

TALLAWANG SOLAR FARM

Historical Heritage Assessment

FINAL

June 2022



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Prepared by
Umwelt (Australia) Pty Limited
on behalf of
RES Australia Pty Ltd

Project Director: Malinda Facey
Project Manager: Marion O'Neil
Technical Director: Tim Adams
Technical Manager: Melissa Moritz
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QMS Certification Services

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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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1.0 Introduction

RES Australia Pty Ltd (RES) is seeking to develop the proposed Tallawang Solar Farm in the Central West region of New South Wales (NSW), approximately 8 kilometres (km) northwest of Gulgong within the Mid-Western Local Government Area (LGA) (refer to **Figure 1.1**). The Tallawang Solar Farm includes up to 500 megawatts (MW) of solar electricity generation with a Battery Energy Storage System (BESS) of approximately 200 MW/400 MW-hours (the Project).

The Project lies within the Central West Orana Renewable Energy Zone (CWO REZ), established under the NSW Government's Electricity Strategy.

The Project will involve the construction, operation and decommissioning of a solar farm with a Battery Energy Storage System (BESS), a 330 kilovolt (kV) overhead transmission line of approximately 13 km long and associated infrastructure which will connect the Project to the national electricity grid. The Project's conceptual layout is included in **Figure 1.2**. One onsite switchyard and a 330 kV substation is proposed, at two possible locations within the solar farm and BESS development area (refer to **Figure 1.2**). The final location of the onsite switchyard and substation will be determined during detailed design.

The Project will have access from the Castlereagh Highway at a newly proposed access point via a local unserviced road directly south of the Project area (refer to **Figure 1.1**). Intersection works on the Castlereagh Highway are proposed as part of the Project to establish the Project access.

The Project will connect to the grid via the proposed CWO-REZ Transmission Project (including new 500 kV and 330 kV transmission lines, substations, and related infrastructure) currently being developed by the NSW Government to support the growth of the CWO-REZ. The CWO-REZ Transmission Project is subject to a separate development application process. The final arrangement and design of the CWO-REZ Transmission Project has not yet been confirmed, however based on consultation between the proponent and NSW Government, it is anticipated that the grid connection point for the Project will be via a proposed switching station near to the proposed Barneys Reef Wind Farm project area, directly north of the Tallawang Solar Farm. The proposed Barneys Reef Wind Farm is also being developed by RES and subject to a separate development application process. The proposed switching station will support independent connections from both the Tallawang Solar Farm and Barneys Reef Wind Farm projects.

The final alignment of the Project's overhead transmission line is subject to the final placement of the switching station and the grid connection point, however a 60 m wide corridor of approximately 13 km long has been identified by RES to support access to the anticipated connection point. The final placement of the transmission line for the Project will be determined in coordination with the Barneys Reef Wind Farm project.

For the purposes of this assessment, the Project Area is defined as the area inclusive of:

- the solar farm and BESS development area
- a transmission line corridor of approximately 13 km long and 60 m wide for an overhead transmission line connecting the Project to the proposed new to build grid infrastructure.

The Project encompasses eight freehold properties and some parcels of Crown Land ('paper roads'), covering an area of approximately 1,370 ha. These properties are primarily utilised for cropping and grazing activities. The development footprint for the Project is approximately 866 ha.

The Project is a State Significant Development (SSD) under the *State Environmental Planning Policy (Planning Systems) 2021* as the capital value of the Project is over \$30 million. A development application (DA) for the Project is required to be submitted under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

1.1 Purpose of this Assessment

This Historical Heritage Assessment (HHA) has been prepared by Umwelt Australia Pty Ltd (Umwelt) in accordance with the Secretary's Environmental Assessment Requirements (SEARs) issued by the Department of Planning, Industry and Environment (DPIE). This report identifies and assesses:

- listed heritage items located within or in proximity to the Project Area
- items, buildings, structures, or other elements of potential historical heritage significance (i.e., those which are not listed) located within or in proximity to the Project Area
- any areas of historical archaeological potential within or in proximity to the Project Area
- the likelihood, extent, and nature of potential impacts to any listed or unlisted items of heritage significance located within or in proximity to the Project Area
- develops appropriate measures to avoid, manage and/or mitigate any identified impacts.

1.2 Methodology

This HHA has been undertaken in accordance with guidelines set out in the NSW Heritage Manual 1996 (Heritage Office and Department of Urban Affairs & Planning), including:

- Archaeological Assessments
- Assessing Heritage Significance
- Statements of Heritage Impact
- Heritage Terms and Abbreviations.

This HHA has also been prepared with consideration of the best practice principles contained in the:

- The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance 1999 (Australia ICOMOS. 2000) (the Burra Charter)
- NSW Heritage Branch (now Heritage NSW), Department of Planning, 2009, Assessing Significance for Historical Archaeological Sites and 'Relics'
- NSW Heritage office (now Heritage NSW), Department of Planning, 2006, The Historical Archaeology Code of Practice.

A field inspection of the Project Area was undertaken by Umwelt in November 2021 to confirm the setting and context of the Project Area, and to identify if any potential heritage items are located within the

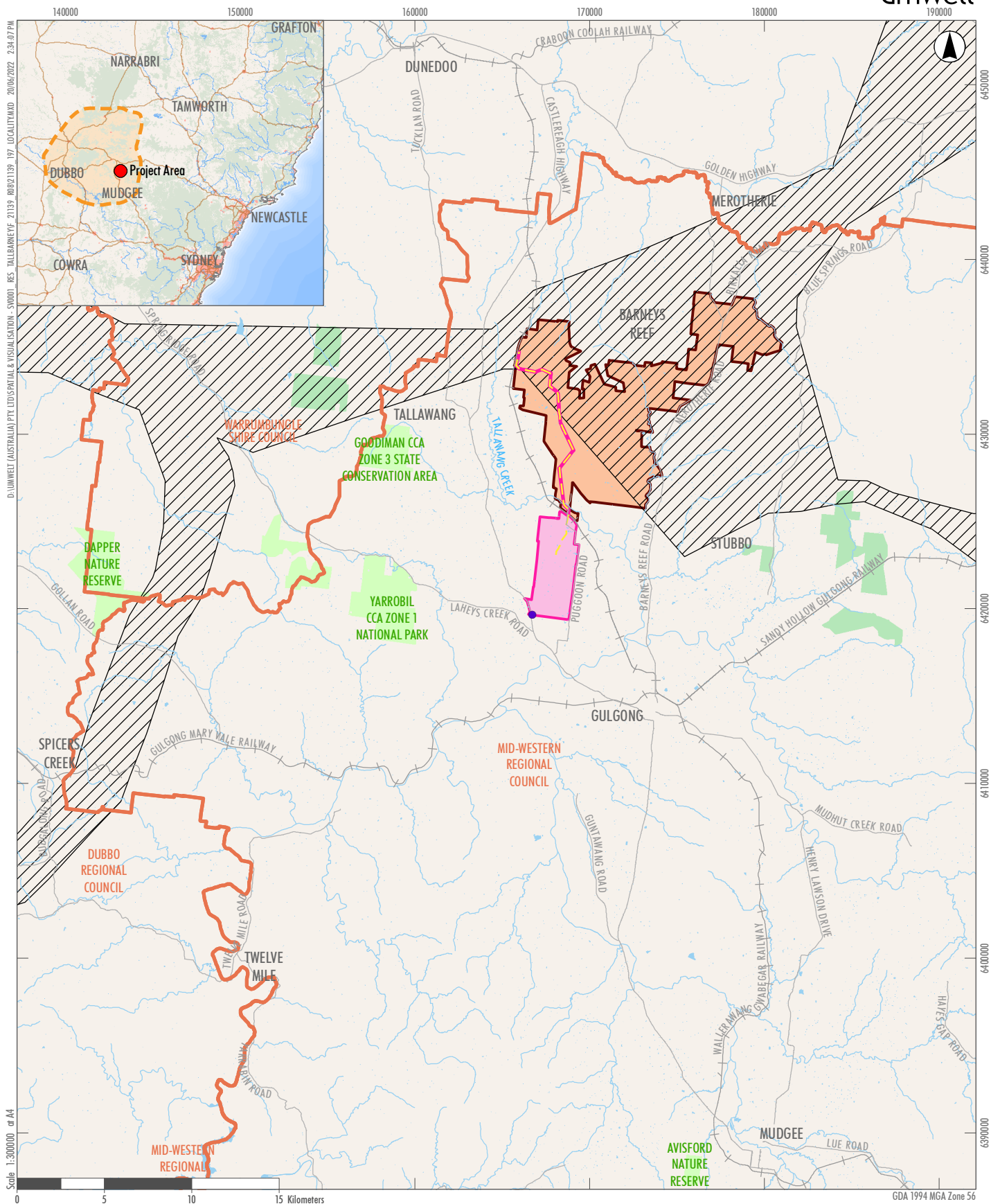
Project Area. The field inspection was undertaken by Umwelt's archaeologist concurrently with the site survey for Aboriginal Cultural Heritage Assessment.

1.3 Limitations

This report focuses on the assessment of historical heritage within the Project Area. Aboriginal cultural heritage and archaeology is assessed in a separate report prepared by Umwelt.

1.4 Report Authorship

This report has been prepared by Melissa Moritz, Senior Heritage Consultant. Review and input have been prepared by Tim Adams, Principal Heritage Consultant.

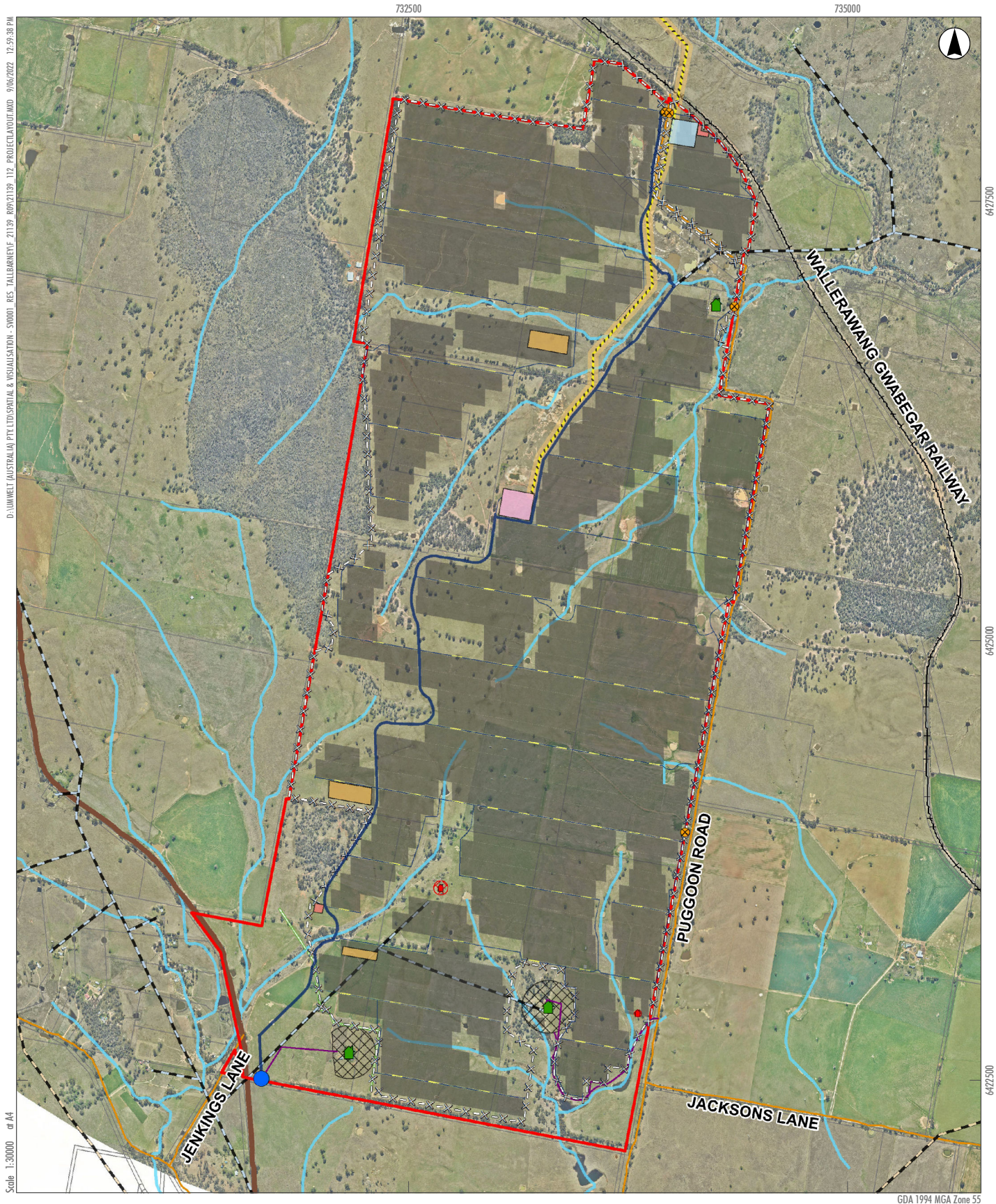


Legend

- Tallowang Solar Farm Project Area
- Barneys Reef Wind Farm Project Area
- Proposed HV Powerline
- ▨ Indicative Proposed Central West Orana REZ Transmission Corridor
- Indicative Central-West Orana Renewable Energy Zone
- Access Point
- National Parks (NPWS Estate)
- State Forest
- Road
- Drainage Line
- Railway Line

FIGURE 1.1

Location and Local Context

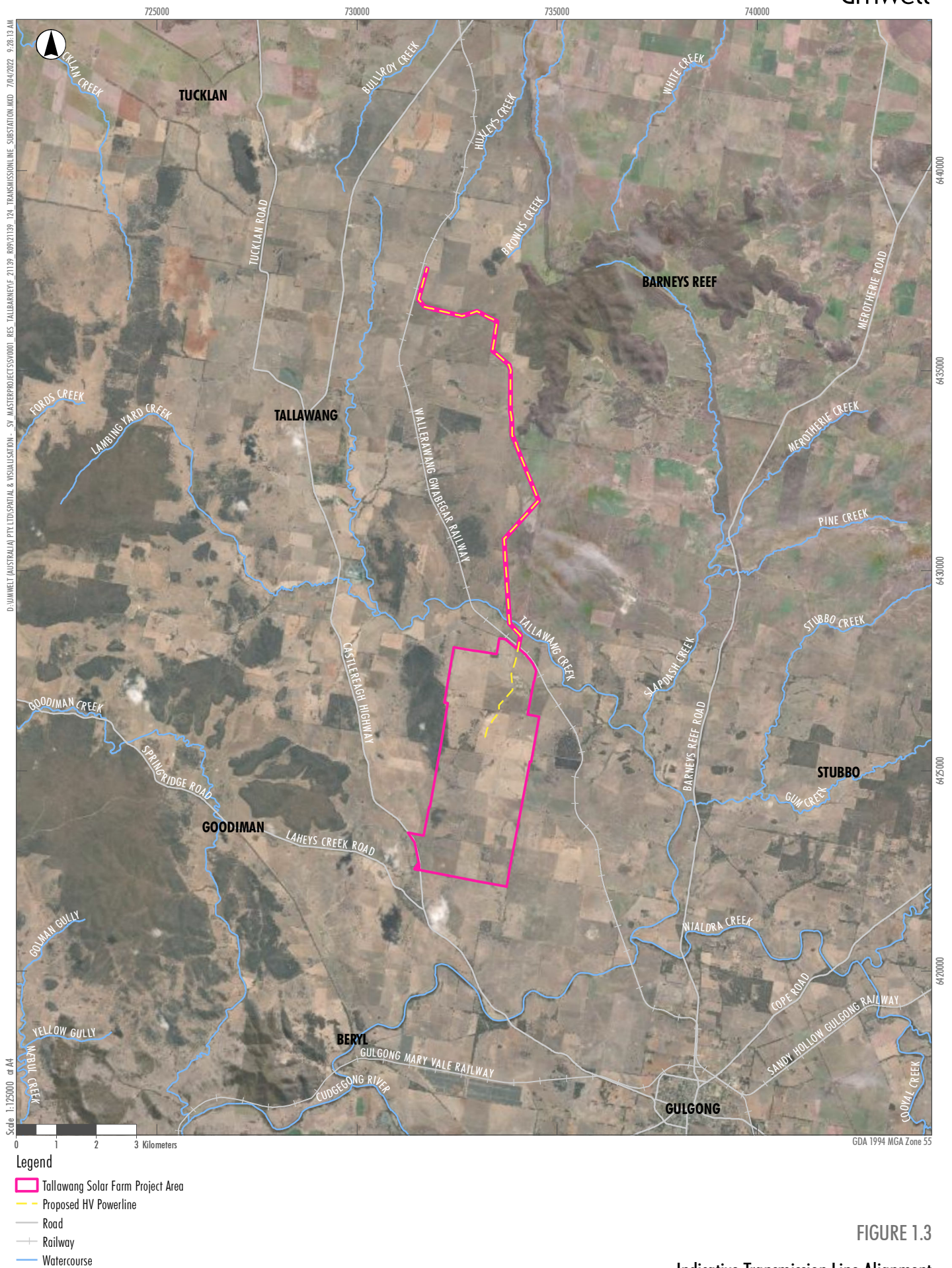


Legend

- | | | |
|--|--|--|
| ● Primary Project Access | — Proposed Transmission Line | — 22kV Distribution Line (To Be Rerouted Where Necessary) |
| ● Secondary Access | — Proposed Transmission Line Buffer, 30m | — Security Fence |
| — Proposed Single Axis Tracker | — Proposed Landscaping Area | — Project Area Boundary |
| — Bess and DC-DC Coupled PCs with Hardstanding | — Involved Dwelling | — NSW Cadastre (2021-11-02) |
| — Proposed Access Track | — Dwelling Exclusion Zone | |
| — Proposed O&M Facility | — Cultural Heritage Huts | |
| — Proposed Substation Central | — Cultural Heritage Huts Exclusion Zone | |
| — Proposed Substation North | — Water Course | |
| — Temporary Construction Compound & Laydown | — State Road | |
| — Proposed Landowner Access Track | — Local Road | |

FIGURE 1.2

Project Layout



2.0 Statutory Context

2.1 Statutory Listings

2.1.1 Commonwealth Legislations and Policies

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is the Australian Government's environment and heritage legislation. This Act is triggered by developments or actions that will have a significant impact on Matters of National Environmental Significance (MNES), including world heritage areas, Commonwealth marine areas, nationally threatened species and communities and migratory birds. The EPBC Act includes a process for the assessment of proposed actions that have, or are likely to have, a significant impact on matters of national environmental significance. These actions require approval from the Commonwealth Minister, Environment and Heritage.

A new national heritage system was established in January 2004 under the EPBC Act. This led to the introduction of the National Heritage List, which recognises and protects places of outstanding heritage to the Nation, and the Commonwealth Heritage List, which includes Commonwealth owned or leased places of significant heritage value.

No heritage items of National or Commonwealth heritage value are located within the Project Area.

2.1.2 State Legislation

2.1.2.1 Heritage Act 1977

The *Heritage Act 1977* (Heritage Act) is administered by Heritage NSW. The purpose of the Heritage Act is to ensure cultural heritage in NSW is adequately identified and observed. The Heritage Act is the primary item of state legislation affording protection to items of environmental heritage (natural and cultural) in NSW. Under the Heritage Act 'items of environmental heritage' include places, buildings, works, relics, moveable objects, and precincts identified as significant based on historical, scientific, cultural, social, archaeological, architectural, natural, or aesthetic values. State significant items are listed on the NSW State Heritage Register (SHR) and are given automatic protection against any activities that may damage an item or place or affect its heritage and/or archaeological significance.

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

2.1.2.2 Relics Provision of the Heritage Act 1977

The Heritage Act affords automatic statutory protection to 'relics' which form part of archaeological deposits (except where these provisions are suspended by other prevailing legislation). The Heritage Act defines a 'relic' as any deposit, object, or material evidence that:

- relates to the settlement of the area that comprises NSW, not being Aboriginal settlement, and
- is of state or local heritage significance.

Sections 139-145 of the Heritage Act prevent the excavation or disturbance of land known or likely to contain relics, unless in accordance with an excavation permit. Section 60 excavation permits are required to disturb relics within SHR items/places, while Section 140 permits are required for items/places that are not listed on the SHR.

As part of a Section 60 Application that involves the disturbance and/or archaeological investigation of 'relics', an Archaeological Research Design and Methodology, as well as the nomination of a suitably qualified Excavation Director, will be required.

Section 57(2) Exemptions and Section 139 Exceptions may also apply if it can be demonstrated that the proposed works will result in no or only minor impact to a potential archaeological resource. An assessment of impacts, prepared by a suitably qualified archaeologist, is required to demonstrate this.

In 2001 the Heritage Council issued the Revised Assessing Significance guidelines and in 2009 the Assessing Significance for Historical Archaeological Sites and 'Relics' which outline specific criteria for addressing the significance of an item or archaeological site.

No identified historical archaeological remains are located within the Project Area. No consent for the Project Works is required under the Heritage Act.

2.1.2.3 Environmental Planning and Assessment Act 1979

The *Environmental Planning and Assessment Act 1979* (EPA Act) governs strategic planning and development assessment processes undertaken by State and Local Government in NSW. The Act requires that Local Governments prepare planning instruments (such as Local Environmental Plans [LEPs] and Development Control Plans [DCPs]) in accordance with the Act to provide guidance on the level of environmental assessment required.

The Project will require development consent under Part 4 of the EP&A Act.

2.1.2.4 Mid-Western Regional Local Environmental Plan 2012

The Project Area falls within the Mid-Western Regional Local Government Area (LGA) is therefore subject to the planning provisions of the *Mid-Western Regional Local Environmental Plan 2012* (LEP).

Part 5 Clause 5.10 of the Mid-Western Regional LEP provides the statutory framework for heritage conservation including the conservation of:

- the environmental heritage of Mid-Western Regional
- the heritage significance of heritage items and heritage conservation areas, including associated fabric, settings, and views
- archaeological sites
- Aboriginal objects and Aboriginal places of heritage significance.

2.2 The Burra Charter (The Australian ICOMOS Charter for Places of Cultural Significance (2013))

The Burra Charter is a set of best practice principles and procedures for heritage investigations and conservation. The charter was developed by the Australian group of the international professional organisation for conservation; the International Council for Monuments and Sites (ICOMOS). Although it is not a statutory document, the Burra Charter provides a best practice standard for heritage management in NSW and Australia. The policies and legislative guidelines of the Heritage Council of NSW and Heritage NSW are consistent with and guided by the Burra Charter.

2.3 Relevant Heritage Listings

To inform this assessment, searches of all relevant heritage databases were undertaken. This includes searches of:

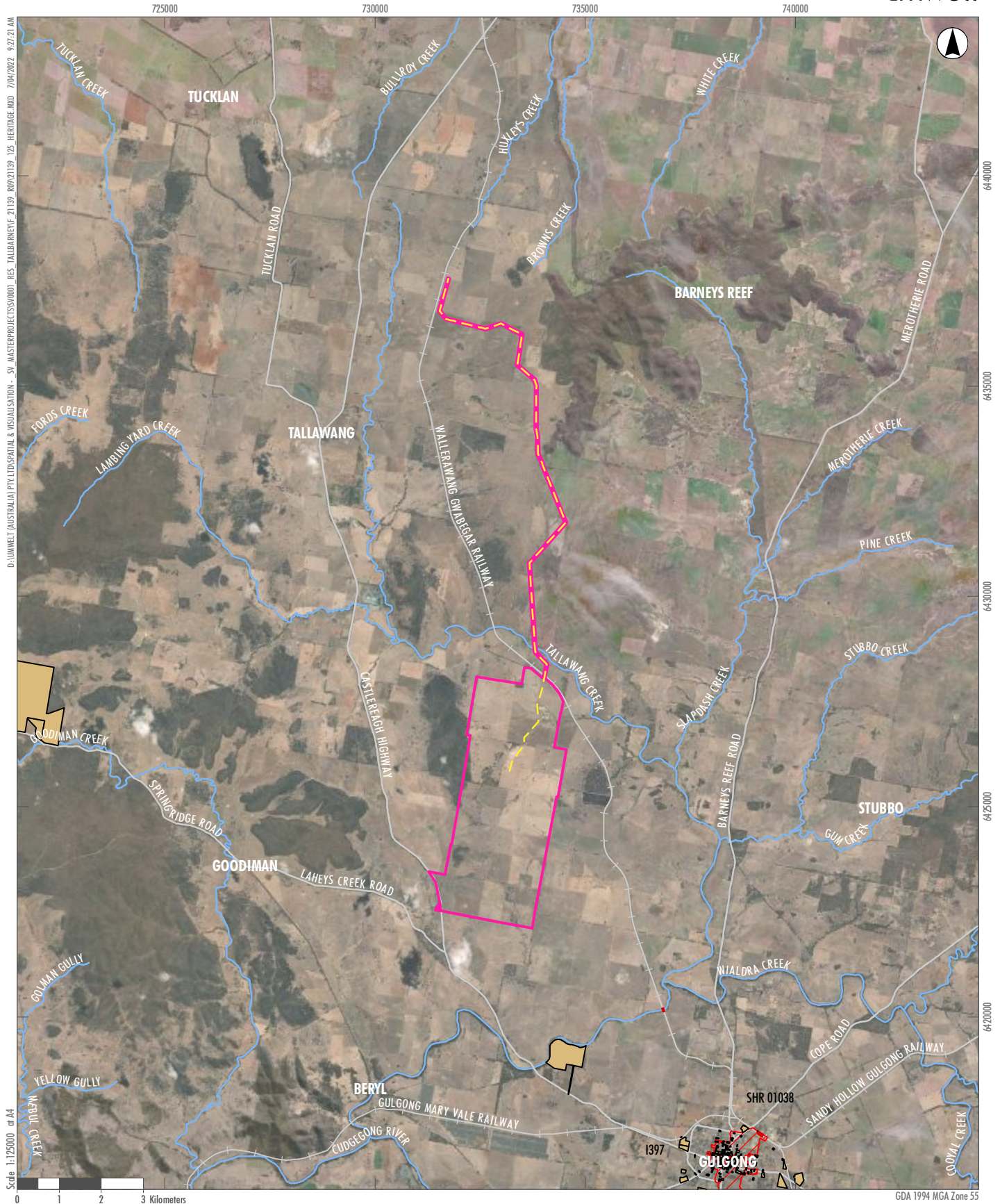
- The Commonwealth Heritage List
- The National Heritage List
- The State Heritage Register
- Heritage Act Section 170 Heritage and Conservation Registers (where publicly accessible)
- relevant Local Environmental Plans (LEPs).

As a result of these searches, it has been identified that:

- no Commonwealth or Nationally listed heritage items or places are located within the Project Area
- no State listed heritage items are located within the Project Area
- no items listed on any s170 Heritage and Conservation Registers (NSW State agency heritage registers) are located within the assessment area
- no items listed on Schedule 5 of an LEP are located within the Project Area.

However, there are several local heritage items in the region surrounding the Project Area, the nearest local heritage item being 'The Lagoon' homestead—item I397 on the Mid-Western Regional LEP (as shown on **Figure 2.1**). This is located approximately 2.1km southeast of the Project Area. The township of Gulgong is listed as a Heritage Conservation Area in the Mid-West Regional LEP. This is located approximately 6.7km to the southeast of the Project Area.

The nearest State heritage item is the 'Gulgong railway bridge over Wialdra Creek' (SHR item 01038) which is located approximately 3.4km southeast of the Project area. **Figure 2.1** shows the location of these heritage items in the context of the Project Area.



- Legend**
- Tallawang Solar Farm Project Area
 - Proposed HV Powerline
 - Road
 - Railway
 - Creeks/Rivers
 - State Heritage Register
 - Environmental Planning Instrument - Heritage**
 - Conservation Area - General
 - Item - General

FIGURE 2.1
Recorded Heritage Items
in Proximity to the Project Area

3.0 Historical Context

The following section provides an overview of the relevant historical context for the Project Area.

3.1 European Settlement of the Region

The first European exploration of the Gulgong area was undertaken by William Lawson in November of both 1820 and 1821. After accepting command of the Bathurst settlement, Lawson utilised his free time searching for large expanses of good pasturable land. Although his land holdings already included a 3-thousand-acre farm at Prospect, his ambitions of becoming a leading wool grower in the colony would require a far greater holding.

On return from his journey Lawson reports an abundance of suitable pastoral land and shortly after applied for land grants to the north of Gulgong area.

The Cox brothers (sons of William Cox) took up land to the south of Cudgegong River, with other settlers soon following. Richard Rouse was one of the first European settlers who was able to take formal possession, after receiving a land grant from Governor Brisbane in 1825 (Cox and Stacey 1973). At this time, the only way to own land was by grant from the Governor, and one could get up to 30 acres of land, without a required payment (State Library NSW).

In 1826, concerned with the settlers straying beyond ‘the reach of government authority’ and the increase in the number of escaped convicts ‘roaming the bush and preying on helpless travellers’, Governor Darling drew up an approximate 400km semicircular line from the centre of the fledgling town of Sydney. This was declared the ‘limits of location’, beyond which it was prohibited for any settler to graze their animals. This limit was expanded in October 1829 to encompass the 19 Counties surrounding Sydney (State Archives & Records). This included the County of Bligh, where the Project Area is located.

From 1828 onwards, land grants were acquired through grazing licences, with settlement of the area spreading by both legal and illegal means (New South Wales Archaeology Pty Ltd 2017). This area was known as Tallawang by the 1930s, with many people raising sheep.

Not surprisingly the ‘Limits’ set by Darling were ignored, and within a few years it was estimated that almost half of the colony’s sheep were grazed illegally on ‘crown land’ beyond the boundary or without formal ownership at the edge of the 19 Counties (State Library). Those using the land were referred to as ‘squatters’ which unlike today, was used to describe *‘a person of high social prestige who grazed livestock on a large scale – often having no legal title to the land beyond being the first European to settle on it’* (State Library NSW). The expanding colony in the 1830s, and a need to feed growing numbers gave a push for the settlers to increase this ‘squatting’ as the demand for meat to increased.

This land use pattern does not allow for accurate land users following European settlement of the area. This also made it difficult for the government administration. In efforts to reach a compromise in 1836, under the governorship of Sir Richard Bourke, ‘squatter’s rights’ were created, allowing farmers temporary occupancy beyond the official line for an annual payment of £10.

In 1837, as expansion of the colony into the reaches of the bush continued at rapid speed, Robert Dixon, explorer, and surveyor, set out to draw up a comprehensive list of individuals responsible for the spread of European settlement. Known as the ‘Squatters Map’, this engraved chart of NSW set out the acreage of land grants and sold landholding in the colony up to June 1836 (**Figure 3.1**). This included the annotation of property owners (State Library). This map shows Rouse’s land holdings around the location of present-day Gulgong. The land to the north and west of Wildra Creek and Cudgegong River remains largely crown land, with limited areas recorded as privately owned. This includes the Project Area, which does not appear to have been sold or granted to European settlers at this time.



Figure 3.1 ‘Squatters Map’ showing the County of Bligh where the project area is located

Source: State Library of NSW

3.2 Gulgong's Goldrush

Settlement in the area was slow, with large swathes of agricultural land gradually opened up at the edges of Governor Darling's 'Limit', even following the establishment of squatter's rights. It was not until the discovery of gold in Red Hill that development of the area began in earnest (Mudgee Region). The Town of Gulgong was surveyed in August of 1870, with over 800 people reported to be on the gold fields by the end of that year. The population had swelled to 12 thousand by October 1871.

The Project Area is located in the Tallawang Gold Field, proclaimed in August 1870, with some private landholders in the north of the Project Area appearing by 1886 on the parish maps (**Figure 3.2** and **Figure 3.3**). As the area opened up with the possibility of gold, the Project Area was divided up further into private land holdings. Numerous publications following the Gold Rush in 1870 depict the vast areas that were being worked by individual proprietries and groups alike, with the course of the diggings '*easily traceable by the upturned ground and the sinkings along the lines of the abandoned claims*' (Australian Town and Country, May 1870).

Along with this mining activity came a boom in both Gulgong township and the construction of Inns and schools for Tallawang located along the road between Dunedoo and Gulgong although these have long since disappeared, with little remaining of the former Tallawang township. This was located along what is now the Castlereagh Hwy, to the south and west of the Project Area. As the population of Gulgong and the wider goldfields swelled during 1870-1881, informal accommodations such as tents or lean-to dwellings were likely erected between the goldfields and the formally established towns. Although historical records do not indicate structures or permanent / semi-permanent dwellings were located within the Project Area it is likely that prospectors in the area at this time erected tents or other temporary shelters in the vicinity of the goldfields to provide cheap accommodation, as was common in goldfields across Australia at the time (Lawrence and Davies 2011)

The Gold Rush ended in 1881, with a steady decline of gold mining in the area over the 1880s and 1890s. The coming decades saw the private landholdings by individuals give way to corporations such as the Bank of New South Wales, The Australian Bank of Commerce Ltd and the British and Australasian Trust and Loan Corporation Ltd. So too did the land activities change, which mineral leases extending from gold to other materials such as Kaolin and Ironstone as indicated by the parish maps of the area from 1910s and 1920s (**Figure 3.4**). This was the case with the Project Area, where several landholdings were granted mineral leases, however the extent to which this occurred across the landscape is hard to quantify.



Figure 3.2 1886 Parish Map for the Parish of Puggoon, County of Bligh.

Source: State Library of NSW



Figure 3.3 1886 Parish Map for the Parish of Tallawang, County of Bligh.

Source: State Library of NSW

The railway line was extended from Mudgee to Gulgong in 1909, and further again to Dunedoo in 1910. This section passes through the Project Area near Tallawang Creek at Puggoon. The station at Puggoon was opened in 1910, similar to the nearby Tallawang Station. Puggoon Station likely consisted of a platform, platform building and siding and would have serviced the agricultural properties and mining tenants in the areas north of Gulgong (**Figure 3.5**).

Those miners who stayed in the area turned their eye to farming as the claims became less profitable, with such agricultural properties making up much of the landscape today. Three residential structures were located within the Project Area by 1964, visible on historical aerial imagery (**Figure 3.5**), two of which are extant.

Puggoon and Tallawang Stations ceased operating in the 1970s and the platform buildings and other associated structures appear to have been demolished.

Agricultural use has continued following the end of goldmining in the Project Area, with the construction of several structures within the Project Area.

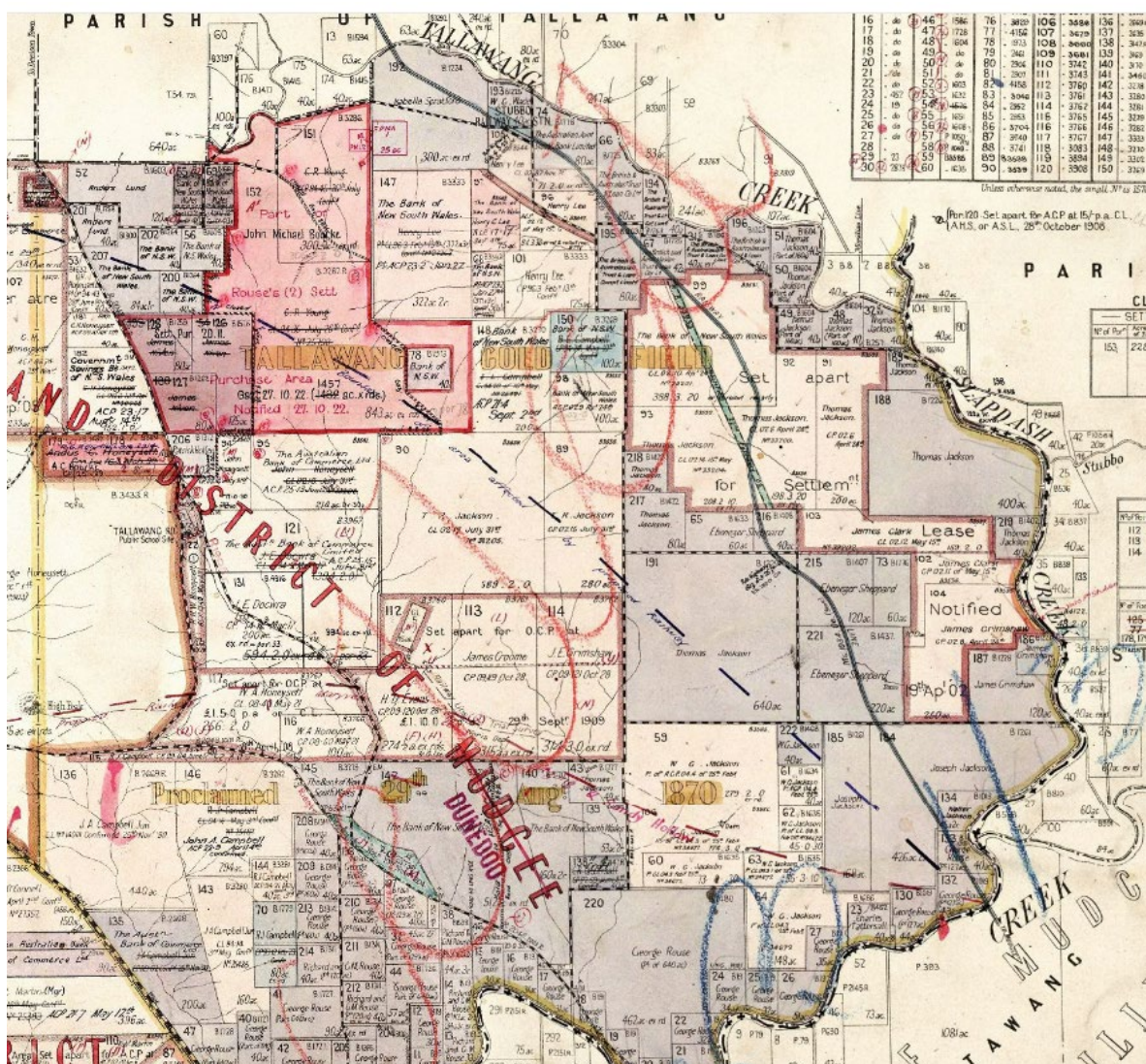


Figure 3.4 1916 Parish Map for the Parish of Puggoon, County of Bligh

Source: State Library of NSW



FIGURE 3.5

Location of Historical Infrastructure
within Tallowang Solar Farm

4.0 Project Area Description

The Project Area comprises the solar farm and BESS development area as well as a transmission line corridor of approximately 13 km long and 60 m wide for the overhead transmission line connecting the Project to the proposed new to build grid infrastructure. The Project Area is located between Tallawang (to the northwest), and Gulgong (to the southeast) as shown in **Figure 1.1**.

The Project Area generally includes undulating plains, which have been extensively cleared of vegetation for agricultural use, although some stands of vegetation and isolated trees remain across the landscape (**Photo 4.1**). A series of drainage lines and connection points, such as farm dams are scattered across the area, as well as a series of creeks and their tributaries which are spread across the broader landscape (**Photo 4.2** and **Photo 4.3**).

The overhead transmission line runs for approximately 13 km in a north-northwest direction from the north boundary of the Tallawang Solar Farm, crossing the railway line in the vicinity of the former Puggoon Railway Station (**Figure 3.5**). This part of the Project Area includes mostly cleared agricultural land. Aerial imagery does not indicate any structures located in this footprint, with the nearest structure located approximately 600 m west of the transmission line within the proposed Barnes Reef Wind Farm. This was also confirmed during the visual inspection undertaken by Umwelt.

The Tallawang Solar Farm site is an irregularly shaped area, approximately 1,300 ha in size. The southwest corner of the Project Area is located adjacent to the Castlereagh Hwy, with direct access from the northeast side of the highway. The northern boundary of the Tallawang Solar Farm site is adjacent to the railway line, near the former Puggoon Railway Station, and the Tallawang Creek. Puggoon Road runs along the eastern boundary of this section of the Project Area, intersecting the railway line at the northeast corner of the Tallawang Solar Farm site.

Several unoccupied non-residential structures, three residential structures (one unoccupied), a series of fences and private access tracks are located within the Tallawang Solar Farm site. The structures are generally associated with ongoing agricultural use of the Project Area at present and are of varying ages and conditions.

One of the residential structures (identified as PHI1) is an old (c.1900) weatherboard cottage with veranda to the front elevation (**Photo 4.5**). The roof to the building is hipped with a gablet to the centre, with a bullnose veranda roof, both of which are corrugated metal sheeting. There are also two brick chimneys remaining. The windows are timber framed sash windows with timber and metal sheet awnings over the side windows. There is also a timber door to the front elevation. The cottage has been modified over time with a c.1930s fibrous cement sheeting addition constructed to the rear of the building. There are several structures in the vicinity of this cottage, including metal water tanks and sheds, all in various states of decay.

A single room hut (identified as PHI2) dating from the late nineteenth century (likely c.1870) remains near the southeast boundary of the Tallawang Solar Farm site. It is a small rectangular timber framed structure on a concrete slab. There is a low-pitched hipped roof. The roof and external walls of the hut are clad with corrugated metal sheets, which have likely been replaced since its construction. The front elevation has two small rectangular windows with a fixed pane of glass and a timber framed. A brick chimney is located on one side of the hut. Internally the ceiling consists of the timber rafters and underside of the metal sheet roofing and the walls are lined with machine milled V-jointed timber boards. The brick fireplace remains, along with the simple timber mantel piece which sits high on the wall above the hearth.



Photo 4.1 **General view within the Project Area**



Photo 4.2 **View within the Project Area showing grazing and cropping paddock and a farm dam**



Photo 4.3 Eroded drainage line within the Project Area
 Located near the middle of the west boundary to the Project Area.



Photo 4.4 Railway line, looking towards location of Puggoon Station

Photograph taken from the intersection of the railway line and Puggoon Road.



Photo 4.5 c.1900 cottage (PH11) within a fenced yard within the Tallawang Solar Farm site



Photo 4.6 Side elevation of the c.1900s cottage

The image shows the c.1930s additions and modifications to the rear of the cottage



Photo 4.7 Ancillary structures and shed associated with the c.1900s cottage



Photo 4.8 c.1870 hut (PHI2) within the Tallawang Solar Farm site

Image shows the brick chimney, and corrugated sheet metal roof and wall covering. The sheet metal to the walls is likely a later addition.



Photo 4.9 **Fireplace and timber boarded walls within the c1870s hut**

5.0 Assessment of Historical Heritage

5.1 Assessing Heritage 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 looking after important places.

Cultural significance is defined as being present in the ‘fabric, setting, use, associations, meanings, records, related places and related objects’. The fabric of a place refers to its physical material and can include built elements, sub-surface remains and natural material (Australia ICOMOS 2000).

5.1.1 Heritage Significance Criteria

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

The seven criteria defined by the former Heritage Division, OEH, and used by the NSW Heritage Council as an assessment format within NSW have been used in the preparation of this HHA. 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 in NSW. Most heritage in NSW is of local significance.

5.2 Identified Potential Heritage Items

A visual inspection of the Project Area was undertaken by Umwelt in November 2021. Undertaken concurrently with the site survey for Aboriginal cultural heritage assessment, the visual inspection was intended to confirm the setting and context of the Project Area, and to identify if any potential heritage items are located within the Project Area.

The Project Area consists generally of undeveloped or agricultural landscape, with limited built elements or structures. Of the structures identified during the visual inspection and historical research (shown on **Figure 3.5**), two items were identified as being of potential heritage significance and therefore warranting a preliminary assessment of significance. The two items, referred to as Potential Heritage Items (PHIs) are shown on **Figure 5.1** and **Photo 4.5 to Photo 4.9** and include:

- **PHI 1** – c.1900s weatherboard cottage
- **PHI 2** – c.1870 hut.

An assessment of these items against the NSW Heritage Council criteria is provided in **Table 5.1** and **Table 5.2** below.

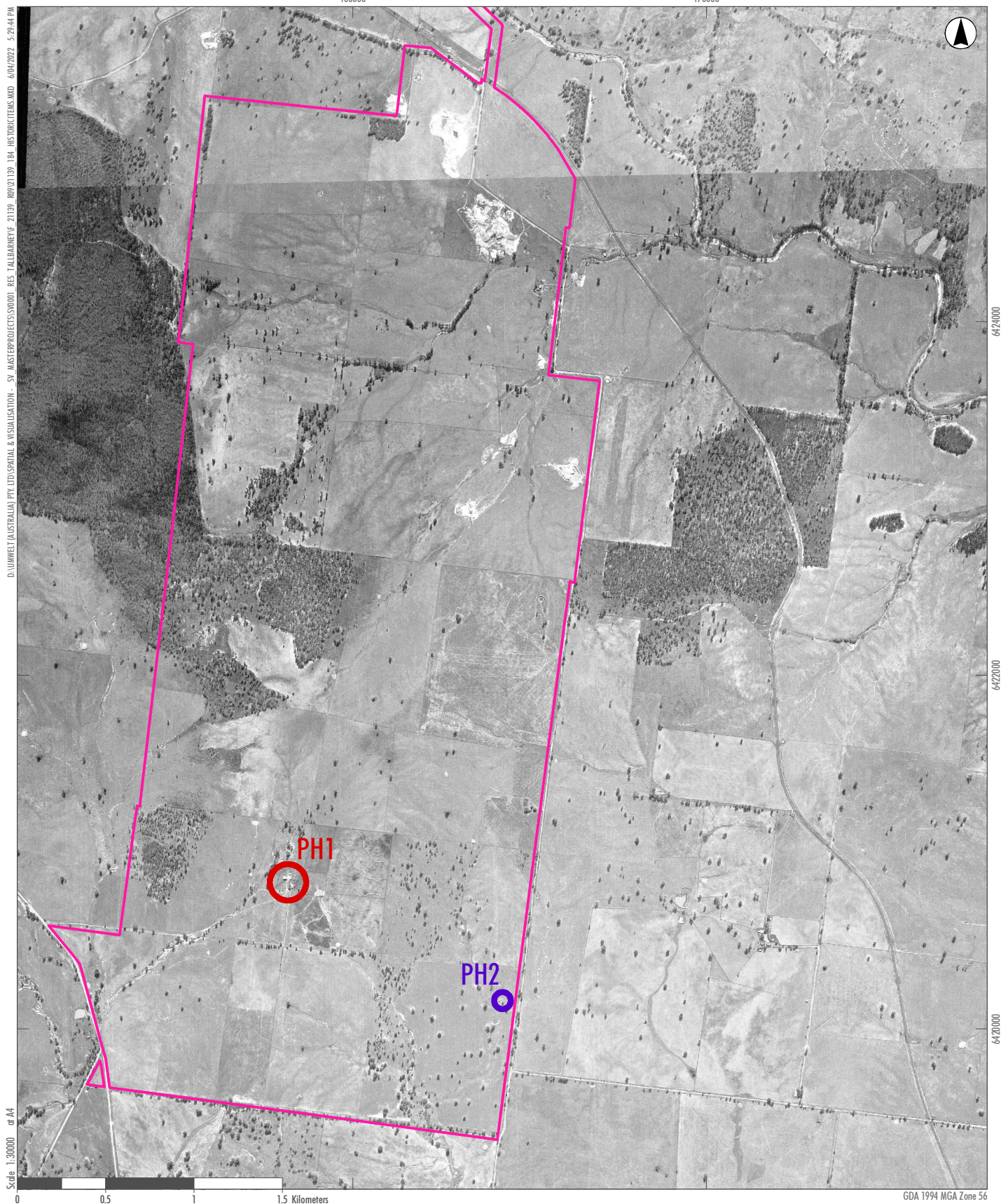
Table 5.1 Assessment of Heritage Significance – Weatherboard Cottage (PHI 1)

Criterion	Application of Criteria
Criterion A – Historical Significance	The weatherboard cottage (PHI1) is evidence of the solidification agricultural settlement in the Gulgong at the start of the twentieth century. It is likely associated with refocussing on agricultural pursuits in the area following the decline goldrush and establishment of permanent homesteads in the former goldfields surrounding Gulgong. This item meets the threshold for local significance under this criterion.
Criterion B – Associative Significance	Review of the historical background and available information for the weatherboard cottage has not identified any associations with a person or group of persons of importance to the development of the local area or NSW. This item does not meet the threshold for local or state heritage significance under this criterion.
Criterion C – Aesthetic or Technical Significance	The weatherboard cottage and its immediate setting provides an example of a homestead at the turn of the nineteenth century in NSW. The cottage, albeit modified, displays typical characteristics of Victorian architectural styles, such as the bullnose veranda roof and corbelled brick detailing to both chimneys as well as the timber sash windows and four panelled timber doors with glazing to the upper panes. This item meets the threshold for local significance under this criterion.
Criterion D – Social Significance	The review of historical background and existing information for the item did not identify any association with a particular community or cultural group. This item does not meet the threshold for significance at a local or state level under this criterion.
Criterion E – Research Potential	The weatherboard cottage and associated structures are unlikely to provide information about the local area not available through other sources. This item does not meet the threshold for local or state significance under this criterion.
Criterion F – Rarity	The weatherboard cottage, and its associated structures is an example of c.1900s rural homestead which, although previously numerous in the area, that are becoming more uncommon through removal or decay. Although a complete survey of all c1900 structures in the area has not been undertaken, it is likely that this item would meet the threshold for local significance under this criterion.

Criterion	Application of Criteria
Criterion G – Representativeness	The weatherboard cottage and associated structures are a fair but modified example of a rural homestead constructed at the turn of the nineteenth century. However, as it has been subject to multiple additions and modifications it is unlikely to meet the threshold for local listing under this criterion.
Summary Statement of Significance	The weatherboard cottage (PHI1) is of historical and aesthetic significance at a local level. As a modified example of a c1900 rural homestead, it demonstrates the growth of agricultural pursuits in the area following the decline of the goldrush in Gulgong and the surrounding goldfields.

Table 5.2 Assessment of Heritage Significance – c1870's Hut (PHI 2)

Criterion	Application of Criteria
Criterion A – Historical Significance	The c.1870s hut (PHI 2) is of historical significance as evidence for the early settlement in the region. It is likely associated with the 1870s goldrush in the Gulgong/Tallawang region which overtook the pastoral land following the discovery of gold in the region.
Criterion B – Associative Significance	Review of historical background and available information has not identified any association with a person or group of persons of significance with this item. This item does not meet the threshold for significance at a state or local significance.
Criterion C – Aesthetic or Technical Significance	The hut is demonstrative of the modest vernacular buildings used for by early settlers and gold miners within the middle and late nineteenth century. Its simple form and lack of ornamentation demonstrate the simple and often temporary accommodations constructed by those working the land in rural NSW, particularly squatters and gold miners. The modifications of the hut, such as different phases of internal lining and replacement of external cladding indicate continued use and improvements which occurred as better or new material treatments became available. This item meets the threshold for significance at a local level under this criterion.
Criterion D – Social Significance	The review of historical background and existing information for the item did not identify any association with a particular community or cultural group. This item does not meet the threshold for significance at a local or state level under this criterion.
Criterion E – Research Potential	The 1870s hut may provide information regarding the types of available materials in the region as well as the construction techniques engaged by early settlers in the 1870. However this information can also be found in archival materials from the region. It is unlikely that this item meets the threshold for local significance under this criterion.
Criterion F – Rarity	The 1870s hut is an uncommon example of a modified 1870s vernacular building associated with the early settlement and goldrush in the region This item would likely meet the threshold for local significance under this criterion, however it is unknown how many similar examples remain within the local area.
Criterion G – Representativeness	The 1870s hut provides a good representation of an early vernacular building. Although the structure has been modified, this is representative changes in materials available in the early twentieth century within the region. This item meets the threshold for local significance under this criterion.
Summary Statement of Significance	The 1870s hut is of local significance for its historical, aesthetic values as well as its rarity and research potential. Its significance stems from its association with the early settlement of the area, particularly the goldrush in the 1870s. The structure is a good example of a vernacular building from the mid to late nineteenth century that although was likely a temporary structure, had been modified over its continued use. This type of structure is likely rare, or uncommon in the region, and provides a good representation of its type.



Legend

- Tallowang Solar Farm Project Area
- c. 1900 Cottage
- c. 1880 Hut

FIGURE 5.1

Identified Potential Heritage Item

5.3 Discussion of 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 (DUAP 1996:2).

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

5.3.1 Historical Archaeological Potential

Archaeological potential is defined as “the degree of physical evidence presents 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, 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 remain 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.

5.3.2 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 overview presented in **Section 3.0** demonstrates that the Project Area has likely been subject to a range of activities which would have resulted in a range of disturbances within the landscape. This includes:

- Activities associated with gold mining and kaolin extraction such as localised and large area removal of ground, spoil management, diversion of water courses and land clearing.
- Activities associated with agricultural use such as land clearing, leveling activities, construction of in-ground infrastructure such as septic tanks, water and electricity services, construction of dwellings and supporting structures.
- Construction of the rail line.
- Removal of redundant structures associated with the agricultural use of the Project Area and the former Puggoon Station building and platforms.

5.3.3 Archaeological Potential of the Project Area

As outlined in **Section 3.0**, the Project Area has remained largely undeveloped with the early land use patterns in the area historically recorded as ephemeral grazing on Crown Land or land grants until c1870. No historical records indicate that any dwellings or structures were constructed within the Project Area during this period. Use associated with this period is unlikely to have left physical evidence within the landscape which would have survived the later land disturbance during the Gold Rush and agricultural use. There is low to nil historical archaeological potential associated with land use prior to 1870.

The land use pattern of the Project Area changed to small claim gold mining for alluvial deposits from 1870, however there is limited information on the intensity of mining undertaken within the Project Area. Historical sources indicate that the wider Gulgong and Tallawang area were mostly subject to alluvial and small claim mining, utilising the gold bearing topsoil and creek beds, with some reef mining nearby (such as Barneys Reef). Historically this mining technology resulted in widespread modifications to the landscape, including gullies stripped of soil to bedrock, shallow shafts, mounds of non-gold bearing rock (mullock) and sandy or gravelly patches (tailings) where gold has been removed (Lawrence and Davies 2011). These are often accompanied by sluice systems or other channels to utilise water from surrounding natural creeks to wash the gold free from the topsoil (Lawrence and Davies 2011). There is potential for evidence of landscape modifications as result of gold mining to be present within the Project Area. These may have been removed or obscured due to subsequent agricultural practices, however.

There are no records of settlement associated with the Gold Rush within the Project Area. However archaeological study of goldfields elsewhere in Australia during this period has indicated that some subsistence miners established temporary accommodation within the vicinity of the goldfields, outside of the areas controlled by private mining companies. These accommodations were typically canvas tents which were modified with bark, fabric and tin sheets forming protection from the wind when occupancy was of a longer period. These shelters were often temporary means and when a claim was abandoned, any usable materials were carried off to the next claim or repurposed for other uses. In some instances, ad-hoc chimneys were constructed to the larger tent structures, to provide warmth and allow for cooking within.

These are recorded to have utilised rough sandstone or quartzite blocks (or other rock occurring in the area) held together with mud. Other records suggest chimneys were made of timber, corrugated iron or green bullock hides stretched around branches (Lawrence and Davies 2011). Little evidence would remain of organic materials such as branches and hides within the Project Area. Remains of stone chimneys would likely be limited to piles of worked blocks of stone where the binding mud had washed away.

If any unrecorded settlement of the area had occurred during the gold rush, the agricultural use of the Project Area would likely have removed most evidence of this during land clearing and use. There is low potential for the remnants of any chimney structures or hearths, however these are likely to have been reduced to rubble piles within the landscape or have been removed for reuse or to clear landscape for later use. The likelihood of encountering other unrecorded structural remains of any temporary residences / tents or associated occupational deposits is low to nil.

The former Puggoon Station was located immediately north of the Tallawang Solar Farm site, in the rail corridor in the vicinity of the proposed transmission line. The removal of structures associated within this station occurred sometime in the 1970s-1980s and it is unknown how this was undertaken. From aerial imagery of the area, it would appear that removal of all structures to ground level was completed. There is therefore low to moderate potential for historical archaeological remains associated with the 1910s platform and station building to remain below the existing ground level, such as the footings of former structures.

Overall, the Project Area has been assessed as having low potential to contain historical archaeological remains associated with early land use and gold mining in the area, with low to moderate potential for the remains of Puggoon Station.

6.0 Impact Assessment

This section assesses the likely impacts of the works included in the Project on the potential heritage items identified in **Section 5.2**, heritage items in vicinity of the Project Area and any assessed areas of historical archaeological identified in **Section 5.3.3**.

The impact assessment has been undertaken using the heritage impact gradings included in **Table 6.1**. The gradings have been developed in accordance with the Heritage NSW guidelines and the Burra Charter.

Table 6.1 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 Impact	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.
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.

6.1 Assessment of Heritage Impacts

6.1.1 Impacts to Heritage Items

6.1.1.1 Physical Impacts to Heritage Items

As identified in **Section 2.0**, there are no listed heritage items within the Project Area. However as identified in **Section 5.2**, there are two potential heritage items within the Project Area which were assessed as meeting the threshold for local heritage significance. This includes the c.1900 weatherboard cottage (PHI1) and the c.1870s hut (PHI2) both of which are significant for their historical and aesthetic significance as well as their representative value.

Both identified potential heritage items are located within the Tallawang Solar Farm site. In the case of PHI1, the weatherboard cottage is proposed to be retained. The layout for the Project (refer to **Figure 1.2**) includes an exclusion zone around this item with the solar panels and associated access tracks to be constructed approximately 40 m away from the dwelling and associated structures. The Project will not require the removal of or intervention with the cottage and would not have any adverse physical impacts on the item. Similarly, PHI2, the c.1870s hut is located outside the footprint of the proposed solar panels with an exclusion zone of approximately 20m away from the structure proposed within the layout for the Project. The Project would not result in any adverse physical impacts to the PHI2, the c.1870s hut.

There is the potential for construction activities requiring the use of construction equipment with high vibration ratings, such as a vibratory pile driver or a large hydraulic hammer, to result in vibration associated impacts to PHI1 and PHI2. Recommended safe working distances for vibration generating equipment from sensitive receivers (i.e., the receiver building or its occupants) as set out in Table 2 of the NSW Construction Noise and Vibration Guideline (CNVG) (RMS, 2016) would be met with the proposed exclusion zones around PHI1 and PHI2 outlined above. This would reduce the potential for vibration related impacts occurring to the identified potential heritage items.

With the implementation of management and mitigation measures presented in **Section 7.2**, it is anticipated that the construction activities would not result in impacts, including vibration-associated impacts, to PHI1 and PHI 2.

The nearest listed items, Gulgong Railway Bridge and 'The Lagoon' residential property, are located approximately 6.4km and 6.1 km respectively from the Project Area. The Project will not require any intervention or works within the curtilages of these heritage items. As such, the Project will have no physical impacts to the heritage items in the vicinity of the Project Area.

6.1.1.2 Visual Impacts to Heritage Items

The Project will introduce a range of new structures into the landscape which is currently dominated by fields, remnant vegetation, with few dwellings and ancillary structures. This will substantially alter the setting and the views across the Project Area as well as resulting in reduction in the inherent landscape characteristics of the wider landscape, through the introduction of extensive areas of linear patterning across open paddocks. This change will affect the setting of PHI1 c. 1900 weatherboard cottage and PHI2 c.1870 hut, both of which sit within a largely unchanged pastoral landscape, much like when it was constructed. This change in setting will have a minor adverse visual impact on the identified potential heritage items within the Project Area.

The listed heritage items in the vicinity of the Project Area are concentrated in or near Gulgong to the southeast of the Project Area, including the Gulgong HCA. The Project Area will be both physically and visually separated from these heritage items, with the proposed solar panels set back from the Castlereagh Highway (500 m) to minimise their visibility from the road and the wider landscape.

Although it is acknowledged that the Project will result in changes to the rural landscape of the Project Area, the visual impact assessment prepared as part of the EIS for the Project has identified that the changes would largely be to the *'immediate landscape character of the vicinity when viewed from the proximity of Puggoon Road'* (Envisage, March 2022). This is located some distance (>2km) from the listed heritage items. From more distant viewpoints, including from Gulgong HCA, the proposed infrastructure as part of the Project would *'appear as a dark colour over the slopes, located between existing stands of vegetation, and have little impact on the wider landscape character of the area'* (Envisage, March 2022). This is of importance to note for the heritage items in the vicinity, particularly the Gulgong HCA, which includes the vistas of rolling countryside as a component of its heritage significance (NSW SHI). Although the solar panel structures may be noticeable in some views from the heritage items, this would be at a great distance and set within the wider rural landscape. The Project will not result in the loss or substantial modification to these landscape views from the HCA, nor other listed heritage items within the area. The Project is unlikely to result in any adverse visual impacts on the listed heritage items in the vicinity of the Project Area.

6.1.1.3 Summary

Overall, the Project would have a minor adverse heritage impact. This is associated with the visual impacts to PHI1 and PHI2, which were identified as having heritage significance at a local level. No impacts would occur to any listed heritage items.

6.1.2 Impacts to Historical Archaeology

The construction of the Project would result in some ground disturbing works, such as leveling, installation of footings for new structures (including solar panels, onsite substation etc), underground cabling and formation of internal access tracks. These activities have the possibility to disturb or remove historical archaeological remains, should they be present.

Section 5.3.3 of this report identifies that the potential for the Project Area to contain historical archaeological remains is generally **low**, with **low to moderate potential** for remains of the former Puggoon railway station platform and building. Although there are ground disturbing works proposed across the Project Area, it is unlikely that the Project would impact on or remove any historical archaeological remains. Due to the land use history, any archaeological remains are likely to be fragmented or previously disturbed. This includes any evidence of goldmining and associated settlement. Truncated or fragmented remains are unlikely to provide new information about the history of the Project Area, except confirm that gold mining occurred as indicated by other documentary sources.

The area of low to moderate archaeological potential is limited to the rail corridor and is visible on history aerials on the area. It is located outside of the development footprint for the Tallawang Solar Farm site and adjacent to the transmission line proposed. It is unlikely that this area would be impacted by the proposed works for the Project.

Overall, the Project has little potential to impact on historical archaeological remains.

7.0 Conclusion and Recommendation

7.1 Conclusions

As assessed in **Section 6.0**, there are acknowledged changes to the landscape within the vicinity of the project, however the risk of visual or physical impacts to listed heritage items located in the vicinity of the Project has been assessed as negligible.

Two potential heritage items identified within the Project Area during the visual inspection were assessed as having heritage significance at a local level. The impacts to these heritage items, PHI1, a 1900s weatherboard cottage and PHI2, a c.1870s hut, would be moderate visual impacts as a result of the construction of the solar panels in its vicinity, altering the setting of both items. However, no physical impacts to these potential heritage items would occur during the construction and operation of the solar farm. With the implementation of the management measures outlined in **Table 7.1**, the impact to these items would be a minor adverse impact.

There is considered to be low potential for any archaeological remains to be located within the Project Area and associated construction footprint. The potential risk to any harm to any as yet unidentified archaeological resource is therefore assessed as low. Management and mitigation measures, outlined in **Section 7.2**, are proposed to manage impacts to PHI1 and PHI2 in the unlikely event that something is found.

7.2 Recommendations

Table 7.1 presents the heritage related management and mitigation measures proposed for the Project.

Table 7.1 Management and Mitigation Measures relating to Historical Heritage

No	Management and Mitigation measure	Timing
1	The visual impacts to PHI1 and PHI2 should be minimised through the retention of efficient set-back of the proposed solar panels from the items. The exclusion zones proposed currently should not be reduced. This includes the: <ul style="list-style-type: none"> 40 m set back from PHI1 on all sides. 20 m setback from PHI2 on all sides. 	Before Construction
2	Construction activities, including vehicle movement and site establishment, requiring equipment with high vibration ratings should not be used within the proposed exclusion zones for the identified potential heritage items (PHI1 and PHI2).	During construction.
3	An unexpected heritage finds protocol should be established and included in the environmental management policies for the project. All project team members and construction contractors should undertake a heritage-specific induction to support the use of this protocol.	During construction
4	In the unlikely event that unexpected historical archaeological material is discovered, all work in the area should cease and suitably qualified archaeologist should be consulted to determine an appropriate course of action. Depending on the extent and significance of the archaeological remains encountered, Heritage NSW may require consultation prior to the commencement of works.	During construction

