trustee for
the Equis Energy (Australia) Ngumi 4 Asset Trust

25 July 2023

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Glossary

AC	Alternating Current
AACo	Australian Agricultural Company
BESS	Battery Energy Storage System
Biosis	Biosis Pty Ltd
BP	Before present
Burra Charter	The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance
CBD	Central Business District
CHL	Commonwealth Heritage List
DA	Development Application
DC	Direct Current
DCCEEW	Australian Government Department of Climate Change, Energy, the Environment and Water
DCP	Development Control Plan
DP	Deposited Plan
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
Equis Australia	Equis Energy (Australia) Projects (NGUMI4) Pty Ltd (ACN: 657 590 175) as trustee for the Equis Energy (Australia) Ngumi 4 Asset Trust
Heritage NSW	Heritage NSW, Department of Planning and Environment
Heritage Act	<i>Heritage Act 1977</i>
HAIS	Historical Archaeological Impact Statement
LEP	Local Environmental Plan
LGA	Local Government Area
MW	Megawatts
MWh	Megawatt hours
NHL	National Heritage List
NSW	New South Wales
SEARs	Secretary Environmental Assessment Requirements
SEPP	<i>State Environmental Planning Policy (State and Regional Development) 2011</i>
SHR	State Heritage Register
SSD	State Significant Development
study area	Lot 17 DP 629969 (57 Burgess Lane and also known as 474 Calala Lane, Calala) –BESS footprint; underground transmission cable corridor will run from the BESS at Lot 17 DP 629969 then along: Lot

16 DP 629969, Lot 3 DP 244399, Lot 4 DP 244399, underneath Burgess Lane and then connects to the substation on Lot 6 DP 219993

Summary

Biosis Pty Ltd (Biosis) was commissioned by Equis Energy (Australia) Projects (NGUMI4) Pty Ltd (ACN: 657 590 175) as trustee for the Equis Energy (Australia) Ngumi 4 Asset Trust (Equis Australia) to undertake a Historical Archaeological Impact Statement (HAIS) for the proposed Battery Energy Storage System (BESS) at Lot 17 DP 629969 (57 Burgess Lane and also known as 474 Calala Lane, Calala) – BESS footprint; underground transmission cable corridor will run from the BESS at Lot 17 DP 629969 then along: Lot 16 DP 629969, Lot 3 DP 244399, Lot 4 DP 244399, underneath Burgess Lane and then connects to the substation on Lot 6 DP 219993, New South Wales (NSW) (the study area). The study area is located approximately 2 kilometres south-east of Calala, and approximately 6 kilometres south-east of the Tamworth central business district (CBD).

The project is to be assessed as a State Significant Development (SSD) (SSD-52786213) under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and the *State Environmental Planning Policy (Planning Systems) 2021* (SEPP). The Secretary Environmental Assessment Requirements (SEARs) (30 January 2023) have stated that impacts to historic heritage be assessed.

The Calala BESS project will include:

- The construction and operation of a BESS with an estimated capacity of up to 300 Megawatts (MW) / 1200 Megawatt hours (MWh).
- Associated infrastructure, including underground grid connection to the Tamworth 330kV substation.

As part of the HIAS, background research was undertaken to identify the previous land use of the study area to determine whether items of historical significance have the potential to be impacted by the proposed works.

The study area has been used for agricultural purposes since the land grant to the Australian Agricultural Company (AACo) in 1832 and subdivision in 1909. The current structures in the study area are sheds, which were constructed during the 1990s according to aerial imagery. These structures are common in agricultural settings.

This assessment has not revealed any evidence of items, activities, or events occurring within the study area that are historically significant, either to the local area or NSW. Archaeological remains that may be present within the study area are likely to include fence lines, post holes and agricultural marks, which hold no research potential and are unlikely to provide information that is of importance in the pattern of NSW's cultural history at a state or local level. The study area is not associated with a significant figure or community group within the local area and possesses low aesthetic value.

There are no listed heritage items, or items of heritage significance, within or adjacent to the study area, therefore the impacts to historical heritage resulting from the proposed works are considered acceptable.

Recommendations

Recommendation 1: The proposed works may proceed with caution

There are no listed items, or items of heritage significance, within or adjacent to the study area.

Works can proceed in the study area with caution as it has been assessed as possessing low archaeological potential. Should unexpected archaeological remains be uncovered during the course of the proposed works, Recommendation 2 should be implemented.

Recommendation 2: Discovery of unanticipated historical relics

Relics are historical archaeological resources of local or State significance and are protected in NSW under the *Heritage Act 1977* (Heritage Act). Relics cannot be disturbed except with a permit or exception/exemption notification. Should unanticipated historical archaeology be discovered during the course of the project, work in the vicinity must cease and an archaeologist contacted to make a preliminary assessment of the find. Heritage NSW, Department of Planning and Environment (Heritage NSW) will require notification if the find is assessed as a relic.

1 Introduction

1.1 Project background

Biosis was commissioned by Equis Australia to undertake a HAIS for the proposed BESS at Lot 17 DP 629969 (57 Burgess Lane and also known as 474 Calala Lane, Calala) –BESS footprint; underground transmission cable corridor will run from the BESS at Lot 17 DP 629969 then along: Lot 16 DP 629969, Lot 3 DP 244399, Lot 4 DP 244399, underneath Burgess Lane and then connects to the substation on Lot 6 DP 219993, Calala, NSW (the study area) (Figure 1 and Figure 2). The project is to be assessed as an SSD (SSD-52786213) under Part 4 of the EP&A Act and the SEPP.

1.2 Response to project SEARs requirements

This HAIS has been prepared in response to the SEARs requirements (SSD-52786213) (30 January 2023) (Table 1). The HAIS has been prepared in accordance with the Heritage Act¹, NSW Heritage Manual², and the *Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance* (the *Burra Charter*)³.

Table 1 Response to project SEARs requirements

General requirement	Issue and Assessment requirements	Section of report responding to SEARs
Heritage	Assess the impact to historic heritage having regard to the <i>NSW Heritage Manual</i> .	Sections 2, 3, 4, 5, 6 of this report.

1.3 Location of the study area

The study area is located across several lots and also includes Burgmanns Lane (Table 2, see Section 1.5). It is approximately 2 kilometres south-east of Calala, and approximately 6 kilometres south-east of the Tamworth CBD (Figure 1). The total size of the site area is approximately 36 hectares, with the footprint of the facility covering a total of 8.9 hectares (**note - this figure relates to the footprint of the BESS only and excludes any easements and underground transmission lines). The land is currently zoned as RU4: Primary Production Small Lots.

Table 2 Location of the study area

Proposed work	Lot and DP
BESS footprint	Lot 17 DP 629969
Underground transmission cable corridor	The underground transmission cable corridor will run from the BESS at Lot 17 DP 629969 then along: - Lot 16 DP 629969 - Lot 3 DP244399

¹ Heritage NSW 1977

² Heritage Office & DUAP 1996

³ Australia ICOMOS 2013a

Proposed work	Lot and DP
	- Lot 4 DP244399 - Underneath Burgess Lane - Connecting to the substation – Lot 6 DP219993 The final transmission alignment is aligned with Burgmanns Lane boundary.

The study area is within the:

- Tamworth Local Government Area (LGA)
- Parish of Calala
- County of Parry (Figure 2).

The study area is bounded by private property fronts Calala Lane and Burgess Lane, and also includes part of Burgess Lane and Burgmanns Lane.

1.4 Scope of assessment

This report was prepared in accordance with current heritage guidelines including *Assessing Heritage Significance*, *Assessing Significance for Historical Archaeological Sites and 'Relics'* and the Burra Charter.⁴⁵ This report provides a heritage assessment to identify if any heritage items or relics exist within or in the vicinity of the study area. The heritage significance of these heritage items has been investigated and assessed in order to determine the most appropriate management strategy.

The following is a summary of the major objectives of the assessment:

- Identifying sites and features within the study area which are already recognised for their heritage value through statutory and non – statutory heritage listings.
- Identify and assess the heritage values and historical archaeological potential associated with the study area. The assessment aims to achieve this objective through providing a brief summary of the principle historical influences that have contributed to creating the present – day built environment of the study area using available resources.
- Assess the impact of the proposed works on the cultural heritage significance of potential archaeological relics within the study area (if present).
- Recommend measures to avoid or mitigate any negative impacts on the heritage significance of the study area.

1.5 Proposed development

Equis Australia are proposing to develop a large-scale BESS within the study area (Photo 1 and Figure 3). The project involves the construction and operation of a large-scale BESS at Calala, NSW. The BESS will have a capacity up to 300 MW and would provide up to 1200 MWh of battery storage capacity or up to 4 hours of storage duration. The proposal will comprise the following:

⁴ Heritage Office 2001

⁵ Australia ICOMOS 2013a

- Large-scale BESS including battery enclosures, inverters, direct current (DC) and alternating current (AC) combiner boxes, transformers and auxiliary components.
- 33/330 kV switchyard.
- Underground transmission line connection between the BESS and the nearby TransGrid Tamworth 330 kV substation.
- Ancillary elements including site access from Calala Lane, internal access roads and parking, control room and staff amenities, warehouse, stormwater and fire management infrastructure, utilities, signage, fencing, security systems four and five meter high noise attenuation wall and landscaping.

The final transmission alignment is aligned with Burgmanns Lane boundary. Therefore this assessment has assessed the entire study area.

1.5.1 Colours, materials and finishes

The Calala BESS will include the following colours, materials and finishes:

- Battery enclosure in matt grey or other rural landscape colour pre- fabricated colorbond cladding.
- Power Conversion Unit in matt grey or other rural landscape colour pre- fabricated colorbond material.
- Substation in grey matt, green and zinc.
- Switchroom and Control room in grey/green or other rural landscape colour in matt finish pre-fabricated colorbond cladding.
- Distribution kiosk in matt grey or other rural landscape colour in matt finish pre- fabricated colorbond cladding.
- Water tank (steel tanks) in matt grey or other rural landscape colour.
- Noise wall 75 millimetre brick or concrete, multi-shade dark grey.
- TNSP control room in grey/green or other rural landscape colour in matt finish pre-fabricated colourbond cladding.
- O&M building in grey/green or other rural landscape colour in matt finish.

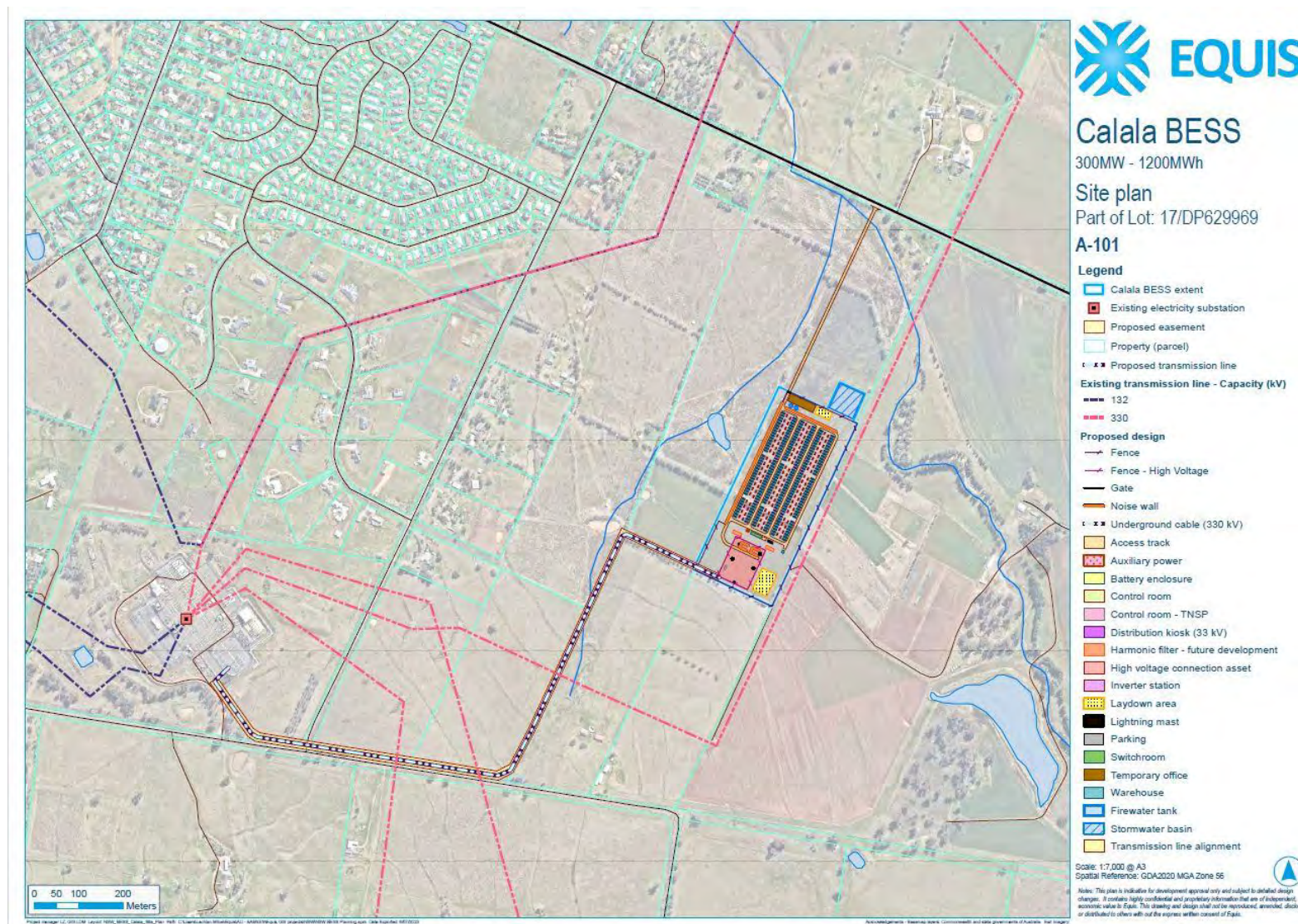


Photo 1 Site plan (Equis Australia, 2023)

1.6 Limitations

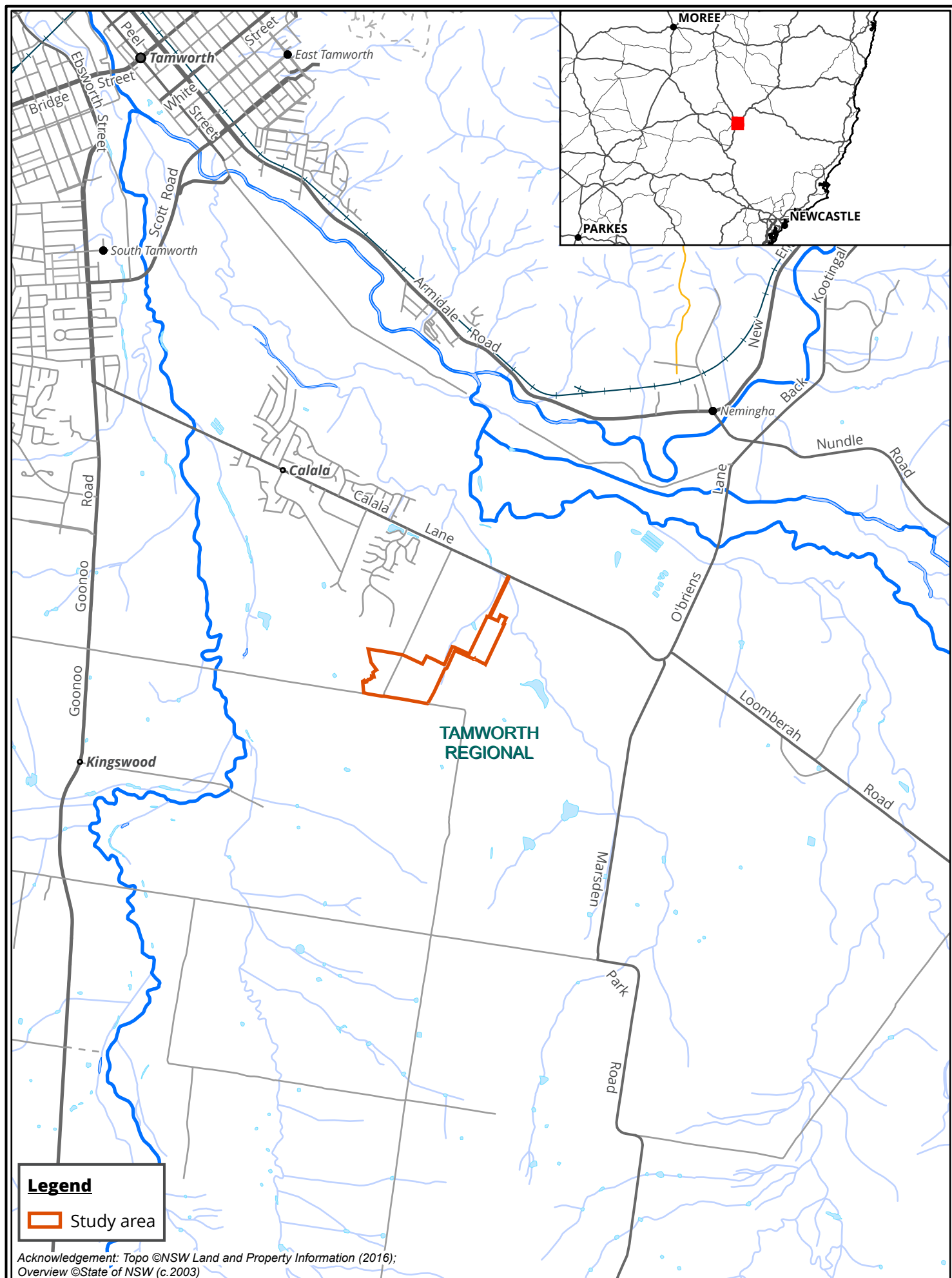
This report is based on historical research and field inspections. It is possible that further historical research or the emergence of new historical sources may support different interpretations of the evidence in this report.

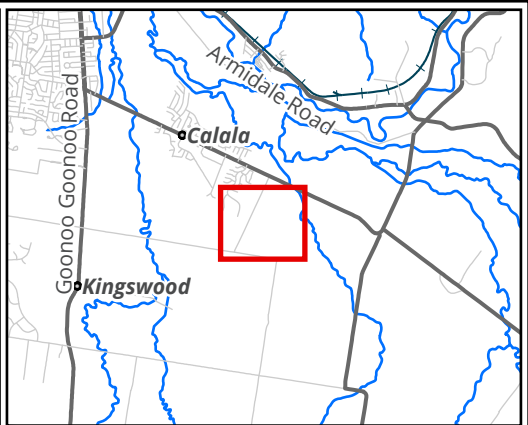
The historical research undertaken for the study area was limited to information contained within primary documentation, including Certificates of Title, parish maps, newspaper articles and historical photographs where available. Historical sources and documents related to the study area were limited. Where possible, available data was supported by existing publications including local and regional histories, and heritage assessment reports within the local area. As primary sources only reflect up to AACo's acquisition of the study area, the ability to trace the development of the study area beyond this was dependant on the availability of historical aerals. Historical aerals of the study area were also of low quality, reducing the ability to identify structures present within the study area.

The archaeological survey was hampered by low ground surface visibility.

Although this report was undertaken to best archaeological practice and its conclusions are based on professional opinion, it does not warrant that there is no possibility that additional archaeological material will be located in subsequent works on the site. This is because limitations in historical documentation and archaeological methods make it difficult to accurately predict what is under the ground.

The significance assessment made in this report is a combination of both facts and interpretation of those facts in accordance with a standard set of assessment criteria. It is possible that another professional may interpret the historical facts and physical evidence in a different way.





- Legend**
- Study area
 - Lot

Figure 2 Study area detail

0 50 100 150 200
Metres
Scale: 1:5,000@ A3
Coordinate System:
GDA 1994 MGA Zone 56

biosis

Matter: 37807, Date: 20 July 2023,
Drawn by: JB, Checked by: AB, Last edited by: jbeckius
Location: P:\38100s\38103\Mapping\
38103_CalalaBESS_HAIS, Layout: 38103_F2_StudyArea

2 Statutory framework

This assessment will support an SSD application under Part 4 of the EP&A Act. In NSW cultural heritage is managed in a three-tiered system: National, state and local. Certain sites and items may require management under all three systems or only under one or two. The following discussion aims to outline the various levels of protection and approvals required to make changes to cultural heritage in the state.

2.1 Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Act 1999* (EPBC Act) is the national Act protecting the natural and cultural environment. The EPBC Act is administered by the Australian Government Department of Climate Change, Energy, the Environment and Water (DCCEEW). The EPBC Act establishes two heritage lists for the management of the natural and cultural environment:

- The National Heritage List (NHL) contains items listed on the NHL that have been assessed to be of outstanding significance and define 'critical moments in our development as a nation'.⁶
- The Commonwealth Heritage List (CHL) contains items listed on the CHL which are natural and cultural heritage places on Commonwealth land, in Commonwealth waters or are owned or managed by the Commonwealth. A place or item on the CHL has been assessed as possessing 'significant' heritage value.⁷

A search of the NHL and CHL did not yield any results associated with the study area.

2.2 NSW Heritage Act 1977

Heritage in NSW is principally protected by the Heritage Act (as amended) which was passed for the purpose of conserving items of environmental heritage of NSW. Environmental heritage is broadly defined under Section 4 of the Heritage Act as consisting of the following items: 'those places, buildings, works, relics, moveable objects, and precincts, of State or Local heritage significance'. The Act is administered by the Heritage Council, under delegation by the Heritage Division, Heritage NSW. The Heritage Act is designed to protect both known heritage items (such as standing structures) and items that may not be immediately obvious (such as potential archaeological remains or 'relics'). Different parts of the Heritage Act deal with different situations and types of heritage and the Act provides a number of mechanisms by which items and places of heritage significance may be protected.

2.2.1 State Heritage Register

Protection of items of State significance is by nomination and listing on the State Heritage Register (SHR) created under Part 3A of the Heritage Act. The Register came into effect on 2 April 1999. The Register was established under the *Heritage Amendment Act 1998*. It replaces the earlier system of Permanent Conservation Orders as a means for protecting items with State significance.

A permit under Section 60 of the Heritage Act is required for works on a site listed on the SHR, except for that work which complies with the conditions for exemptions to the requirement for obtaining a permit. Details of

⁶ 'About National Heritage' <http://www.environment.gov.au/heritage/about/national/index.html>

⁷ 'Commonwealth Heritage List Criteria'

<http://www.environment.gov.au/heritage/about/commonwealth/criteria.html>

which minor works are exempted from the requirements to submit a Section 60 Application can be found in the Guideline 'Standard Exemptions for Works requiring Heritage Council Approval'.⁸ These exemptions came into force on 17 June 2022 and replace all previous exemptions.

There are no items or conservation areas listed on the SHR within the study area.

2.2.2 Archaeological relics

Section 139 of the Heritage Act protects archaeological 'relics' from being 'exposed, moved, damaged or destroyed' by the disturbance or excavation of land. This protection extends to the situation where a person has 'reasonable cause to suspect' that archaeological remains may be affected by the disturbance or excavation of the land. This section applies to all land in NSW that is not included on the SHR.

Amendments to the Heritage Act made in 2009 changed the definition of an archaeological 'relic' under the Act. A 'relic' is defined by the Heritage Act as:

'Any deposit, object or material evidence:

- (a) Which relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement, and*
- (b) Which is of State or Local significance'.*

It should be noted that not all remains that would be considered archaeological are relics under the NSW Heritage Act. Advice given in the Archaeological Significance Assessment Guidelines is that a 'relic' would be viewed as a chattel and it is stated that,

*'In practice, an important historical archaeological site will be likely to contain a range of different elements as vestiges and remnants of the past. Such sites will include 'relics' of significance in the form of deposits, artefacts, objects and usually also other material evidence from demolished buildings, works or former structures which provide evidence of prior occupations but may not be "relics".'*⁹

If a relic, including shipwrecks in NSW waters (that is rivers, harbours, lakes and enclosed bays) is located, the discoverer is required to notify the NSW Heritage Council.

Section 139 of the Heritage Act requires any person who knows or has reasonable cause to suspect that their proposed works will expose or disturb a 'relic' to first obtain an Excavation Permit from the Heritage Council of NSW (pursuant to Section 140 of the Act), unless there is an applicable exception (pursuant to Section 139(4)). Excavation permits are issued by the Heritage Council of NSW in accordance with Sections 60 or 140 of the Heritage Act. Excavation permits are usually issued subject to a range of conditions. These conditions will relate to matters such as reporting requirements and artefact cataloguing, storage and curation.

Exceptions under Section 139(4) to the standard Section 140 process exist for applications that meet the appropriate criterion. Section 139(4) permit is an exception from the requirement to obtain a Section 140 permit and reflects the nature of the impact and the significance of the relics or potential relics being impacted upon.

If it was determined the works' impact fall under an exception and a permit under Section 140 of the Heritage Act was not obtained, and, during the course of the development, substantial intact archaeological relics of state or local significance, not identified in the archaeological assessment or statement required by this exception, are unexpectedly discovered during excavation, work must cease in the affected area and the Heritage Office must be notified in writing in accordance with Section 146 of the Heritage Act. Depending on

⁸ State of NSW 2022

⁹ NSW Heritage Branch, Department of Planning 2009, p.7

the nature of the discovery, additional assessment and, possibly, an excavation permit may be required prior to the recommencement of excavation in the affected area.

2.2.3 Section 170 Heritage and Conservation Registers

Section 170 of the Heritage Act requires that culturally significant items or places managed or owned by Government agencies are listed on departmental Heritage and Conservation Register. Information on these registers has been prepared in accordance with Heritage Division guidelines.

Statutory obligations for archaeological sites that are listed on a Section 170 Register include notification to the Heritage Council in addition to relic's provision obligations.

There are no items within or adjacent to the study area that are entered on a State government instrumentality Section 170 Register.

2.3 Environmental Planning and Assessment Act 1979

2.3.1 State Environmental Planning Policy

The SEPP contains schedules of heritage items by the controls in the instrument. These items contain state or regional environmental planning significance.

There are no heritage items listed in the SEPP located within or adjacent to the study area. Heritage items in the vicinity of the study area are identified within Figure 4.

2.3.2 Tamworth Regional Local Environmental Plan

The *Tamworth Regional Local Environmental Plan 2010* (LEP) contains schedules of heritage items that are managed by the controls in the instrument. The study area does not contain any heritage items of local significance. Heritage items in the vicinity of the study area are identified in Figure 4.

The objectives of the Tamworth LEP are to:

- To conserve the environmental heritage of the Tamworth Regional Council area.
- To conserve the heritage significance of heritage items and heritage conservation areas, including associated fabric, settings and views.
- To conserve archaeological sites.
- To conserve Aboriginal objects and Aboriginal places of heritage significance.

There are five locally significant heritage listed items (Schedule 5 of the Tamworth LEP) in the vicinity of the study area. These items are:

- Original AA Building Site (Item No. 321), Calala Lane, Tamworth, Lot 5 DP 1103706. Heritage item of local significance located approximately 3.2 kilometres north-west of the study area.
- Nemingha Hall (Item No. 255), Kootingal Road, Nemingha, Lot 1 DP 329581. Heritage item of local significance located approximately 3.7 kilometres north-east of the study area.
- Nemingha School (Item No. 256), Nundle Road, Nemingha, Lot 4 DP 48402; Lot 1 DP 232840. Heritage item of local significance located approximately 3.5 kilometres north-east of the study area.
- Nemingha Anglican Church (Item No. 257), Nundle Road, Nemingha, Part Portion 31 DP 755334. Heritage item of local significance located approximately 3.7 kilometres north-east of the study area.

- House “Glenbrook” (Item No. 440), 28 Nundle Road, Tamworth, Lot 1 DP 117363. Heritage item of local significance located approximately 3 kilometres north-east of the study area.

2.3.3 Tamworth Regional Development Control Plan

The *Tamworth Regional Development Control Plan 2010* (DCP) outlines built form controls to guide development. The Tamworth DCP supplements the provisions of the Tamworth LEP.

The aims of the Tamworth DCP are to:

- Define development standards that deliver the outcomes desired by the community and Council.
- Provide clear and concise development guidelines and desired future character statement for various forms of development and site specific precincts.
- Encourage innovation in design and development by not over-specifying development controls.
- Expedite development approvals by providing clear direction on Council's intent and criteria.
- Provide certainty of development outcomes for developers and the community.

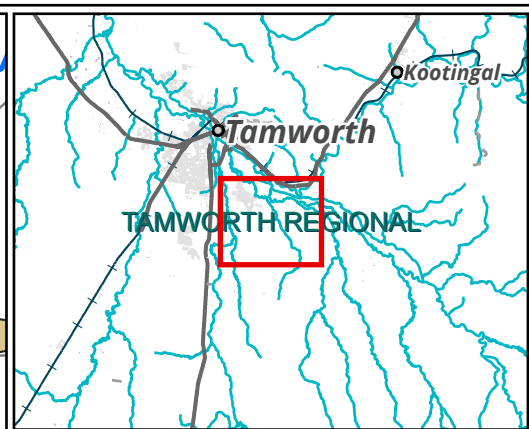
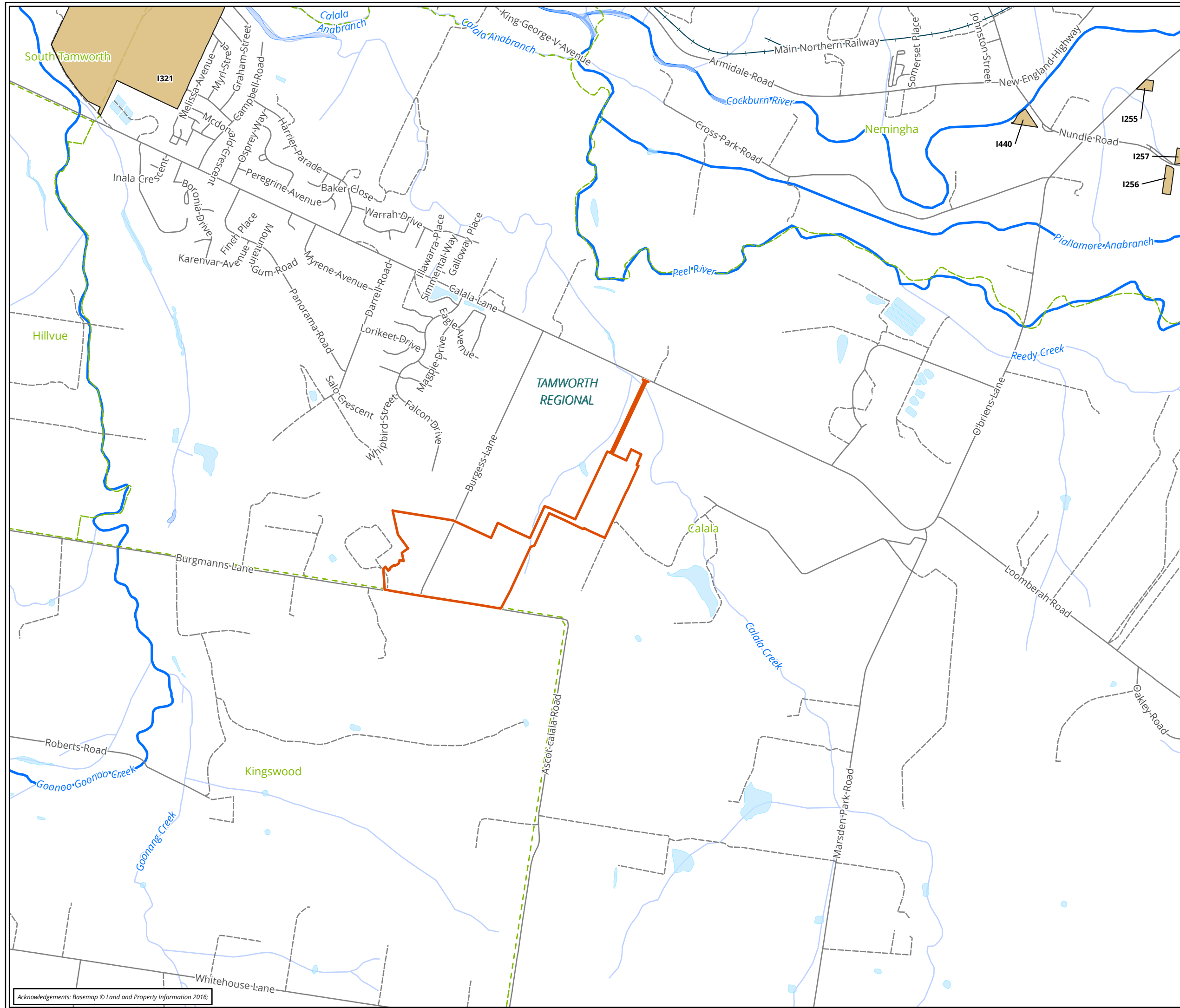
The Tamworth DCP does not list any specific conditions relating to heritage for the suburb of Calala.

2.4 Summary of heritage listings

A summary of heritage listings within and in the vicinity of the study area is presented in Table 3 and Figure 4.

Table 3 Summary of heritage listings in the vicinity of the study area

Site number	Site name	Address / Property description	Location from study area	Listings		Significance
				Individual item	As a Conservation Area	
I321	Original AA Building Site	Calala Lane, Tamworth, Lot 5 DP 1103706	3.2 kilometres north-west	Tamworth LEP	-	Local
I255	Nemingha Hall	Kootingal Road, Nemingha, Lot 1 DP 329581	3.7 kilometres north-east	Tamworth LEP	-	Local
I256	Nemingha School	Nundle Road, Nemingha, Lot 4 DP 48402; Lot 1 DP 232840	3.5 kilometres north-east	Tamworth LEP	-	Local
I257	Nemingha Anglican Church	Nundle Road, Nemingha, Part Portion 31 DP 755334	3.7 kilometres north-east	Tamworth LEP	-	Local
I440	House "Glenbrook"	28 Nundle Road, Tamworth, Lot 1 DP 117363	3 kilometres north-east	Tamworth LEP	-	Local



Legend

 Study area

Local Environmental Plan

 Item - General

Figure 4 Heritage items in the vicinity of the study area

0 200 400 600 800 N

Metres

Scale: 1:20,000@ A3

Coordinate System:
GDA 1994 MGA Zone 56



Matter: 37807, Date: 20 July 2023,
Drawn by: JB, Checked by: AB, Last edited by: jbeckius
Location: P:\38100s\38103\Mapping\
38103_CalalaBESS_HAIS Layout: 38103_F4_HeritageItems

3 Historical context

Historical research has been undertaken to identify the land use history of the study area, to isolate key phases in its history and to identify the location of any built heritage or archaeological resources which may be associated with the study area. The historical research places the history of the study area into the broader context of Tamworth.

3.1 Topography and resources

The topography of the study area consists of extensive rolling to undulating hills, radiating from the north-eastern corner to the south-western corner. Part of the study area broadly slopes towards the south-west (within part of Lot 6 DP 219993). The study area contains two creek lines; Calala Creek, a second order non-perennial watercourse located in the northern portion and a first order, non-perennial tributary of Calala Creek, located in the central portion. A large dam is present directly adjacent to the north-western corner of the study area, coming off of the tributary of Calala Creek. The study area is also approximately 1.1 kilometres south of Peel River, a seventh order perennial watercourse, and Goonoo Creek, a seventh order perennial watercourse is also located approximately 1.2 kilometres west.

The study area contains two geological units, the Mandowa Mudstones (within the Devonian unit), and Noumea beds. The Mandowa Mudstones includes lithic formations of arenite, polymictic conglomerate, greywacke and mudstone. They are grey, thinly bedded, laminated and massive mudstone with subordinate, thin siltstone and fine sandstone. The Noumea beds includes interbedded massive and andesitic lithic wacke, pebbly wacke, laminated siltstone and mudstone.¹⁰

Soils within the study area are contained within three soil landscapes, Duri, Warral Station, and Fullwoods Hill. The Duri soil landscape consists of extensive rolling to undulating hills and low hills. It is an extremely complex landscape due to rapid changes in underlying lithology.¹¹ While erosion is an issue with areas utilised for cropping or grazing, deep soil deposits have the potential to preserve in-situ archaeological deposits.

The Warral Station soil landscape is a transferral landscape and is located on drainage plains, alluvial plains and fans. Soils across this landscape are diverse and are virtually random in distribution according to stream deposition patterns. This soil landscape does feature erodibility and erosion in areas of cropping or grazing.

The Fullwoods Hill soil landscape is an erosional landscape and is located on rocky crests and steeper sideslopes of hills and low hills. This soil landscape is a steeper and rockier version of the Duri soil landscape described above.¹² Sheet erosion is common across this soil landscape, with shallow soils present across some locations.

3.2 Aboriginal past

It is generally accepted that Aboriginal people have inhabited the Australian landmass for the last 65,000 years.¹³ Dates of the earliest occupation of the continent by Aboriginal people are subject to continued revision as more research is undertaken. Early archaeological dates within north-western NSW have been

¹⁰ Geoscience Australia 2022

¹¹ Banks 2001, p.33

¹² Banks 2001, p.86

¹³ Clarkson et al. 2017

dated to 30 to 36,000 years before present (BP) at Cuddie Springs¹⁴ and 20,310 BP at the Crazyman Rockshelter in the Warrumbungles National Park.¹⁵ Archaeological dates from the wider Tamworth region include:

- Bendemeer II Rockshelter on Glendon Station, Bendemeer (30 kilometres to the north-east of Tamworth) 4,950 BP.¹⁶
- Moore Creek 4 Rockshelter at Moore Creek (10 kilometres north of Tamworth) 3,600 BP.¹⁷
- Moore Creek 6 Rockshelter at Moore Creek (10 kilometres north of Tamworth) 3,000 BP.¹⁸

Despite a proliferation of known Aboriginal sites, there is considerable ongoing debate about the nature, territory and range of pre-contact Aboriginal language groups in the region. These debates have arisen largely due to the lack of ethnographic and linguistic information recorded at the time of European contact. By the time colonial diarists, missionaries and proto-anthropologists began making detailed records of Aboriginal people in the late 19th century; pre-European Aboriginal groups had been broken up and reconfigured by European settlement activity. These documents are affected by the inherent bias of the class and cultures of their authors, who were also often describing a culture that they did not fully understand – a culture that was in a heightened state of disruption given the arrival of settlers and disease. Early written records can however be used in conjunction with archaeological information and surviving oral histories from members of the Aboriginal community in order to gain a picture of Aboriginal life in the region.

Tindale compiled information regarding Aboriginal groups and their boundaries.¹⁹ The study area is located within the Kamilaroi/ Gamilaroi/ Gomeroi /Gamilaraay area. Gamilaroi country extends from the Upper Hunter Valley through to the Warrumbungle Mountains in the west and up through the present-day centres of Coonabarabran, Quirindi, Tamworth, Narrabri, Walgett, Moree and Mungindi in NSW, and to Nindigully in south-west Queensland.²⁰

The Emu in the Sky is an important dreaming story for the Gamilaraay people as it outlines the links between cultural practices and natural resource management. The position of the Emu in the Sky changed from season to season; these changes in appearance provided a reference point for the Aboriginal people of when and what food resources (emu eggs etc) were available throughout the year. Fuller *et al* outlines how the late winter stage (August to September) of the Emu in the Sky can be connected to the bora ceremony (male initiation ceremony). In spring the Emu is low on the horizon.²¹ Aboriginal stories explain that the Emu is sitting in a waterhole, indicating that the waterholes on country are full of water after the winter rains. As the summer progresses the Emu is seen to be sitting very low on the horizon. The Emu is said to have left the waterholes at this stage, indicating that the waterholes on country are dry.

The earliest recorded mention of the Gamilaraay language was by Major Thomas Mitchell in February 1832 when he listed basic vocabulary.²² Mitchell wrote specifically about the Gamilaroi on his first expedition, which he made in order to investigate the claims of a large river existing inland.²³ The spread of smallpox had already reached north-western NSW by the time that Mitchell arrived:

¹⁴ Australian Museum 2022

¹⁵ Gaynor 1996

¹⁶ McBryde 1977

¹⁷ Binns & McBryde 1972, McBryde 1977

¹⁸ McBryde 1977

¹⁹ Tindale 1974

²⁰ Tindale 1974, State Library of New South Wales 2016

²¹ Fuller, Anderson, et al. 2014, p.7

²² Austin 1994, Baker 1997

²³ Baker 1997, p.40

"We reached at length a watercourse called 'Currungai' and encamped upon its bank, beside the natives from Dart Brook, who had crossed the range before us, apparently to join some of their tribe who lay at this place extremely ill, being affected with a virulent kind of small pox. We found the helpless creatures, stretched on their backs beside the water, under the shade of the wattle or mimosa trees to avoid the intense heat of the sun".²⁴

William Ridley was a Presbyterian minister from England who conducted widespread itinerant ministry throughout the north-western NSW region from 1853 through to 1857.²⁵ Ridley recorded a short list of Gamilaraay words and phrases he was taught by the Gamilaraay people he interacted with. The list of words include words used to describe astronomical features such as stars (mirri), moon (gille), sky (gundarr, or gunagulla) and the sun (yarai or yuroka). Also listed are some natural resources which were available at the time such as gum tree (yeran), water (kolle, or ukko), emu (dinoun), eagle (mollion), cockatoo (bioela), sanke (Yabba) to name a few.²⁶

3.3 Tamworth – historical development

3.3.1 Exploration (1797 to 1824)

The rich coal deposits of the Hunter River were first discovered by European settlers in 1797, and a settlement was established at the start of the Hunter River in 1801.²⁷ The Liverpool Plains region was first explored in 1818 and reported the rich pastures back to England, although this area was hard to venture into because of the barrier of the Liverpool Ranges.²⁸ The area was not occupied by European settlers until 1824 when Henry Danger successfully discovered a way to navigate through the Liverpool Ranges via the Hunter Valley.²⁹

3.3.2 Pastoral development (1824 to 1909)

In April of 1824, the AACo was formed in order to raise and farm sheep for merino wool to sell in London, and in 1828, they acquired one million acres (404,685 hectares) in the Port Stephens area.³⁰ In 1832 the pastoral pursuit was expanded, and the AACo acquired an additional 316,000 acres (130,000 hectares) of land along the Peel River, extending from what became Tamworth to Nundle, Attunga and Duri (Photo 2) (likely including the study area).

²⁴ Boileau 2007, p.11

²⁵ Gunson 1976

²⁶ Ridley 1856, p.293

²⁷ Davies 1991, p.16

²⁸ Goonoo Goonoo Station n.d.

²⁹ Davies 1991, p.16

³⁰ Australian National University, Archives 2012

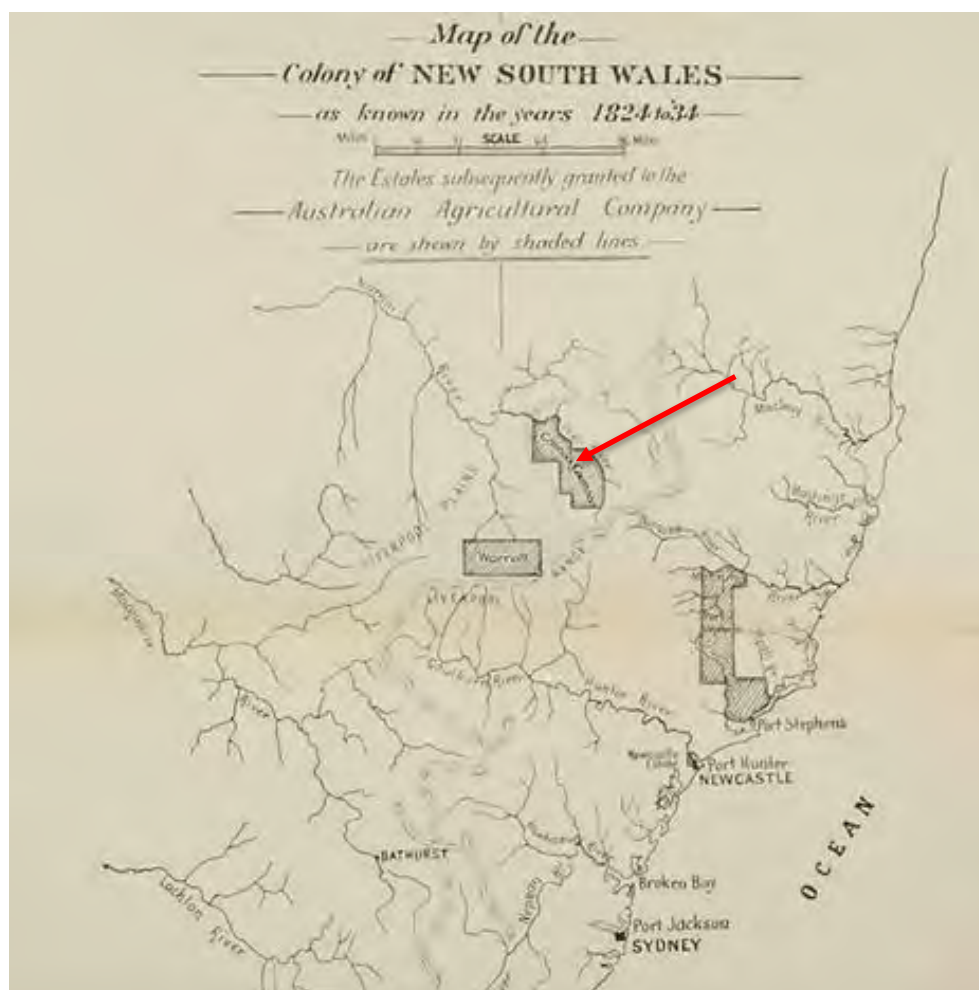


Photo 2 Map showing grants awarded to Australian Agricultural Company, shown in shaded areas; approximate location of the study area indicated by the red arrow (Source: Goonoo Goonoo Station n.d.)

In 1833, the AACo began moving sheep into this region from Port Stephens and Warrah, as the sheep that squatters had introduced into the Port Stephens area had been affected with disease and were encroaching on the Warrah lands.³¹ Lieutenant-Colonel Henry Dumaresq selected the site of a head station on elevated ground sloping towards the western side of the Peel River near its confluence with the Cockburn River, and buildings were constructed in the middle of 1834 for Superintendent Charles Hall. The station was known as Kallala (Calala) and is now part of suburban Tamworth (approximately 5 kilometres north-west of the current study area).

In 1841 the head station was relocated from Calala to its present position at Goonoo Goonoo (approximately 20 kilometres south of the study area). One reason for this was to move the AACo's flocks of sheep away from the danger of infection from flocks being driven out of Gunnedah. Calala also appears to have been affected by flooding due to its close proximity to Peel River.³²

Reports of miners locating gold in the Nundle region were published in 1948 indicated the beginning of a 'mild' gold rush³³. The development of Tamworth momentarily stagnated in the following decade following

³¹ Goonoo Goonoo Station n.d.

³² Goonoo Goonoo Station n.d.

³³ The Canberra Times, 1948, p. 6

the rush that drove populations to regions associated with gold resources and their European population reduced to 254. Diggers eventually moved to the Rocky River and Tawmworth Peel Valley Goldfields after resources in the early rush were depleted³⁴. AACo sought to take advantage of the rush and established the Peel River Land and Mineral company in 1953 to sell mining licenses for portions of their land.³⁵ Land that fell under the Peel River Land and Mineral company was later subdivided into smaller lots intended for farming in the 1870s. Tamworth's population in turn experienced an increase with a boom occurring between the 1860s and 1870s. Modern development (1909 to current)

No crown plans or parish maps of the study area are available between 1833 and 1909. It is likely that the study area continued to be used for agricultural and/or pastoral purposes during this time, based on past and current land use throughout the region.

Historical parish maps containing the study area can be traced back to 1909. Mapping from 1909 illustrates that the land grant belonging to the AACo has since been subdivided into several lots, with the study area falling within parish portions 28, 29, and 30 (Photo 3). No structures are visible on the map and it is likely that the study area continued to be used for agricultural purposes during this time.



Photo 3 1909 Parish map showing study area, illustrated in red (Source: HLRV, 2022)

A parish map dating to 1932 illustrates that no major changes in ownership have occurred over the last 30 years (Photo 4).

³⁴ Hobden, Davidson, & Newman 2005

³⁵ Australian National University, Archives 2012a



Photo 4 1932 Parish map showing study area, illustrated in red (Source: HLRV, 2022)

Historical aerial photographs assist in identifying modern developments that occurred within the study area. An aerial photograph dated to 1976 shows that the land within the study area has been subject to extensive vegetation clearance and terracing, with the area being utilised as paddocks (Photo 5). Two small artificial dams are present approximately 100 metres north-west of the study area, transecting with the tributary of Calala Creek. Terracing can be seen throughout the study area, likely to assist with drainage, and Burgess Lane has also been constructed [1]. The faint beginnings of a dirt track can be seen through the northern portion of the study area, however no structures are visible at this time. Construction also appears to have commenced for the substation to the west of the study area. There are also several transmission lines present in the south-western corner of the study area [2].

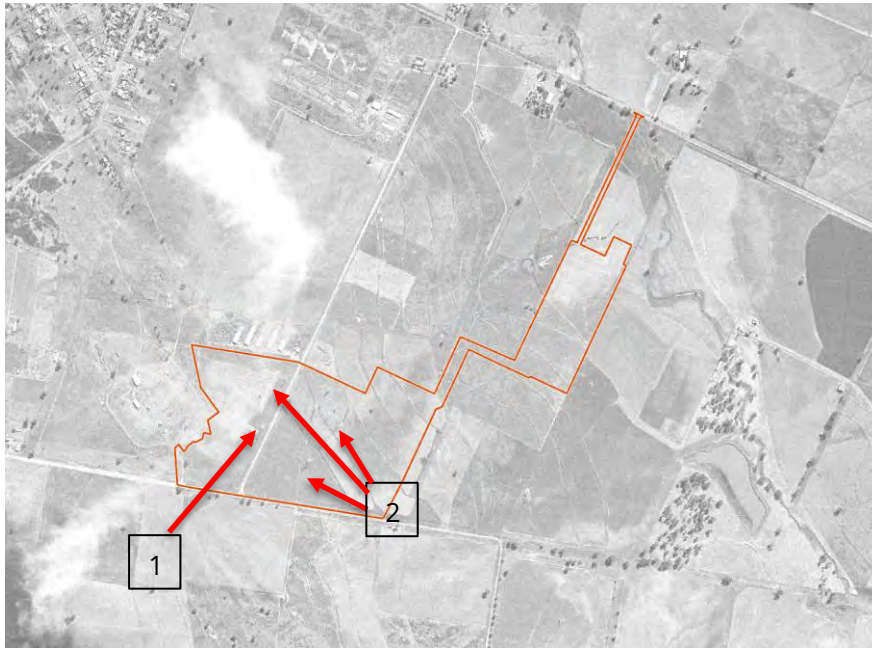


Photo 5 Aerial photograph dated to 1976, with the study area indicated by the red boundary (Source: NSW Spatial Services)

Historical aerals from 1989 show an increase in development throughout the surrounding region. East of the study area (in the north-eastern corner of Lot 17 DP 629969) there is evidence of a residential development, which contains two structures, a round-a-bout driveway and landscaping efforts (Photo 6). The previous two small dams from the 1976 aerals, have been expanded into one large dam. Throughout the study area itself, continued terracing and potential excavation of soils can be seen throughout the extent of the site. No structures are visible within the study area.

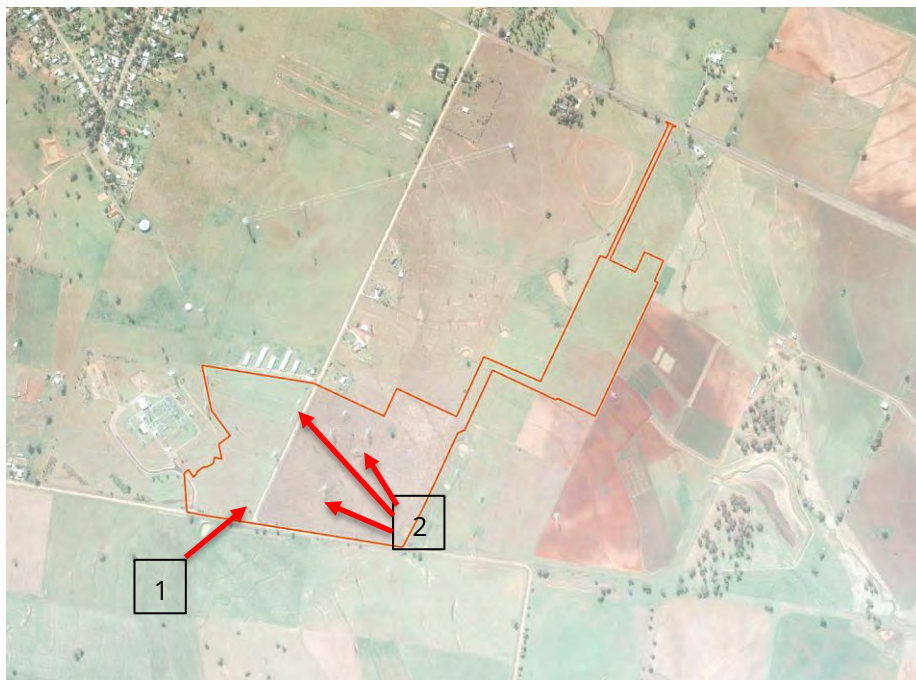


Photo 6 Aerial photograph dated to 1989, with the study area indicated by the red boundary (Source: NSW Spatial Services)

Aerials dating to 1997 show no significant changes to the study area (Photo 7).

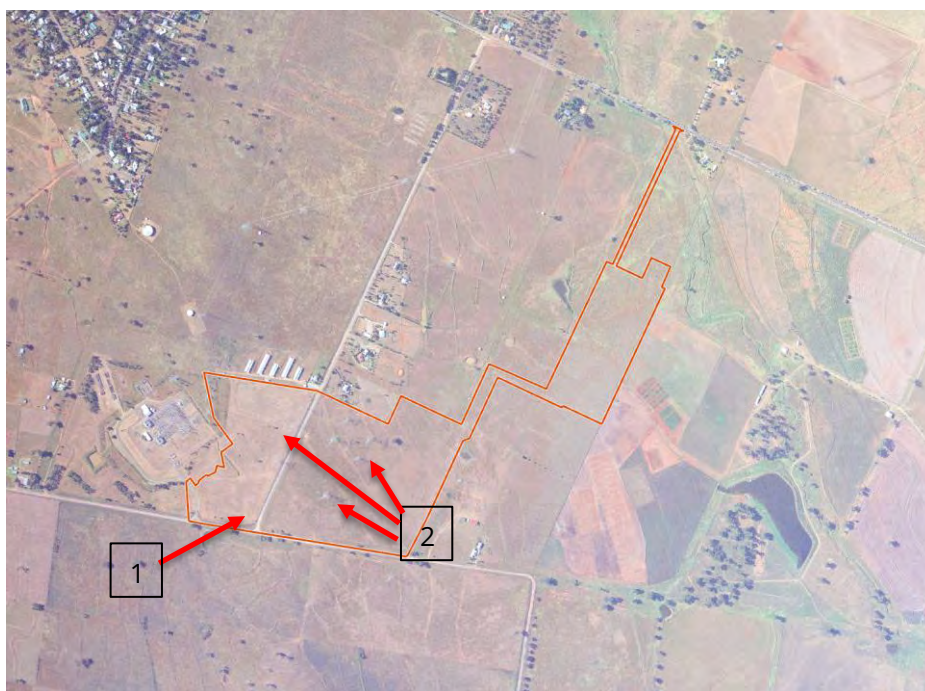


Photo 7 Aerial photograph dated to 1997, with the study area indicated by the red boundary (Source: NSW Spatial Services)

Current aerial imagery shows heavy ploughing and excavation of soils in the southern portion of the study area, with planted trees lining a fence line (Figure 2). Two shed structures [3] and [4] are present in the central portion of the study area, with the fence line present [5], extending from one of the sheds. A dirt track [6] is also visible in the northern portion of the site. Landform modification throughout the southern portion of the site is present. No other structures or development are visible to date.

3.4 Chronology of the study area

Based upon the historical research presented it is possible to summarise the chronology of the study area, this is presented in Table 4.

Table 4 Chronological development of the study area

Description	Date
Hunter River explored by European settlers	1797
Settlement established at the Hunter River	1801
Liverpool Plains region by Surveyor General John Oxley	1817-1818
Settlement established within the Liverpool Plains	1824
Formation of the AACo	1824
Acquisition of 316,000 acres (130,000 hectares) of land along the Peel River by the AACo	1832
Establishment of Kallala (Calala) Station	1834
Kallala Station relocates to Goonoo Goonoo	1841
Subdivision of the initial land grant to the AACo, with the study area	1909

Description	Date
located within parish portions 28, 29, and 30	
Extensive vegetation clearance and terracing within the study area and the construction of Burgess Lane [1] and a transmission line present in the south-western corner of the study area [2]	1976
Terracing and potential excavation of soils can be seen throughout the extent of the site	1989
Heavy ploughing and excavation of soils in the southern portion of the study area has occurred, with planted trees along the fence line within the study area. Two shed structures [3] and [4] are present in the central portion of the study area, with the fence line present [5]. A dirt track [6] in the northern portion of the study area has also been constructed.	2022

3.5 Research themes

Contextual analysis is undertaken to place the history of a particular site within relevant historical contexts in order to gauge how typical or unique the history of a particular site actually is. This is usually ascertained by gaining an understanding of the history of a site in relation to the broad historical themes characterising Australia at the time. Such themes have been established by the Australian Heritage Commission and the Heritage Office and are outlined in synoptic form in Historical Themes.³⁶

There are 38 State historical themes, which have been developed for NSW, as well as nine National historical themes. These broader themes are usually referred to when developing sub-themes for a local area to ensure they complement the overall thematic framework for the broader region.

A review of the contextual history has identified three historical themes which relates to the occupational history of the study area (Section 3.3). This is summarised in Table 5.

Table 5 Identified historical themes for the study area

Australian theme	NSW theme	Local theme
Developing local, regional and national economies	Agriculture	Activities relating to the cultivation and rearing of plant and animal species, usually for commercial purposes, can include aquaculture.
	Pastoralism	Activities associated with the breeding, raising, processing and distribution of livestock for human use.

³⁶ NSW Heritage Council 2001

4 Physical inspection

A physical inspection of the study area was undertaken on 16 August 2022, attended by Anthea Vella (Biosis, Heritage Consultant); on 13 December 2022, attended by Mathew Smith (Biosis, Senior Heritage Consultant) and Nathan Windram (Biosis, Graduate Heritage Consultant); and on 15 June 2023, attended by Anthea Vella and Bronte Baonza (Biosis, Graduate Heritage Consultant). The principal aims of the survey were to identify heritage values and archaeological potential associated with the study area; this included any heritage items (buildings, structures, places, relics or other works of historical, aesthetic, social, technical/research or natural heritage significance) or places (can include conservation areas, sites, precincts, gardens, landscapes and areas of archaeological potential).

4.1 Landscape character assessment

The purpose of this section is to provide an analysis and description of the study area as part of a cultural landscape. The cultural landscape concept emphasises the landscape-scale of history and the connectivity between people, places and heritage items. It recognises the present landscape is the product of long-term and complex relationships between people and the environment. For the purposes of this report cultural landscapes are defined as: ‘... those areas which clearly represent or reflect the patterns of settlement or use of the landscape over a long time, as well as the evolution of cultural values, norms and attitudes toward the land’.³⁷

4.1.1 An overview of cultural landscapes

In order to fully understand the heritage significance of the study area it is necessary to consider the character of the landscape within which it is situated. The heritage value of a landscape may be related to its aesthetic, archaeological, historical, scientific, social, or architectural values, each or all of these values can - exist at any one time. The identification of these values is important in discussing the study area and its constituent elements heritage significance.

Three general landscape categories have been developed and applied by heritage organisations to assist in understanding different types of landscapes:³⁸

- **Designed landscapes:** Those that are created intentionally such as gardens, parks, garden suburbs, city landscapes, ornamental lakes, water storages and campuses.
- **Evolved landscapes:** Those that display an evolved land use in their form and features. They may be 'relict' such as former mining or rural landscapes. They may be 'continuing' such as modern active farms, vineyards, plantations or mines.
- **Associative cultural landscapes:** These are landscape features that represent religious, artistic, sacred or other cultural associations to individuals or communities.

The study area consists of part of a lot located across an extensive rolling to undulating hill landscape. It is bordered on all sides by private property, and consists of agricultural paddocks, landform modification and agricultural sheds. The study area appears to have been used primarily for grazing and agricultural practices.

³⁷ Context Pty Ltd et al. 2002

³⁸ UNESCO 2012

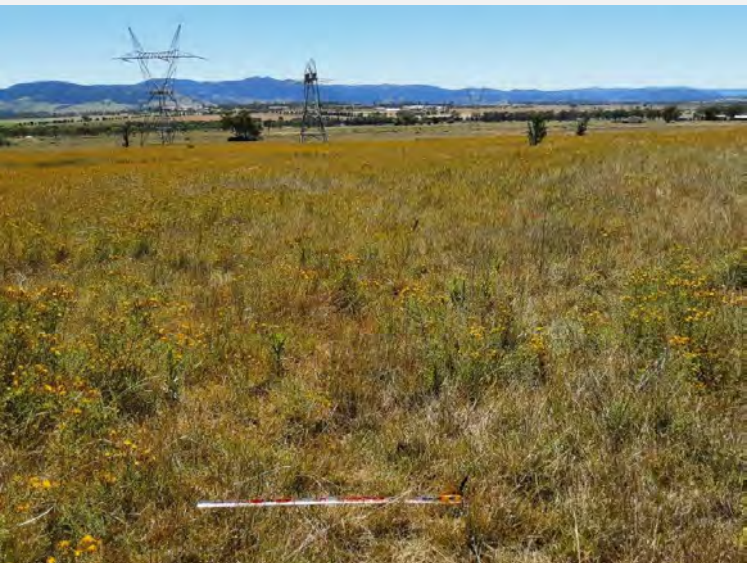
4.1.2 Views to and from the study area

It is important to analyse and describe views to and from components within a cultural landscape to help understand how it is experienced and to understand the nature of an evolving landscape. This enables a greater understanding of what aspects of the landscape need to be conserved and protected. Significant views to, from and within the study area are described in this section and shown in Table 6.

Table 6 Views across the study area

Orientation	Description	Photo
East	Views east across the northern portion of the study area	
East	Views east across the study area, showing gentle slope	

Orientation	Description	Photo
North	Views from the study area facing north	
South-west	Views within the study area, showing structure [2] facing south-west	
South-east	Views within the study area, facing south-east	

Orientation	Description	Photo
South-east	Views from the study area, facing south-east	
North-west	Views from the study area, facing north-west	
North-west	Views within the study area, facing north-west	

Orientation	Description	Photo
North	View from the study area, facing north	
West	View from the study area towards the substation, photo facing west	

4.2 Built fabric assessment

The study area only contained two farm sheds and fence lines, which reflect the rural nature of the study area (Table 7). The sheds were primarily constructed of corrugated sheet metal.

Table 7 Built structures in the study area

Structure No.	Building description	Photo
[3] and [4]	Corrugated iron sheds with metal frame.	

4.3 Archaeological assessment

The potential archaeological resource relates to the predicted level of preservation of archaeological resources within the study area. Archaeological potential is influenced by the geographical and topographical location, the level of development, subsequent impacts, levels of onsite fill and the factors influencing preservation such as soil type. An assessment of archaeological potential has been derived from the historical analysis undertaken during the preparation of this report.

4.3.1 Archaeological resource

This section discusses the archaeological resource within the study area. The purpose of the analysis is to outline what archaeological deposits or structures are likely to be present within the study area and how these relate to the history of land use associated with the study area.

The historical context presented in this report indicates that the study area was extensively cleared and utilised for agricultural and pastoral purposes prior to the 1970's. A transmission line [2] was constructed in the study area pre-1976. A review of Crown Plans and aerial imagery indicated that no physical structures were constructed in the study area until c.2000, with the primary use being for agricultural and pastoral uses. While the smaller farming sheds located on the survey do not appear on aerial imagery, observations of their condition and structure indicate they were constructed during the 2000s. A 2022 aerial shows two structures [3] and [4] in the study area. As a result the only potential archaeological resource predating the 2020's in the area would be associated with the agricultural and pastoral activities undertaken in the study area. This may consist of post holes from fence lines, agricultural marks such as plough lines and refuse relating to agricultural activities such as construction materials for the sheds or fences.

The built existing structures consist of corrugated iron with steel frame farm sheds, which are common throughout rural properties. There are no potential archaeological resources associated with these structures, as they are still present in the study area. For this reason they have been excluded from the archaeological assessment.

4.3.2 Integrity of sub-surface deposits

The study area has been used for agricultural and pastoral purposes from 1832 onwards, after its acquisition by AACo. Potential archaeological remains from this use could include post holes from fence lines, farming sheds. Activities associated with the use and upkeep of the land for agricultural and pastoral purposes include continual land clearance, and disturbances to the soils from cattle, vehicles or construction of the structures on site. These activities will have disturbed sub-surface deposits and potential archaeological resources associated with agricultural and pastoral uses have likely been removed. Therefore, it is likely that the integrity of sub-surface deposits in these areas is low.

4.3.3 Research potential

Archaeological research potential refers to the ability of archaeological evidence to provide information about a site that could not be derived from any other source and which contributes to the archaeological significance of that site. Archaeological research potential differs from archaeological potential in that the presence of an archaeological resource (i.e. archaeological potential) does not mean that it can provide any additional information that increases our understanding of a site or the past (i.e. archaeological research potential).

The research potential of a site is also affected by the integrity of the archaeological resource within a study area. If a site is disturbed, then vital contextual information that links material evidence to a stratigraphic sequence may be missing and it may be impossible to relate material evidence to activities on a site. This is generally held to reduce the ability of an archaeological site to answer research questions.

Assessment of the research potential of a site also relates to the level of existing documentation of a site and of the nature of the research done so far (the research framework), to produce a 'knowledge' pool to which research into archaeological remains can add.

Research theme

Developing local, regional, and national economies – Agriculture and Pastoralism

Based upon the historical context and documentary evidence presented within this assessment, it is unlikely that intact archaeologically significant remains associated with historical agricultural and pastoral land use will occur within the study area. There is no research potential present as these remains (if present) will likely consist of fence lines, post holes, plough marks, and farming sheds. Any remains associated with fence lines, post holes, plough marks and farming sheds would not contribute to the knowledge of the area that cannot be obtained from other sources.

4.3.4 Summary of archaeological potential

Through an analysis of the above factors a number of assumptions have been made relating to the archaeological potential of the study area, these are presented in Table 8 and Figure 5.

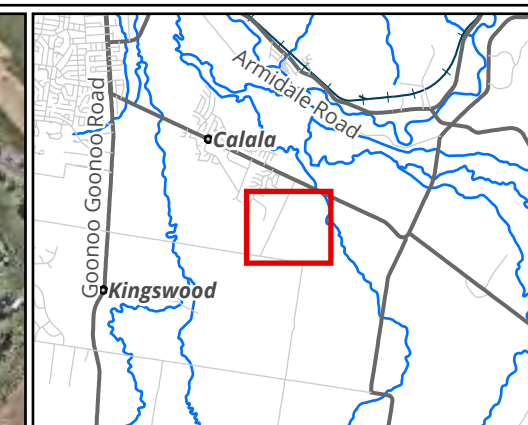
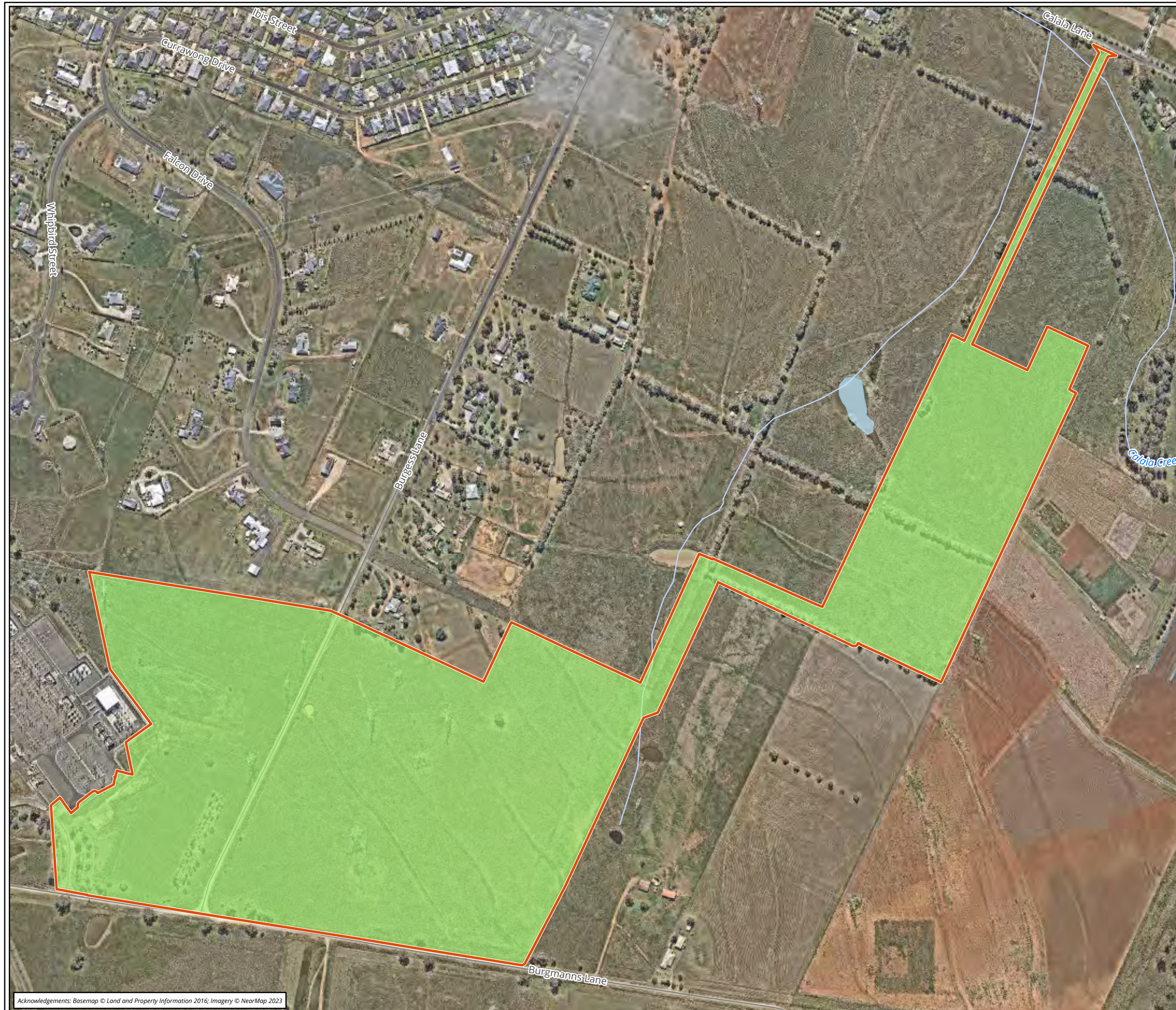
The assessment of archaeological potential has been divided into three categories:

- **High archaeological potential** – based upon the historical context and documentary evidence presented within this report there is a high degree of certainty that archaeologically significant remains relating to this period, theme or event will occur within the study area.
- **Moderate archaeological potential** – based upon the historical context and documentary evidence presented within this assessment it is probable that archaeologically significant remains relating to this period, theme or event could be present within the study area.

- **Low archaeological potential** – based upon the historical context and documentary evidence presented within this assessment it is unlikely that archaeological significant remains relating to this period, theme or event will occur within the study area.

Table 8 Assessment of archaeological potential

Designation	Description	Probable feature(s)	Possible construction date	Archaeological potential
-	Agricultural and pastoral land use	Fence lines, post holes, agricultural marks, farm sheds	-	Low
1	Burgess Lane	N/A – modern structure	Pre-1976	N/A
2	Transmission lines	N/A – modern structures	Pre-1976	N/A
3	Shed	N/A – modern structure	Pre-2022	N/A
4	Shed	N/A – modern structure	Pre-2022	N/A
5	Fence line	N/A – modern structure	Pre-2022	N/A
6	Access track	N/A – modern feature	Pre-2022	N/A



Legend

- Study area
- Low archaeological potential

Figure 5 Assessment of archaeological potential

0 50 100 150 200

Metres

Scale: 1:5,000@ A3
Coordinate System:
GDA 1994 MGA Zone 56



Matter: 37807, Date: 20 July 2023,
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5 Significance assessment

An assessment of heritage significance encompasses a range of heritage criteria and values. The heritage values of a site or place are broadly defined as the 'aesthetic, historic, scientific or social values for past, present or future generations'.³⁹ This means a place can have different levels of heritage value and significance to different groups of people.

The archaeological significance of a site is commonly assessed in terms of historical and scientific values, particularly by what a site can tell us about past lifestyles and people. There is an accepted procedure for determining the level of significance of an archaeological site.

A detailed set of criteria for assessing the State's cultural heritage was published by the (then) NSW Heritage Office. These criteria are divided into two categories: nature of significance, and comparative significance.

Heritage assessment criteria in NSW fall broadly within the four significance values outlined in the Burra Charter. The Burra Charter has been adopted by state and Commonwealth heritage agencies as the recognised document for guiding best practice for heritage practitioners in Australia. The four significance values are:

- Historical significance (evolution and association).
- Aesthetic significance (scenic/architectural qualities and creative accomplishment).
- Scientific significance (archaeological, industrial, educational, research potential and scientific significance values).
- Social significance (contemporary community esteem).

The NSW Heritage Office issued a more detailed set of assessment criteria to provide consistency with heritage agencies in other States and to avoid ambiguity and misinterpretation. These criteria are based on the Burra Charter. The following SHR criteria were gazetted following amendments to the *Heritage Act 1977* (Heritage Act) that came into effect in April 1999:

- Criterion (a) - an item is important in the course, or pattern, of NSW's cultural or natural history (or the cultural or natural history of the local area).
- 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 (or the cultural or natural history of the local area).
- Criterion (c) - an item is important in demonstrating the aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area).
- Criterion (d) - an item has strong or special association with a particular community or cultural group in NSW (or the local area) 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 (or the cultural or natural history of the local area).
- Criterion (f) - an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history (or the cultural or natural history of the local area).

³⁹ Heritage Office 2001

- 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; or a class of the local area's cultural or natural places; or cultural or natural environments.

The significance of Aboriginal cultural heritage within the study area has not been undertaken as part of this report. This has been developed separately as part of the Aboriginal Cultural Heritage Assessment.

5.1 Levels of heritage significance

Items, places, buildings, works, relics, movable objects or precincts can be of either local or state heritage significance, or have both local and state heritage significance. Places can have different values to different people or groups.

Local heritage items

Local heritage items are those of significance to the local government area. In other words, they contribute to the individuality and streetscape, townscape, landscape or natural character of an area and are irreplaceable parts of its environmental heritage. They may have greater value to members of the local community, who regularly engage with these places and/or consider them to be an important part of their day-to-day life and their identity. Collectively, such items reflect the socio-economic and natural history of a local area. Items of local heritage significance form an integral part of the State's environmental heritage.

State heritage items

State heritage items, places, buildings, works, relics, movable objects or precincts of state heritage significance include those items of special interest in the state context. They form an irreplaceable part of the environmental heritage of NSW and must have some connection or association with the state in its widest sense.

The following evaluation attempts to identify the cultural significance of the study area. This significance is based on the assumption that the site contains intact or partially intact archaeological deposits.

5.2 NSW Heritage Criteria for Assessing Significance related to Archaeological Sites and relics

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.⁴⁰ 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...that is scientific significance is defined as research potential.'⁴¹

In 2009 the Heritage Council of NSW endorsed the Heritage Branch Department for Planning (now Heritage NSW) guideline Assessing Significance for Historical Archaeological Sites and 'Relics' which considers a broader approach to archaeological significance rather than a focus on the research potential of an archaeological site only. It is noted that this archaeological significance assessment assesses the potential historical non-Aboriginal and the potential contact period archaeological potential for the study area.

⁴⁰ Bickford & Sullivan 1984, pp.19–26

⁴¹ Bickford & Sullivan 1984, pp.23–24

The following significance assessment is based upon the broader questions detailed in the 2009 endorsed guidelines.

5.3 Evaluation of significance

Criterion A: An item is important in the course, or pattern, of NSW's cultural or natural history (or the cultural or natural history of the local area).

Archaeological remains that may be present include fence lines, post holes and agricultural marks. Based upon the historical context and documentary evidence presented within this assessment it has been determined that these are not of importance in the pattern of NSW's cultural or natural history. Additionally, it is unlikely that archaeologically significant remains will occur within the study area.

The current structures in the study area are sheds which were constructed c.2000s. These sheds are modern in construction and are not of importance in the pattern of NSW's cultural or natural history.

The potential archaeological remains and built structures do not satisfy this criterion at a local or state level.

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 (or the cultural or natural history of the local area).

The study area has been used for agricultural purposes since the land grant to the AACo in 1832.

Archaeological remains associated with agriculture consist of fence lines, post holes and agricultural marks. There are no special associations relating to the AACo or subsequent owners and the historical research did not indicate the study area had any association with anyone of importance in NSW's cultural history, or the history of the local area. The built structures are not from this period of use.

The potential archaeological remains and built structures do not satisfy this criterion at a local or state level.

Criteria C: An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area).

Archaeological remains that may be present include fence lines, post holes and agricultural marks.

Archaeological remains such as these would not demonstrate aesthetic characteristics of a high degree of creative or technical achievement in NSW or the local area.

The current structures in the study area are sheds which were constructed c.2000s. Structures such as these are common in agricultural settings and do not demonstrate aesthetic characteristics and/or a high degree of creative or technical achievement in NSW or at the local level.

The potential archaeological remains and built structures do not satisfy this criterion at a local or state level.

Criterion D: An item has strong or special association with a particular community or cultural group in NSW (or the local area) for social, cultural or spiritual reasons.

While no community consultation has been undertaken for this report, the history has not indicated that the potential archaeological remains or current structures would have an association with a particular community or cultural group in NSW or the local area.

The potential archaeological remains and built structures do not satisfy this criterion at a local or state level.

Criterion E: *An item has the potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the cultural or natural history of the local area).*

Archaeological remains that may be present include fence lines, post holes and agricultural marks.

Archaeological remains such as these are not uncommon in a study area which has been used for agricultural purposes.

The current structures in the study area are sheds which were constructed c.2000s. Structures such as these are common in agricultural settings and are not uncommon, rare or endangered aspects of the area's cultural or natural history.

The potential archaeological remains and built structures do not satisfy this criterion at a local or state level.

Criterion F: *An item possesses uncommon, rare or endangered aspects of the area's cultural or natural history (or the cultural or natural history of the local area).*

Archaeological remains that may be present include fence lines, post holes and agricultural marks.

Archaeological remains such as these are not uncommon, rare or endangered in a study area which has been used for agricultural purposes.

The current structures in the study area are sheds which were constructed c.2000s. Structures such as these are common in agricultural settings and are not uncommon, rare or endangered aspects of the area's cultural or natural history.

The potential archaeological remains and built structures do not satisfy this criterion at a local or state level.

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. (or a class of the local area's cultural or natural places, or cultural or natural environments).*

The historical research and inspection has not indicated that the types of potential archaeological remains or current built structures within the study area would be important in demonstrating the principal characteristics of a class of NSW's cultural places or environments.

The potential archaeological remains and built structures do not satisfy this criterion at a local or state level.

5.4 Summary statement of significance

This assessment has not revealed any evidence of items, activities, or events occurring within the study area which are historically significant, either to the local area or NSW. Archaeological remains that may be present within the study area are likely to include fence lines, post holes, agricultural marks and farming sheds which hold no research potential and are unlikely to provide information that is of importance in the pattern of NSW's cultural history at a state or local level. The study area is not associated with a significant figure or community group within the local area and possesses low aesthetic value due to disturbances.

5.5 Archaeological significance

The study area has been used for agricultural purposes since the land grant to the AACo in 1832.

Archaeological remains associated with agriculture consist of fence lines, post holes, agricultural marks and farming sheds. These remains do not have a specific level of significance and would not contribute information that is not already available. Therefore, the study area contains low archaeological significance.

6 Conclusions and recommendations

6.1 Conclusions

These recommendations have been formulated to respond to client requirements and the significance of the site. They are guided by The Burra Charter with the aim of doing as much as necessary to care for the place and make it useable and as little as possible to retain its cultural significance.⁴²

6.2 Recommendations

Recommendation 1: The proposed works may proceed with caution

There are no listed items, or items of heritage significance, within or adjacent to the study area.

Works can proceed in the study area with caution as it has been assessed as possessing low archaeological potential. Should unexpected archaeological remains be uncovered during the course of the proposed works, Recommendation 2 should be implemented.

Recommendation 2: Discovery of unanticipated historical relics

Relics are historical archaeological resources of local or State significance and are protected in NSW under the Heritage Act. Relics cannot be disturbed except with a permit or exception/exemption notification. Should unanticipated historical archaeology be discovered during the course of the project, work in the vicinity must cease and an archaeologist contacted to make a preliminary assessment of the find. Heritage NSW will require notification if the find is assessed as a relic.

⁴² Australia ICOMOS 2013b

References

- Austin P 1994. A Dictionary of Gamilaraay Northern New South Wales, Bundoora: Department of Linguistics, La Trobe University.,.
- Australia ICOMOS 2013a. 'The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance', <https://australia.icomos.org/publications/charters/>.
- Australia ICOMOS 2013b. The Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance, Australia ICOMOS, Burwood, VIC.
- Australia ICOMOS 2013c. The Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance, Australia ICOMOS, Burwood, VIC.
- Australian Museum 2022. 'Cuddie Springs Archaeological Site, New South Wales', The Australian Museum, accessed 14 September 2022, <https://australian.museum/learn/cultures/atsi-collection/australian-archaeology/cuddie-springs-archaeological-site-new-south-wales/australian.museum/learn/cultures/atsi-collection/australian-archaeology/cuddie-springs-archaeological-site-new-south-wales/>.
- Australian National University, Archives 2012a. 'Peel River Land and Mineral Company', ANU Archives, <https://archivescollection.anu.edu.au/index.php/peel-river-land-and-mineral-company>.
- Australian National University, Archives 2012b. 'Deposit N65 - Australian Agricultural Company (Australian Office) deposit 6', <https://archivescollection.anu.edu.au/index.php/australian-agricultural-company-australian-office-deposit-6>.
- Baker 1997. The Civilised Surveyor: Thomas Mitchell and the Australian Aborigines. Carlton: Melbourne University.,.
- Banks R 2001. Soil Landscapes of the Tamworth 1:100 000 Sheet, Sydney.
- Bickford A & Sullivan S 1984. in Sullivan S, Bowdler S (eds.), Site Surveys and Significance Assessment in Australian Archaeology, Springwood Conference on Australian Prehistory, Department of Prehistory, Research School of Pacific Studies, the Australian National University, Canberra, 23–4.
- Binns R & McBryde I 1972. A Petrological Analysis of Ground-Edge Artefacts from Northern New South Wales., A.I.A.S.
- Boileau J 2007. Thematic History of Nundle, Manilla and Barraba. Tamworth Regional Council Community Based Heritage Study.,.
- Clarkson C, Jacobs Z, Marwick B, Fullagar R, Wallis L, Smith M, Roberts RG, Hayes E, Lowe K, Carah X, & Florin SA 2017. 'Human occupation of northern Australia by 65,000 years ago', *Nature*, 547, 7663: 306.
- Context Pty Ltd, Urban Initiatives Pty Ltd, & Doyle H 2002. Port Arthur Historic Site landscape management plan, Port Arthur Historic Site Management Authority, Tasmania.
- Davies SJ 1991. An Archaeological Assessment of the Proposed Optic Fibre Cable Route Between Scone and Tamworth, New South Wales, Report to Telecom Australia.

Fuller R, Anderson M, Norris R, & Trudgett M 2014. 'The Emu Sky Knowledge of the Kamilaroi and Euahlayi Peoples', *Journal of Astronomical History and Heritage*, 17, 2: 171–9.

Gaynor P 1996., The importance of quartz in stone artefact assemblages: a technological analysis of five Aboriginal sites of the Coonabarabran/Warrumbungle Region. Unpublished Master of Arts with Honours Thesis., University of New England.

Geoscience Australia 2022. 'Australian Stratigraphic Units Database - Noumea beds', accessed 7 December 2022, <https://asud.ga.gov.au/search-stratigraphic-units/results/14313>.

Goonoo Goonoo Station n.d. 'About: Goonoo Goonoo Station', <https://www.goonoogoonoostation.com/copy-of-careers>.

Gunson N 1976. 'Gunson, N. 1976. "Ridley, William (1819–1878)", Ridley, William (1819–1878)', *Australian Dictionary of Biography*, accessed 30 September 2018, <http://adb.anu.edu.au/biography/ridley-william-4477/text7309>.

Heritage NSW 1977. 'Heritage Act', accessed 4 December 2019, New South Wales Government Heritage Council. <https://www.legislation.nsw.gov.au/#/view/act/1977/136>.

Heritage Office 2001. 'Assessing Heritage Significance', accessed 31 January 2018, <https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Heritage/assessing-heritage-significance.pdf>.

Heritage Office & DUAP 1996. *NSW Heritage Manual*, Department of Urban Affairs and Planning, Sydney.

Hobden J, Davidson A, & Newman W 2005. *Jim Hobden's history of Tamworth* / edited by Annette 'Neti' Davidson, W. Newman, Tamworth, NSW.

McBryde I 1977. Determinants of assemblage variation in New England prehistory.,.

NSW Heritage Branch, Department of Planning 2009. 'Assessing Significance for Historical Archaeological Sites and "Relics"', <https://www.environment.nsw.gov.au/resources/heritagebranch/heritage/ArchSignificance.pdf>.

NSW Heritage Council 2001. 'New South Wales Historical Themes', <https://www.heritage.nsw.gov.au/assets/Uploads/a-z-publications/g-i/Historical-Themes.pdf>.

Ridley W 1856. 'Kamilaroi Tribe of Australians and Their Dialect, in a Letter to Dr Hodgkin', *Journal of the Ethnological Society of London*, 4, 1848–1856: 285–93.

State Library of New South Wales 2016. 'Gamilaroi Country', accessed 14 September 2022, https://www2.sl.nsw.gov.au/archive/events/exhibitions/2011/carved_trees/01_gamilaroi_country/index.html.

State of NSW 2022. 'Government Gazette of the State of New South Wales Number 262–Planning and Heritage', https://gazette.legislation.nsw.gov.au/so/download.w3p?id=Gazette_2022_2022-262.pdf.

Tindale NB 1974. *Aboriginal Tribes of Australia: The Terrain, Environmental Controls, Distribution, Limits and Proper names*, Australian National University, Canberra.

UNESCO 2012. 'Operational Guidelines for the Implementation of the World Heritage Convention',.

1948., *The Canberra Times* (ACT: 1926-1995): 6.