Scoping Report

Mates Gully Solar Farm

May 2022

Project Number: 21-858

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Acronyms and Abbreviations

ABS	Australian Bureau of Statistics
ACHA	Aboriginal Cultural Heritage Assessment
AHIMS	Aboriginal Heritage Information Management System
AHIP	Aboriginal Heritage Impact Permit
BAM	Biodiversity Assessment Method
BC Act	*Biodiversity Conservation Act 2016* (NSW)
BCS	Biodiversity and Conservation Services, Directorate of DPE
BDAR	Biodiversity Development Assessment Report
BESS	Battery Energy Storage System
Biosecurity Act	*Biosecurity Act 2015* (NSW)
BOM	Australian Bureau of Meteorology
BOS	Biodiversity Offsets Scheme
BSAL	Biophysical Strategic Agricultural Land
CEEC	Critically Endangered Ecological Community
CEMP	Construction environmental management plan
CIV	Capital Investment Value
Cwth	Commonwealth
DC-coupled	Direct Current - coupled
DoEE	(Former) Department of the Environment and Energy (Cwth) (now DAWE)
DPE	Department of Planning and Environment (NSW)
EEC	Endangered ecological community – as defined under relevant law applying to the proposal
EIS	Environmental impact statement
EES	Environment, Energy and Science, department of DPE
EMF	Electric and magnetic fields
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Cwth)
EP&A Act	*Environmental Planning and Assessment Act 1979* (NSW)
ESD	Ecologically Sustainable Development
FM Act	*Fisheries Management Act 1994* (NSW)
GDE	Groundwater dependent ecosystem
ha	hectares
Heritage Act	*Heritage Act 1977* (NSW)
GHG	Greenhouse gas

ISEPP	State Environmental Planning Policy (Infrastructure) 2007 (NSW)
KFH	Key Fish Habitat
km	kilometres
kV	Kilovolt
LALC	Local Aboriginal Land Council
LCA	Land Category Assessment
LEP	Local Environment Plan
LGA	Local Government Area
LUCRA	Land Use Conflict Risk Assessment
m	metres
MNES	Matters of National Environmental Significance under the EPBC Act (*c.f.*)
MW	Megawatt
$MW_{(AC)}$	Megawatt alternating current
MW HR	Megawatt hours
NPW Act	*National Parks and Wildlife Act 1974* (NSW)
NV Act	*Native Vegetation Act 2003* (NSW)
OEH	(Former) Office of Environment and Heritage (NSW) (now EES)
PCT	Plant Community Type
PMST	Protected Matters Search Tool
PV	Photovoltaic
RET	Renewable Energy Target
RFS	Rural Fire Service
SEARs	Secretary's Environmental Assessment Requirements
SEPP	State Environmental Planning Policy
SoHI	Statement of Heritage Impact
SSD	State Significant Development
SR	Scoping Report
TEC	Threatened Ecological Community
TfNSW	Transport for NSW

Table of definitions for the Scoping Report

Mates Gully Solar Farm (MGSF)	The construction, operation and decommissioning of a 160 MW(AC) solar farm generally comprising a solar array, access roads, underground and above ground cables, on-site substation and associated operational facilities including the construction of a Lithium-Ion Battery Energy Storage System (BESS) configured as either a DC-coupled distributed BESS or AC coupled BESS located near the substation.
Project	Mates Gully Solar Farm
Applicant	Spark Renewables Pty Ltd (Spark Renewables)
Project Site	The area of land that is being investigated for siting of the Project. This land would include all lots and the railway line affected by the Project.
Development footprint **(Indicative only)**	The Development footprint for the Project would be established within the Project Site subject to consideration of constraints and infrastructure siting throughout design. The Development footprint is the area of land that would be directly impacted by the Project (construction and operation, including all temporary and permanent impacts). Build area is used interchangeably with the maximum potential development footprint to reflect the area available, outside of key constraints, for consideration during further detailed design.
Locality	Area within 10km of the Project Site.

1. Introduction

1.1. Purpose of this document

Spark Renewables Pty Limited ("Spark Renewables" or "the Proponent") is proposing to develop Mates Gully Solar Farm, a 160 megawatt alternating current ($MW_{(ac)}$) capacity solar farm and 100MW capacity (up to 4 hours storage) Battery Energy Storage System (BESS) AC or DC coupled at Mates Gully, NSW ("the Project" or "MGSF"). The Project would be located approximately 30 kilometres (km) east of Wagga Wagga and falls within the City of Wagga Wagga Local Government Area (LGA).

This Scoping Report (SR) supports a request to the NSW Department of Planning and Environment (DPE) for the Secretary's Environmental Assessment Requirements (SEARs) in relation to the Project. The SEARs would guide the preparation of an Environmental Impact Statement (EIS) for the Project, pursuant to Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

This report has been prepared by NGH Pty Ltd (NGH) on behalf of Spark Renewables in accordance with the State significant development guidelines - preparing a scoping report: Appendix A to the state significant development guidelines (DPIE, 2021) (Scoping Report Guidelines). Ancillary NSW Government SSD technical guidelines have been considered where applicable as well as the current Large-scale Solar Energy Guideline for State Significant Development (NSW Department of Planning and Environment 2018) and the currently exhibited Draft Large-scale Solar Energy Guidelines for State Significant Development (NSW Government, 2021).

This Scoping Report provides a high-level description of the Project, including the site and its surroundings, the environmental planning pathway for approval and the identification of key potential environmental issues that may be associated with the Project.

The Project description would be refined in response to further detailed environmental investigation and consultation with stakeholders.

1.2. The applicant

Spark Renewables is a wholly owned business within the Spark Infrastructure Group ("Spark Infrastructure"). Spark Infrastructure was founded in 2005, while their renewables division was founded in 2013. Spark Infrastructure is an owner of critical energy infrastructure, including generation, transmission and distribution infrastructure across Australia. The objective of Spark Infrastructure is to provide energy system stability, reliability, minimise electricity costs to customers.

The holding company of Spark Renewables, Spark Infrastructure, was acquired in 2021 by a consortium of global infrastructure investors including KKR and two Canadian pension funds, Ontario Teachers Pension Plan and the Public Sector Plan. Between them they manage nearly one trillion dollars of investment funds. Spark Infrastructure owns interests in $18 billion of electricity network and generation assets across Australia.

Spark Infrastructure's investment portfolio comprises regulated electricity transmission and distribution assets in New South Wales (Transgrid, 15.01%), Victoria (CitiPower and Powercor, together known as Victoria Power Networks, 49%) and South Australia (SA Power Networks, 49%). These core assets comprise 85% of their investment portfolio. These assets deliver energy to more than 5 million customers in Victoria, South Australia, New South Wales and the Australian Capital Territory and transport energy across the National Electricity Market (NEM).

Spark Renewables is a leading developer, long-term owner, and operator of renewable energy projects. The company's portfolio comprises the Bomen Solar Farm, operational since 2020, and Spark Renewables is currently developing in excess of 3GW of solar, wind, and renewable storage projects across the National Electricity Market, including the Dinawan Energy Hub and Bomen Renewable Energy Hub, within NSW.

Current and proposed renewable infrastructure developments for Spark Renewables are presented in Figure 1-1.

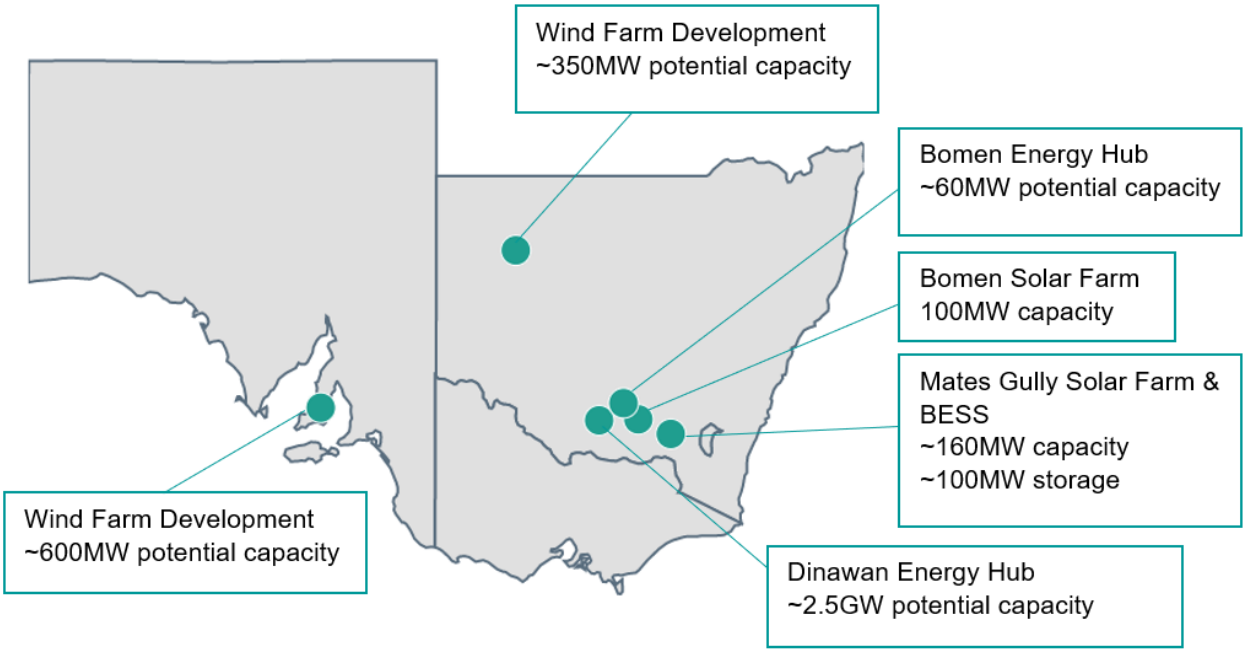

Figure 1-1 Spark Renewable Development Portfolio (Spark, 2022)

Spark Renewables, a member of the Clean Energy Council, is committed to energy system stability, reliability and minimising costs to customers as well as contributing to long-term sustainability and adding value to communities by investing in renewable energy infrastructure. Spark Renewables is focussed on providing local employment opportunities and giving back to the local community by establishing community funds to provide long-term, distributed benefits equitably across the community.

In addition to the above, Spark Renewables is committed to supporting shared land use opportunities by establishing co-beneficial solar and sheep grazing, to maximise productivity of the land and retain its agricultural use. The MGSF intends to incorporate improved grazing wherever possible during operations, and as such, consideration will be given in the design for panel spacing and height, along with additional fencing (cell grazing) and water infrastructure.

Table 1-1 Summary of Applicant details

Company name	Spark Renewables Pty Limited (“Spark Renewables” or “the Proponent”)
ACN	632 860 023
Address	19-21 South Steyne Road, Manly NSW 2095, Australia

1.1. Project summary

A summary of the Project is provided in Table 1-2 below and an indicative site configuration is shown in Figure 1-3. A detailed project description is provided in Section 3.

Table 1-2 Summary of Mates Gully Solar Farm Project

Project Name	Mates Gully Solar Farm ("MGSF" or "the Project")
Location	The Project would be located adjacent to Mates Gully Road and the Sturt Highway at Mates Gully, NSW, approximately 30 kilometres (km) east of Wagga Wagga and falling within the Wagga LGA. The regional setting of the Project site is provided in Figure 1-2
Address/Lots	1377 Mates Gully Road, Borambola 2650 1069 Mates Gully Road, Tarcutta 2652 Lot 2 DP169567, Lot 2 DP1088773, Lot 3 DP1143645, Lot 2937 DP 1182487, Lot 2936 DP1182464, Lot 1 DP960820, Lot 1 DP440654, Lot A DP442593 & Lot 1 DP178044.
Objectives	To generate and supply reliable and secure renewable energy to the national electricity grid to support state and federal renewable energy targets and commitments whilst diversifying regional economies, providing additional income streams to associated landholders, and creating local employment and economic stimulus in the local and regional area.
Key features	Construction, operation and decommissioning of a photovoltaic (PV) solar facility with a capacity of up to 160 $MW_{(ac)}$, with a BESS (AC or DC coupled) with indicative capacity of 100MW (4 hours storage). The Project Site covers approximately 460 hectares (ha), with the area of solar arrays, BESS (AC or DC-coupled) and associated infrastructure anticipated to occupy approximately 300ha. This would include an onsite substation. Figure 1-3 shows the BESS in AC configuration, near the substation. In DC configuration the BESS would be distributed across the Project site with smaller units located adjacent to the PCUs.
Land Use Compatibility	The site, adjacent properties and locality are currently used for agriculture. Agricultural land use will continue during operation, with grazing capability integrated in the solar array footprint and agricultural rehabilitation following decommissioning. The Project will not impact the ability of neighbours to undertake agricultural activities. Two existing 132kV Transgrid transmission lines are located within the Project Site providing for ready connection.
Related development and approvals	There are no ancillary developments associated with the Project that will require separate approvals. Connections to the grid will be via transmission lines onsite and covered by the SSD consent.

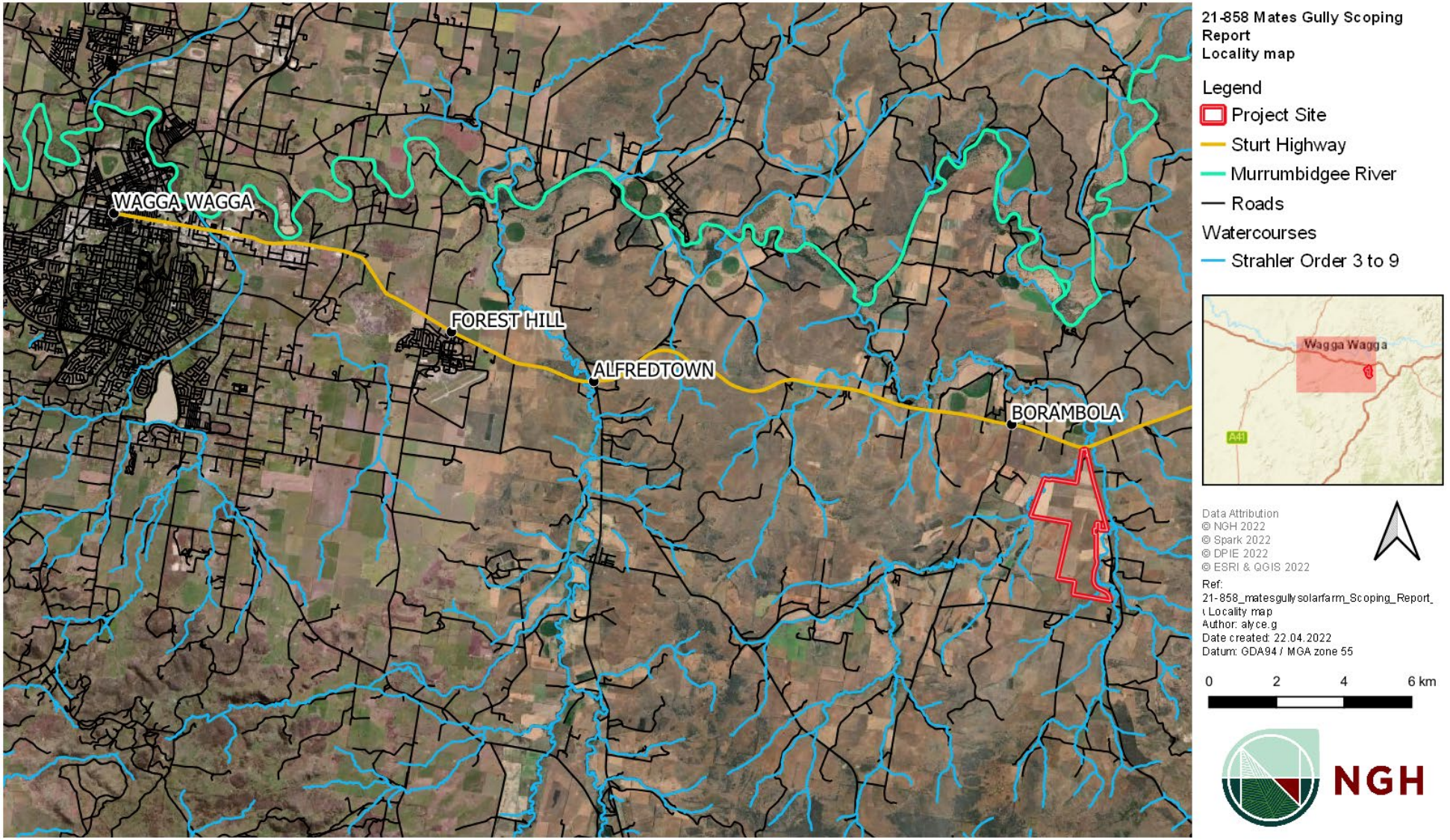

Figure 1-2 Location of Project Site and proximity to closest towns

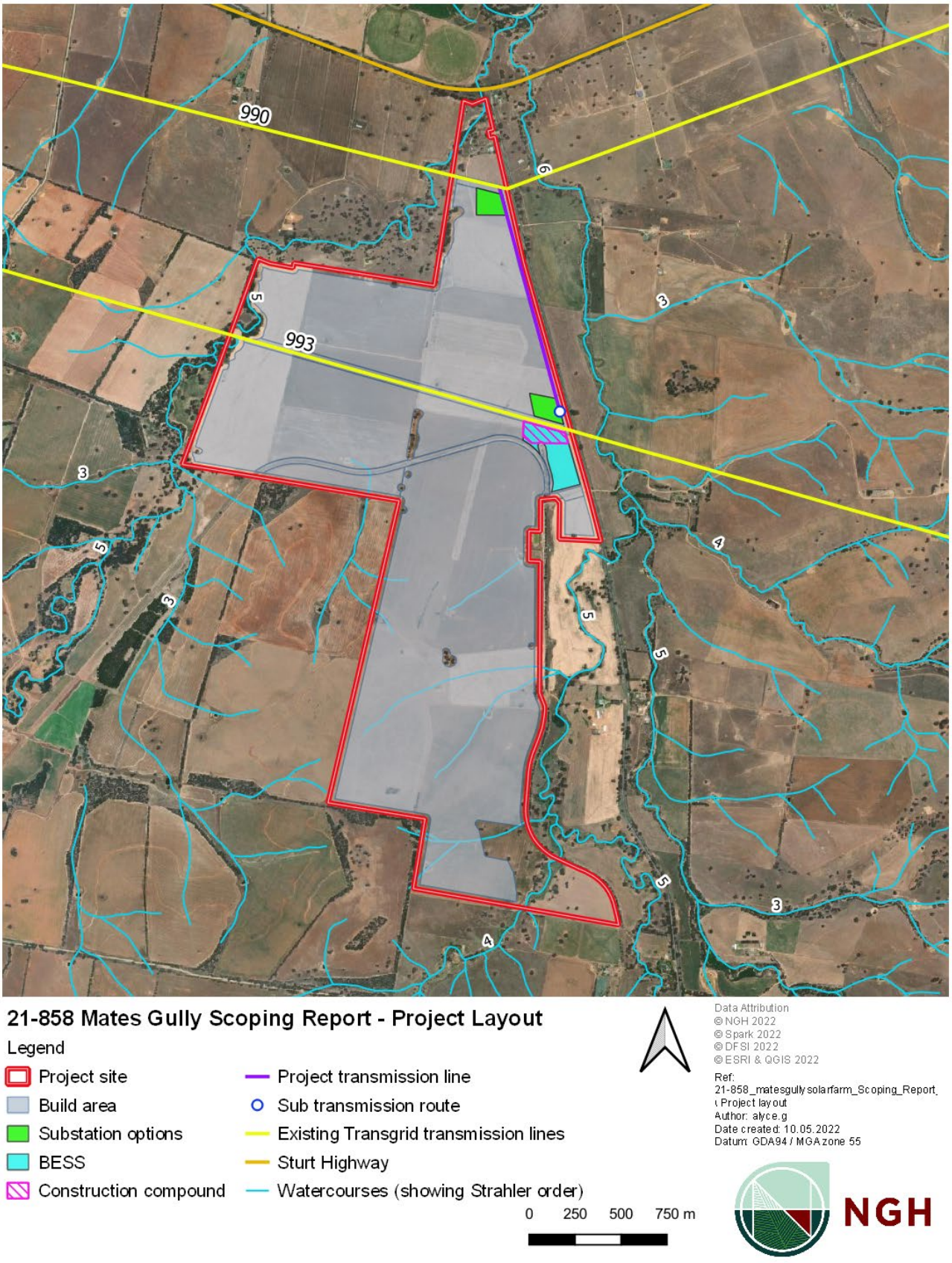

Figure 1-3 Project concept design (showing BESS as AC coupled configuration)

2. Strategic context

2.1. Site context

2.1.1. Regional

The Project sits within the Wagga Wagga LGA and is situated in the Riverina Region of NSW. The Wagga Wagga LGA covers 4,826km^2, with an estimated population of 65,770 (.idcommunity, 2022) and a population density of 13.63 persons per km^2. The site sits within the Wagga Wagga Local Aboriginal Land Council (LALC) area, and the traditional owners of the land are the Wiradjuri people.

Borambola, located approximately 4.9km west of the Project Site, is the closest town with a population of 355 (ABS, 2016). Borambola is known for its community and recreation centre, which provides recreational amenities for visitors to the area. Wagga Wagga is the closest major regional centre, located approximately 30km west of the Project Site. Wagga Wagga has a number of facilities including a public and private hospitals, banks, retail outlets, grocery stores, public and private schools, a police station, a fire department and accommodation facilities including hotels, motels, caravan parks and short-term rentals. The Project's locality is shown in Figure 1-2.

2.1.2. Project site

The Project Site is approximately 465 ha. The Lot and DPs are presented in Table 2-1 and Figure 2-1.

Table 2-1 Lot/DP list of Project Site

Lot / DP	Area included in Project Site (ha)
Lot 1 DP960820 (Freehold)	1.01
Lot 2 DP169567 (Freehold)	238.13
Lot 2 DP1088773 (Freehold)	208.46
Lot 3 DP1143645 (Freehold)	9.92
Lot 2936 DP1143645 (Freehold)	2.79
Lot 2937 DP1182487 (Freehold)	0.08
Lot A DP442593	3.22
Lot 1 DP440654	1.64
Lot 1 DP178044	0.11
Total	**465.36**

There is one existing residence within the Project Site, owned by the project landholder. There are multiple access points to the wider property off Mates Gully Road. Access to the Project Site will be off Mates Gully Road into Lot 2 DP1088773 approximately 1.8km south of the Sturt Highway intersection with Mates Gully Road. The Sturt Highway provides an important connection between Wagga Wagga and the east coast of NSW.

The land is zoned RU1 (Primary Production) under the Wagga Wagga Local Environmental Plan (LEP) 2010 (Figure 2-2). The Project Site has been highly modified by past disturbances associated with:

- Land clearing
- Cropping
- Livestock grazing
- Weed invasion
- Residential and farm infrastructure
- Rail transport

The Project Site is currently used for grazing and cropping involving Canola and cereal crops. Sheep grazing is typically undertaken in late spring and grazed till July / August.

The Land Category Assessment (LCA) undertaken for the Project Site (Appendix B) suggests that large areas of the Project Site have been heavily modified from agricultural use that was in place in 1990 and remained in place in the same areas between 1990 and 2011. These agricultural practices (predominantly cropping) are still in use today. The Project Site is situated within a valley, with undulating hills occurring east, south and west of the development. The lowest elevation is approximately 200m in the north-west portion of the site, rising steadily over approximately 2.3km to an elevation of 270m in the south-west portion of the site.

Ephemeral watercourses occurring within the western and south eastern portions of the Project Site are mapped as Key Fish Habitat (KFH) under the NSW *Fisheries Management Act 1991* (FM Act) and include Mates Creek, a 4th Strahler Order Stream and tributary of Coreinbob Creek, a 5th Strahler Order Stream (refer to Figure 2-1). A number of ephemeral, unnamed, 1st and 2nd Order Streams also intersect the Project Site. Farm dams occur occasionally throughout the Project Site.

There are no National Parks or State Forests within 10km of the Project Site. The nearest National Park is Livingstone National Park (31km southwest), and the nearest State Forest is Murraguldrie State Forest (28km south).

Two 132kV overhead transmission lines (lines 990 & 993) pass through the Project Site. The Project proposes to connect into both or one of lines 990 & 993 as shown on Figure 3-1.

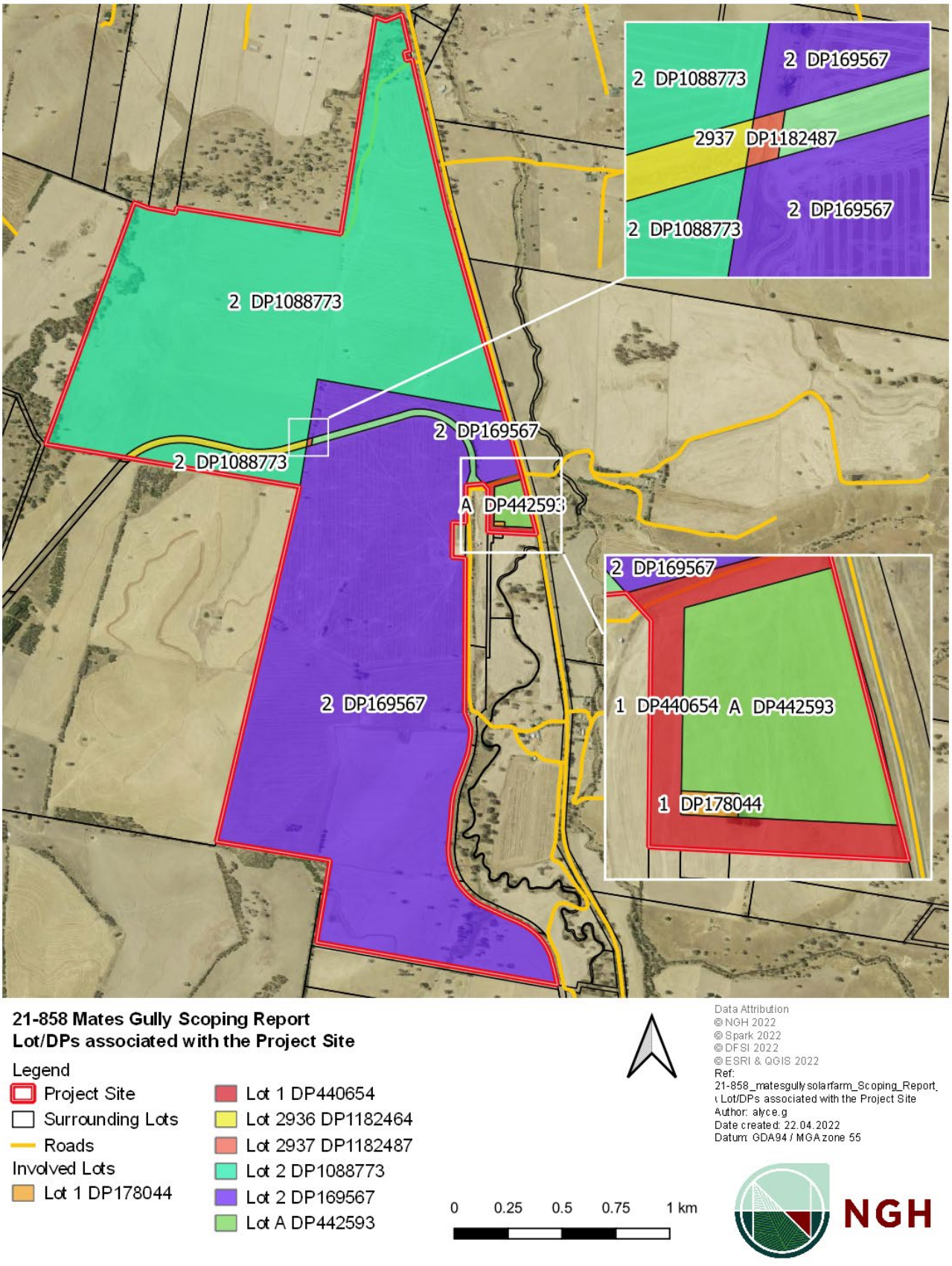

Figure 2-1 Lot and DPs associated with the Project Site

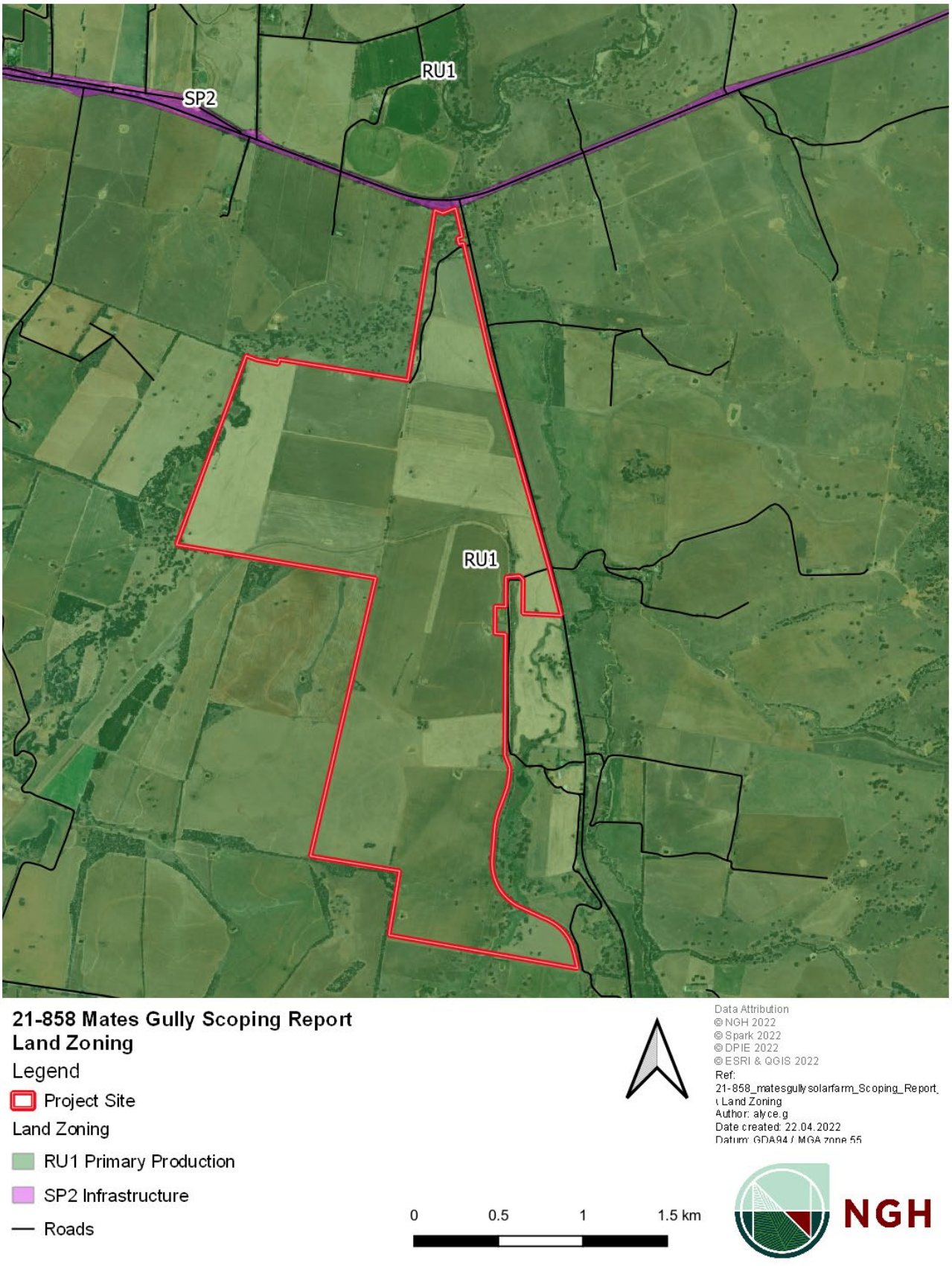

Figure 2-2 Land zoning of Project Site and surrounding areas

2.2. Strategic need

Increasing levels of renewable energy are required to support NSW's clean energy transition. Over the next decade, solar farms will be essential generators in replacing NSW's coal-fired power stations which are being decommissioned at an increasingly early rate. The Australian Energy Market Operator (AEMO) has forecast that four of the five coal-fired power stations in NSW are expected to retire by 2035 (AEMO, 2020). This is equivalent to 9000MW of generation capacity or approximately 75% of electricity supply in NSW. The Australian Energy Market Operator's draft Integrated System Plan 2022 (AEMO, 2021) has forecast coal generation to retire nearly 3 times faster than previously anticipated, with more than half of the remaining capacity expected, 14 GW of NSW's supply, to retire by 2030 in the "most likely" *Step Change* future generation scenario. The scheduled retirement of Liddell in 2022-2023, and expedited closure of Eraring in 2025 as recently announced, means the NSW electricity market has an immediate need for new renewable generation to bridge this gap.

2.2.1. Alignment with strategic planning frameworks

International context

In December 2015, Australia, among another 194 countries, agreed on the United Nations Paris Agreement on climate change. The following are key objectives of the agreement:

- a goal to limit the increase in global temperatures to well below 2 degrees and pursue efforts to limit the rise to 1.5 degrees
- a commitment to achieve net-zero emissions, globally, by the second half of the century
- differentiated expectations for developed nations, including Australia, that they will reduce their emissions sooner than developing nations.

As a signatory to the agreement, the Australian Government has committed to reduce greenhouse gas emissions by 26-28 percent on 2005 levels by 2030.

Electricity generation is one of the largest individual contributors of greenhouse gas emissions in Australia, representing 33.4 per cent of emissions in the year up to September 2020 (DoISER, 2020).

The development of renewable energy projects is considered to be one of the most effective ways to meet the nation's international commitments to reduce greenhouse gas emissions and the Project would contribute to Australia's effort to meet the Paris Agreement.

National context

Australia' Long Term Emissions Reduction Plan

The Australian Government released Australia's Long-term Emissions Reduction Plan (ALERP) in October 2021. The ALERP sets out how Australia will achieve net zero emissions by 2050.

Central to the ALERP is a continuation of Australia's path towards low emissions electricity. Renewables are projected by the ALERP to provide over half of Australia's total electricity generation by 2030, with an increased renewables share of electricity generation forming the foundation for a near zero emissions grid by 2050.

The Project will support the provision of renewable, low emissions, electricity.

Renewable Energy Target

The Renewable Energy Target (RET) is an Australian Government scheme designed to reduce emissions of greenhouse gases in the electricity sector and encourage the additional generation of electricity from sustainable and renewable sources. The Clean Energy Regulator (CER) administers the both the small and large-scale RET schemes. The Large-scale RET scheme incentivises investment in renewable energy power

stations such as wind and solar farms. The Large-scale RET of 33,000 gigawatt hours of additional renewable electricity generation was met at the end of January 2021 (Clean Energy Regulator 2021). Whilst the annual target will remain at 33,000 gigawatt hours until the scheme ends in 2030, the CER Regulator expects large-scale renewable generation could reach up to 40,000 gigawatt hours in 2021.

The Project would support long term and stable energy policies such as the Renewable Energy Target (RET). Additionally, large-scale solar farm projects such as this provide an alternative power generation source resulting in the potential to benefit the Australian community by reducing average household electricity bills and power disruptions.

Specific to Australia's commitments, the Project would provide the following benefits:

- Reduced greenhouse gas (GHG) emissions, contributing to meeting our international climate commitments
- Aid the transition towards cleaner electricity generation
- Direct contribution to help in meeting the RET.

Integrated System Plan 2020

The Integrated Systems Plan 2020 (AEMO, 2020) prepared by the Australia Energy Market Operator is an "actionable roadmap for eastern Australia's power system to optimise consumer benefits through a transition period of great complexity and uncertainty." A Draft 2022 Integrated System Plan (ISP) was published on 10 December 2021 (AEMO, 2021).

Renewable Energy Zones (REZ) are identified in the ISP 2020 as areas where "clusters of large-scale renewable energy can be developed to promote economies of scale in high quality areas and capture geographical and technological diversity in renewable resources" (AEMO, 2020).

The Project would not be located within a REZ, as identified in the ISP. The NSW Government notes in the Draft Large-Scale Solar Energy Guidelines for State Significant Development (NSW Government, 2021) that a large portion of existing solar development is currently located outside REZs (approximately 70%) and continued development outside of the REZs will be required to support a transition to renewable energy.

NSW context

Electricity policy

The NSW Government's Renewable Energy Action Plan (REAP) was introduced to guide NSW's renewable energy development and to support the former national target of 20% renewable energy by 2020 (NSW Government, 2022).

This is supported by the NSW Climate Change Policy Framework (NSW DPIE, 2021), which aims to maximise the economic, social and environmental wellbeing of NSW in the context of a changing climate and current and emerging international and national policy settings and actions to address climate change, and which adopts aspirational long-term objectives and outlines demonstrable actions in line with the Paris Agreement (2015), to achieve net-zero emissions by 2050 and to make NSW more resilient to a changing climate. In particular, the Framework underscores the role of the 'advanced energy' and creating change through the implementation of innovative and renewable technologies.

The Project is consistent with the objectives of the NSW *Electricity Infrastructure Investment Act 2020*, to transform the electricity system into one that is clean and reliable. The Electricity Infrastructure Roadmap, enabled by this Act, coordinates and encourages investment into transmission, generation, storage and firming infrastructure. The Project will directly contribute to the ambitions of this Act.

The Project is also consistent with the NSW Electricity Infrastructure Roadmap (NSW Government, 2021) (the Roadmap), which states:

> *NSW is at a crossroads. As our existing power sources come to the end of their lives and global markets seek cleaner, cheaper and more reliable energy sources, we have a once in a generation opportunity to redefine the State as a modern, global energy superpower.*

Together, the NSW *Electricity Infrastructure Investment Act 2020* and the Roadmap intend to:

- attract up to $32 billion in private investment for regional energy infrastructure by 2030
- support 6300 construction jobs and 2800 ongoing jobs, mostly in regional NSW
- save around $130 a year on the average NSW household electricity bill
- help reduce NSW electricity emissions by 90 million tonnes by 2030.

With an anticipated capital cost of approximately $300 million, and the potential to create up to 200 full time equivalent (FTE) jobs during construction, and up to 5 FTE jobs during operation, the Project would contribute to realising these aspirations.

Climate change policy

The NSW Climate Change Policy Framework was introduced in 2016, with an aspirational long-term objective of achieving net zero emissions by 2050. The NSW Renewable Energy Action Plan was also introduced in 2016, and the Project is consistent with the three goals of the plan which are:

1. Attract renewable energy investment and projects
2. Build community support for renewable energy
3. Attract and grow expertise in renewable energy.

In March 2020, the NSW State Government also introduced the Net Zero Plan Stage 1: 2020-2030, and this was updated in September 2021. The updated plan sets an interim target of reducing emissions by 50% by 2030 (when compared to 2005 levels).

The Project would generate around 420 gigawatt hours per year, saving approximately 327,000 tonnes of carbon dioxide per year when compared to typical fossil fuel electricity generation in Australia, and contribute to the achievement of this target.

The Project is also consistent with the current goals and targets for renewable energy generation in NSW. These include:

- Contributing to growing the economy, creating jobs and reducing emission over the next decade in line with the Governments Net Zero Plan Stage 1: 2020 - 2030 grow the economy, create jobs and reduce emissions between 2020 – 2030
- Goal 22 of the NSW 2021: A plan to Make NSW Number One (Department of Premier and Cabinet, 2011):
    - Contribute to the national renewable energy target [i.e. 20% renewable energy supply] by promoting energy security through a more diverse energy mix, reducing coal dependence, increasing energy efficiency and moving to lower emission energy sources.
- Contributing to achieving the NSW target of zero net emissions by 2050
- Consistent with to the NSW Electricity Strategy (NSW Government, 2019), that outlines the NSW Governments plan for reliable, affordable and sustainable electricity.

2.2.2. Regional and local context

Wagga Wagga Local Strategic Planning Statement

The *Wagga Wagga Local Strategic Planning Statement – Wagga Wagga 2040* sets the long-term strategic framework for planning and development in the City of Wagga Wagga local government area over 20-years from 2020. It addresses issues of strategic significance to the Council, guiding development or introduction of new planning policies, strategies or actions related to land use and development.

Wagga Wagga 2040 acknowledges that the NSW Government has identified renewable energy and tourism as two industries with specific potential in or around Wagga Wagga. Wagga Wagga 2040 commits to the City of Wagga Wagga supporting development in these areas, as well as the city's traditional industrial base.

Further to this *Growing Economy Action ECON 8* provides for more diverse industries, including renewable energy, whilst *Environmental Action ENV 11* provides support for the implementation of NSW Net Zero 2050.

The Project is consistent with Wagga Wagga 2040 and helps the City of Wagga Wagga achieve strategic goals and actions.

Existing projects and commitments

Spark Renewables' Bomen Solar Farm located north of Wagga Wagga in New South Wales commenced commercial operations in July 2020. It comprises approximately 310,000 bi-facial solar panels and produces enough clean solar energy to power 36,000 homes per year. Building on the success of Bomen Solar Farm, Spark Renewables is building a pipeline of development projects including the 2.5GW Dinawan Energy Hub.

Spark Infrastructure is a long-term investor in essential energy infrastructure, with the overarching purpose of building a sustainable energy future and commitment to the transition of Australia's electricity market to low carbon energy sources.

2.3. Project justification

2.3.1. Project benefits

In addition to supporting Australia and NSW efforts to mitigate the effect of climate change, MGSF would produce significant and diverse benefits in four major areas:

- Farming
- Economic
- Community (social)
- Environment.

Farming: suitability with 'solar grazing'

Co-location of solar farms and agricultural production has taken off in Australia in the form of 'solar-grazing', which is now the predominant form of solar farming land co-use in Australia.

The Clean Energy Council (CEC) has published a guide to the farming community on the compatibility of solar farms with agricultural production in Australia (Australian Guide to Agrisolar for Large-scale Solar: For proponents and farmers, CEC, March 2021). Where sheep production and solar farm is co-located in the same paddock; there can be a range of benefits including:

- Sheep production and solar farm can be co-located in the same paddock
- Helping to keep pastures at manageable levels, reducing fire risk
- Pastures within solar arrays are known to produce as much feed across the year as in open paddocks
- Shading from panels can help protect pasture growth during periods of heat and drought, by reducing over-evaporation.

Spark Renewables has engaged a local agricultural advisor to assist with engagement with the farming community and agricultural design aspects for MGSF. In conjunction with consultation with farming landholders, Spark Renewables would implement lessons learnt from solar grazing at the Bomen Solar Farm and other solar farms in Australia to ensure solar-grazing is safely and efficiently managed with optimal pasture mix, shading, fencing for cell grazing and lanes, and suitable water points.

Socio-economic

Regional Australia leads the world in agricultural and resource productivity, and solar is another valuable resource and a way of diversifying regional economies. In addition to providing an additional income stream to associated landholders, the Project is expected to create approximately 200 jobs during construction and up to-5 jobs during operation.

The Project would create local employment and economic stimulus in Borambola and surrounding areas including Alfredtown, Forest Hill, Wagga Wagga and Tarcutta. These areas would provide accommodation, food, fuel and trade equipment and services, mostly during the construction phase.

During operation the Project would provide an ongoing drought proof income stream for host landowners, with flow on benefits for the local economy. Spark Renewables is committed to working with and hiring local companies wherever possible during construction and throughout the project lifetime.

Spark Renewables has a particular focus on engaging Aboriginal people and businesses to support the construction and operation of the Project and intends to set targets to measure its performance against this commitment. Spark Renewables is aligned with a 20% long-term goal.

Spark Renewables is committed to promoting responsible sourcing and upholding high ethical standards in all aspects of its working practices.

The Australian Energy Market Commissions (AEMC) analysis indicates that renewable energy sources are likely to put downward pressure on the wholesale electricity prices, which has the potential to reduce electricity bills for households and businesses across NSW. Other ongoing economic benefits to the community include monitoring and inspections, maintenance, repair and upgrade of infrastructure, much of which is likely to be provided by the local labour force.

Community

Spark Renewables is consulting with the local community to seek proposals for community benefit sharing programs. Long-term, distributed benefits for hosting the MGSF would be offered to the community in accordance with the level of impact on residents, such as:

- Community fund to be spent within the community
- Electricity benefit scheme which entails discounted electricity
- Neighbour and Landowner agreements (e.g., Lease and Option deed signed with Landowners).

Other examples could include:

- Promoting tourism into Wagga Wagga the area by sponsoring an electric vehicle charging station to offer free charging power
- Providing free electricity to not-for profit organisations that use a lot of power in the daytime (peak solar)
- Supporting local “green” initiatives
- Supporting education and training programs.

Importantly, Spark Renewables is consulting openly with the community members, local groups and Wiradjuri knowledge holders to determine the scope of benefit-sharing options and discuss how they might operate most efficiently and meaningfully in the local context. Spark Renewables is proud of what it has achieved at the Bomen Solar Farm in sponsoring initiatives that invest in youth, health and protecting the environment. Examples of early sponsorship programs at the Bomen Solar Farm include:

- Partnership with Mount Austin High School (Wagga Wagga): $500,000 in support of ‘Transition Program’ and the ‘Girls @ the Centre’ program

- A funding agreement with Wagga Wagga City Council: $350,000 to promote biodiversity and revegetation in the local area
- Eunony Valley: $100,000 for the community-led planting program
- Support for the Eunony Bushfire Brigade: $50,000
- Solar support for Abbeyfield Kooringal: $10,000.

Environmental benefits

The Project will have the ability to produce around 430 gigawatt-hours (GW HR) of renewable energy per year, which will:

- Offset over 300,000 tonnes of CO_2 equivalent emissions per year
- Power ~90,000 typical NSW homes per year.

While there are materials used in the maintenance of the equipment just like with any other generator plant, electricity generation from solar energy uses very little water.

2.3.2. Site suitability

The Draft Large-Scale Solar Energy Guidelines for State Significant Development (NSW Government, 2021) notes the importance of demonstrating the suitability of the selected solar farm location and outlines key constraints that should be identified and considered. This process allows the opportunity to avoid or minimise negative impacts at the outset. Design and assessment of the Project can then be undertaken with a focus on mitigating and managing unavoidable impacts.

Table 2-2 provides a summary of the site selection criteria considered in identifying the site, with further detail provided in Section 3.2.

Table 2-3 outlines the suitability of the site for the Project, with further detail and assessment of key matters for ongoing assessment and design considerations provided in Section 6.

Table 2-2 Site selection criteria – site characteristics

Preferable site criteria	Applicability to the Project
Optimal solar resources	The Tarcutta weather station (072042) located approximately 15.2km from the Project Site, shows good solar irradiance of 17.4 MJ m^{-2} on an annual basis between 1990 and 2022 (BOM, 2022). To further support the location of the site, the solar resource map of Global Horizontal Irradiation (Solargis, 2021) estimates a long-term (since 1990) equivalent photovoltaic power potential of around 1750 kWh per annum from a levelised 1kW-peak grid connected solar PV plant.
Suitable land	Land is of low constraints and has an extensive history of existing cultivation.
Local impacts minimised	Early community engagement is currently underway to enable the Project to reflect community issues. Face to face engagement was undertaken in late 2021 with online community sessions on the 22 of February 2022. Early consultation during November 2021 identified neighbour and landholder concerns regarding visual impacts and loss of agricultural production. Community views on loss of agricultural land will be addressed in the EIS based on a commitment to ongoing solar grazing activities, decommissioning and rehabilitation at the end of operation and recent studies on the impact of solar farms on agricultural production in localities and regions.

Preferable site criteria	Applicability to the Project
	The Project location selection and design has given consideration to minimising visual impacts and will continue detailed assessments to minimise and mitigate impacts. There are a small number of immediate neighbours up to 1km from the Project who may be impacted visually, however due to the topography of the site, there is potential for residences further abroad, up to 3.25km to be impacted. This would be explored further and clarified through a specialist visual impact assessment.
Capacity to rehabilitate	Pile driven array mounts are proposed resulting in minimal ground disturbance. The site will be designed with suitable panel height and row spacing to allow for continued grazing during operation, to co-beneficially protect the groundcover and continue agricultural production onsite.
Proximity to electrical network	Existing transmission line connection options within the Project Site: • Transgrid overhead transmission line 990: 132 kV, Wagga – Yass • Transgrid overhead transmission line 993: 132 kV, Wagga – Gadara The Project would utilise either or both of these lines.
Connection capacity	Substation and connection point will be located within the development footprint. Transgrid has currently advised of a grid capacity of 132 kW at the connection point.

Table 2-3 Site selection criteria - constraints

Areas of constraint	Applicability to the Project
Native vegetation	A site inspection by NGH from 22 to 25 November 2021 confirmed the majority of the site is highly modified and consists of cropped paddocks and exotic pastures. These areas provide low biodiversity values however can provide some habitat for foraging and habitat for fauna species. There are small areas of high biodiversity value within the Project Site consisting of areas of Threatened Ecological Communities (TECs), Riparian areas, scattered mature paddock trees and hollow bearing trees utilised by threatened species including the Superb Parrot. These areas provide important fauna habitat for nesting, breeding and movement across the landscape. Further detail including a biodiversity constraints map for the site, is provided in Section 6.2.1. Impacts to these areas have been minimised where practical in the Project concept design.
Threatened species	The site inspection and targeted species surveys in spring established there is minimal potential for threatened flora species on site. Threatened Superb Parrots were identified on site. Further seasonal targeted fauna surveys of habitat will be required to adequately complete a biodiversity assessment. A preliminary assessment of threatened species is included in Section 6.2.1. Observations of Superb Parrots occurred throughout the whole site – in the wooded creek lines in the North, West and South and also isolated patches of hollow bearing

Areas of constraint	Applicability to the Project
	trees in the centre of the site. However, Superb parrots were more commonly found along the creek lines. 40 hollow bearing trees were identified that contained suitable breeding hollows. The majority of hollow bearing trees and riparian areas have been avoided in the concept design.
Potential residences	24 residences are located within 3.25km of the Project Site boundary (2 of these are involved landowners). Some screening is provided by existing vegetation and topography. Visual amenity is considered in Section 6.2.2 and noise and vibration are considered in Section 6.2.3.
Waterways	Surface water features within the Project Site include: • Coreinbob Creek, a 5th order stream • Mates Creek, a 4th order stream • Undefined ephemeral streams. Coreinbob Creek and Mates Creek are both mapped as Key Fish Habitat (KFH). Coreinbob Creek is mapped as being a known aquatic Groundwater Dependent Ecosystem (GDE). The Project Site is not mapped as flood prone land. Hydrology, groundwater and water quality are considered in Section 6.3.
Aboriginal/Heritage significance	An extensive Aboriginal Heritage Information Management System (AHIMS) search did not identify any items within the Project Site. There is a cluster of registered Modified Trees and an Ochre Quarry located within 500m of the northern extent of the Project Site. The proposal area is intersected by Coreinbob Creek, and located adjacent to Mates Creek and Tarcutta Creek, which are likely to retain higher potential to preserve items of Aboriginal heritage significance. The Tarra Wingee and Outbuildings heritage item is located to the north of the Project Site. The Project may also result in visual impacts to the Tennis Courts and Clubhouse located to the north of the Project area. Further investigation is required to determine Aboriginal/Heritage significance on the Project Site. Aboriginal heritage is considered in Section 6.2.5 and non-indigenous heritage is considered in Section 6.2.6.
Important agricultural land	No Strategic Agricultural Land (Biophysical, Equine or Viticulture) occurs within the Project Site. The site is mapped within the Land and Soil Capability (LSC) Assessment Scheme state-wide mapping as 4 ‘Moderate capability land’ and 5 ‘Moderate – low capability. Land use compatibility is further considered in Section 6.2.4 of this report.
Residential zones	The Project site is zoned RU1 (Primary Production) under the Wagga LEP and is considered compatible with solar development. Land zoned RU5 (Village) is located at Tarcutta, approximately 8km southeast of the Project Site. Land zoning is discussed in Section 2.2 and Section 4 of this report.
Resource developments	There are no mineral or petroleum exploration licences associated with the Project Site.

Areas of constraint	Applicability to the Project
	Land use compatibility is discussed in Section 6.2.4 of this report.
Crown Land	No Crown Land occurs within the Project Site.

3. The Project

3.1. Project description

The Project would involve the development, construction, operation and decommissioning of a photovoltaic (PV) solar facility with a capacity of up to 160 $MW_{(ac)}$ that would supply electricity to the national electricity grid, and a BESS (AC or DC coupled), with an indicative capacity of 100MW (4 Hours Storage). The Project Site covers approximately 460ha, with the area of solar arrays, BESS and associated infrastructure anticipated to occupy approximately 300ha. This would include an onsite substation (two proposed locations shown on Figure 1-3, only one will be utilised depending on the project configuration).

The Project is likely to include the following infrastructure:

- Up to 40 Power Conversion Units (PCUs) disbursed throughout the solar farm, each housing inverters, medium voltage transformers and switchgear
- Up to 400,000 PV modules mounted on single-axis tracking systems which are then mounted on steel piles driven into the ground
- Containerised BESS (AC or DC-coupled) and network support devices
- Substation, control room and switchyard
- An overhead 132kV transmission line to connect the solar farm substation with either one or both of the existing Transgrid transmission lines
- Internal access track and underground cabling
- Site office and operations and maintenance building with parking for the operations team
- Landscape plantings, to soften and break up expansive views of infrastructure
- Subdivision of Lot 2 DP169567 to create a new lot (approximate 1ha) for the proposed substation.

The Project Site boundary and indicative Development Footprint is provided in Figure 1-3. The final development footprint that will be assessed in the EIS, will be informed by community and stakeholder consultation, and detailed environmental investigations. The EIS will assess and seek consent for the broader development footprint to ensure the required design flexibility in detailed design.
The construction phase is expected to take approximately 12-18 months, with peak construction taking around nine months. It is anticipated that the Project would operate for upwards of 30 years, after which time the solar farm would be decommissioned. The decommissioning phase would involve the removal of all above ground infrastructure and below ground infrastructure where possible and return of the site to its existing land capability.

The capital investment value (CIV) of the MGSF is approximately $300 million (including approximately $120 million for the battery storage component). A detailed CIV report would be prepared as part of the development application process, which would confirm the CIV.

3.2. Project design

3.2.1. Project history

The Project was originally identified by CWP Renewables Pty Ltd, (“CWP Renewables”). Spark Renewables purchased the rights to continue to develop the Project in 2021 after performing detailed due diligence.

CWP Renewables selected the site after performing an extensive study of potential solar farm sites along the two 132kV Transgrid transmission lines (990 and 993) and other transmission infrastructure in the state of NSW. A wide range of constraints were considered, including biodiversity, land use, heritage, flood risk, access, and nearby dwellings.

3.2.2. Defining the project site

Lot 2 DP169567, Lot 2 DP1088773, Lot 3 DP1143645, 2937 DP 1182487, Lot 2936 DP1182464, Lot 1 DP960820, Lot 1 DP440654, Lot A DP442593 & Lot 1 DP178044 (refer to Figure 2-1) were identified by the proponent as the most feasible location to develop a solar farm.

The entirety of the lots, as per Figure 2-1, were considered for the solar farm, and the following key considerations shaped the proposed concept design for the Project:

- Ensuring clear access to the transmission line for grid connection
- Minimise biodiversity, environmental and hydrological impact
- Avoiding impacts to historical rail infrastructure
- Location of neighbouring dwellings and minimising noise and visual impact
- Practicality/constructability regarding land topography compatibility for the solar farm and BESS (AC or DC coupled) infrastructure
- Angle and direction of the trackers to ensure maximum solar irradiance of the panels.

3.2.3. Concept design

The concept design of the Project, as per Section 3.1, to produce a capacity of 160 $MW_{(ac)}$ is shown in Figure 3-1.

The Project development footprint is anticipated to be similar to the estimated operational footprint of 300 ha.

3.2.4. Construction methodology

An indicative construction methodology is anticipated to include:

- Establishment of a temporary site compound within a fenced off area within the development footprint including a site office, toilet facilities, lay down areas, containers for storage & parking areas
- Construction of access tracks and boundary fencing
- Piles to support solar trackers to be driven into the ground
- Solar tracking systems to be installed on top of the piles
- PV modules to be mounted onto the solar tracking frame and connected via cables that run behind the modules to combiner boxes at the end of certain rows of trackers
- Construction of foundations or piles for the PCUs, switchyard, substation, BESS and management hub structures
- Underground cabling to be installed between the ends of the solar trackers, PCUs and the substation
- Transmission infrastructure to be constructed for connection to the existing electricity network, including the 1.4km section of 132kV overhead transmission line and the substation.

4. Statutory context

Relevant statutory considerations for the Project are presented in Table 4-1.

Table 4-1 Statutory requirements

Category	Statutory requirements	Relevance to Project
Power to grant consent	State Environmental Planning Policy (Planning Systems) 2021 (PS SEPP) NSW *Environmental Planning and Assessment Act 1979* (EP&A Act).	Clause 20 of Schedule 1 of the PS SEPP states that the following is considered a SSD: *Development for the purpose of electricity generating works or heat or their co-generation (using any energy source, including gas, coal, biofuel, distillate, waste, hydro, wave, solar or wind power) that:* *(a) has a capital investment value of more than $30 million, or* *(b) has a capital investment value of more than $10 million and is located in an environmentally sensitive area of State significance.'* The Project would have a capital investment cost estimate of more than $30 million (~$300 million). Therefore, the Project is classified as "State Significant Development" under division 4.7 of the EP&A Act. The Minister for Planning and Public Spaces is the consent authority for SSD, and SSD applications are assessed by DPE (unless specific conditions occur e.g., where 50 or more people have objected to the application, the local council has objected to the application; and/or the applicant has disclosed a reportable political donation, whereby the Independent Planning Commission (IPC) would be the consent authority.
Permissibility	State Environmental Planning Policy (Transport and Infrastructure) 2021 (TISEPP), Wagga Wagga Local Environmental Plan 2010 (Wagga LEP).	The Project Site is subject to the provisions of the Wagga LEP and is zoned RU1 (Primary Production). Electricity generation is not prohibited and is permitted with consent within this zone. Further, section 2.36 of the TISEPP states development for the purpose of electricity generating works may be carried out by any person with consent on any land in a prescribed rural, industrial or special use zone. Therefore, the Project is permissible with consent.
Other approvals	*Roads Act 1993* (Roads Act), *Environment Protection and Biodiversity*	**Consistent approvals** Section 4.42 of the EP&A Act states "*An authorisation of the following kind cannot be refused if it is necessary for carrying out State significant development that is authorised by a development consent under this Division*

Category	Statutory requirements	Relevance to Project
	Conservation Act 1999 (EPBC Act), State Environmental Planning Policy (Resilience and Hazards) 2021 *Heritage Act 1977, Water Management Act 2000* (WM Act), *National Parks and Wildlife Act 1974* (NPW Act), *Fisheries Management Act 1994* (FM Act)	*and is to be substantially consistent with the consent*": • Consent under section 138 of the Roads Act for road upgrades to the public road network. **EPBC Act approval** An EPBC Referral will be submitted, and an approval sought if found to be a controlled action. **Other approvals** Approvals/licenses that may be required for the Project include: • A preliminary hazard analysis (PHA) under Chapter 3 Hazardous and offensive development of State Environmental Planning Policy (Resilience and Hazards) 2021 for energy storage systems. Approvals that would be required were this not an SSD project include: • An approval under Part 4 or a permit under Section 139 of the *Heritage Act 1977* for excavation works (where required) • An Aboriginal Heritage Impact Permit (AHIP) under Section 90 of the NPW Act • Controlled activity approval (other than an aquifer interference approval) under Sections 89,90 and 91 of the WM Act • Applications for permits under Sections 201, 205 or 219 of the FM Act.
Pre-condition to exercising the power to grant consent	N/A	No pre-conditions to exercising the power to grant approval have been identified for the Project.
Mandatory matters for consideration		The following key Commonwealth, State and Local legislative and policy instruments are applicable to the project: Commonwealth • EPBC Act • *Native Title Act 1993.* NSW

Category	Statutory requirements	Relevance to Project
		• EP&A Act • State Environmental Planning Policy (Planning Systems) 2021 • State Environmental Planning Policy (Transport and Infrastructure) 2021 • State Environmental Planning Policy (Primary Production) 2021 • State Environmental Planning Policy (Biodiversity and Conservation) 2021 • State Environmental Planning Policy (Resilience and Hazards) 2021 • State Environmental Planning Policy (Resources and Energy) 2021 • *Roads Act 1993* • *National Parks and Wildlife Act 1974* • *Water Management Act 2000* • *Heritage Act 1977* • *Biodiversity Conservation Act 2016* (BC Act). <u>Local instruments</u> • Wagga Wagga LEP 2010 • Wagga Wagga Regional Development Control Plan 2010.

5. Engagement

5.1. Community Engagement Management Strategy

Spark Renewables has prepared a Community Engagement Management Strategy (CEMS) for the Project, as included in Appendix D.

The objectives of the CEMS are to:

- Identify effective methods to inform the community which foster trust and build positive long-term relationships with community stakeholders
- Ensure delivery of an honest, innovative, flexible and transparent community engagement process
- Identify ways to facilitate engagement and collaborate with relevant community organisations, including for input into the environmental assessment and Project development
- Ensure the broader community and stakeholders keep informed about benefits, potential impacts, and activities of the Project
- Identify effective avenues for community members to communicate any concerns and provide valuable feedback with Project personnel
- Make the community aware of the ways in which they can be involved in the project and its contributions to the community
- Ensure the commitments made to the community during the Project development stage are being met.

This CEMS identifies:

- Relevant local community and regulatory stakeholders
- Possible concerns related to the engagement of each stakeholder group
- A tailored consultation strategy for each stakeholder group, and
- Ongoing consultation.

In establishing the CEMS, the Proponent has engaged in early consultation with community members and has incorporated lessons learnt from previous Spark Renewables developments (such as the Bomen Solar Farm) as well as other solar farms in the region into the research process. In this way, the Proponent has strived to achieve a wholistic yet locally focussed footing to underpin the CEMS, with measures in place to enable long term effective communications and local benefits to be achieved.

During the current phase of Project development, the Proponent is looking to further strengthen their relationship with the surrounding community and stakeholders, by engaging frequently, transparently, and proactively in the hopes to gain social license to operate the solar farm within the community and share the benefits. These commitments are being discussed with the community, including but not limited to:

- Proactively looking for the right skills amongst local residents and businesses to ensure the benefits stay local wherever possible
- Ensuring that tangible financial benefits can strengthen the local community through the Community Benefit Sharing Scheme
- Developing an electricity benefit sharing scheme to enable cheaper electricity to local residents
- Developing a large community fund to distribute benefits throughout the community effectively
- Developing neighbouring agreements, vegetation screening plans to those receptors most impacted by the development
- Supporting local initiatives, training, and facility upgrades in the community, and,
- Optimising indirect and flow on financial benefits to the community.

At the time of development, the CEMS was prepared in consideration of the following guidelines and references:

- Large-scale solar energy guideline: For State Significant Development, December 2018, NSW Department of Planning and Environment
- Undertaking Engagement Guide, 2020, NSW Department of Industry, Planning and Environment
- Community Guide to EIA 2019. NSW Department of Industry, Planning and Environment
- Australian Guide to Agrisolar for Large-Scale Solar, 2021, Clean Energy Council
- A Guide to Benefit Sharing Options for Renewable Energy Projects, 2019 Clean Energy Council.

Containing a community profile and a socio-economic overview of the area, the CEMS establishes detailed consultation strategies specific to the needs of each stakeholder group, as well as associated risk analyses and mitigation measures.

- The CEMS will be maintained and revised to ensure consultation during the development of the EIS remains consistent with the:
- State Significant Development Guidelines, 2021, NSW Department of Industry, Planning and Environment
- Social Impact Assessment Guideline, 2021, NSW Department of Industry, Planning and Environment
- Technical Supplement: Social Impact Assessment Guideline for State Significant Projects, 2021, NSW Department of Industry, Planning and Environment.

5.1.1. Aboriginal heritage consultation

It is a strong focus of the Proponent to engage early with stakeholders holding cultural and traditional or on-the-ground-knowledge which can be incorporated into the development, allowing for effective mitigation and avoidance strategies, as well as mutual benefits to be realised. Consultation with the local Aboriginal community, as per the *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW 2010), will be an important component of this, particularly during the assessment process.

An important part of the assessment for the Environmental Impact Statement will be the evaluation of Aboriginal cultural heritage. As further discussed in Section 6.2.5, an Aboriginal Cultural Heritage Assessment (ACHA) will be prepared in accordance with the *Code of Practice for the Archaeological Investigation of Aboriginal Objects* in NSW (DECCW 2010).

5.2. Consultation to date

The Proponent has been proactive in consulting with the local Borambola, Tarcutta and regional Wagga Wagga communities and the Wiradjuri knowledge-holders, with the aim of ensuring that the development is sustainable and supported in the long term.

Scoping phase consultation has been designed to ensure a high level of understanding and awareness amongst the local community and stakeholders. It has involved an initial identification and preliminary assessment of the social impacts of the Project, using engagement feedback to date, comparative studies, survey feedback, and existing knowledge about the Project.

The first Community Newsletter of the Project was hand-delivered to the accessible residences within the 5km radius of the Project in February 2022.

Representatives of Aboriginal groups (Wiradjuri knowledge-holders) and the Local Aboriginal Land Council representative of Wiradjuri were informed of the development proposal and the intention to undertake the first stage of the evaluation of Aboriginal cultural heritage.

A Media Release was distributed to local newspaper, radio and TV stations in the Wagga Wagga region.

A courtesy notification of the Community Newsletter and Media Release was distributed via the Project Stakeholder Database, which includes Federal and NSW Ministers and Members of Parliament, NSW Farmers, Regional Development Australia, Wagga Wagga Business Chamber, AEMO, and Transgrid.

A summary of the consultation and key matters raised during the consultation activities are outlined in Table 5-1.

Table 5-1 Consultation undertaken to date

Stakeholder	Date	Activity/purpose	Matters raised/outcomes	Considerations/response
Nearby landowners, community members of Tarcutta, Borambola and Wagga Wagga	Nov 2021 - Feb 2022	*Inform*: • Face-to-face meeting on property nearby to the Project site to introduce the proponent and advise of the intention to propose a solar farm development prior to making a formal public announcement. • Distributing the first Community Newsletter ("Mates Gully Solar Farm Community Newsletter 1 – February 2022", 7 February 2022) to provide key information on the Project – proposed location, rationale for site selection, project size, technology, planning status, intention to share benefits with the community based on the level of impact from the Project, and details of a community meeting. This was hand-delivered to the accessible post-boxes within 5km radius of the Project site (approximately 30 out of the 40 landholders). Those who's residences have not been located, contact has been attempted via phone calls and newsletter delivery via email, where known. • Launched the Project website at www.matesgullysolarfarm.com with the option to receive automated Project updates via newsletters. *Consult:* • Two virtual consultation meetings were held to provide additional details about the Project and its planning process (e.g., proposed site map, footprint of Project infrastructure, options for land use, potential assessment studies to be undertaken as part of the Environmental Impact Assessment). The time and place of the meetings were advertised via local newspaper (The Daily Advertiser), radio station (Triple A). Expert consultants on farming (Andrew Bomm) and technical studies (Les Seddon) presented at the meetings and were available to answer questions. *Engage:* • During the meeting attendees could voice their opinions, questions and concerns in front of all participants, or privately, via a direct messaging facility. Issues were raised verbally at both community meetings and in writing via online surveys and direct emails. *Feedback*: • A Social Impact Assessment survey was launched to collect feedback about the impacts of the Project (ongoing).	Concerns were raised around environmental and social impacts; in particular: • Early involvement and consultation with the Traditional Owners; • Risk management of contamination from solar farms and battery systems. • Visual amenity of the Project to nearby landowners; • Risk management of fire safety during extreme weather events such as flooding and drought; • Impacts on land during construction; • Compensation for the local neighbours; • Origin of materials and equipment used in construction.	• All concerns were registered and responses drafted to address each concern. • A public informative document "Frequently Asked Questions" to address each topic will be made available on the Project website, and shared with all participants of the meeting. • Assess whether raised concerns are material to warrant additional technical studies.
Local media	Feb 2022	*Inform*: • Media release "Community consultation commences for the proposed Mates Gully Solar Farm" (8 February 2022) announcing the proposed development of MGSF distributed to the local radio, newspaper, and TV contacts.	An article titled "Solar Farm Sparks Debate" was published by the Wagga Daily Advertiser on 10 February 2022.	Continue to update media contacts with Project updates.
Department of Planning & Environment	Feb 2022	*Inform:* • A notification sent to the Department, as outlined in the media release along with the first Community Newsletter.	No concerns raised.	Continue to inform the Department of project updates (e.g., when new materials are uploaded on the Project website).
Wagga Wagga City Council	Feb 2022	*Consult*: • A virtual meeting was held with the General Manager (Peter Thompson) to introduce the Project, discuss the upcoming virtual community sessions and	Peter reinforced the importance of consultation, with neighbours and Traditional Custodians	Continue to provide Project updates via newsletters and meetings.

Stakeholder	Date	Activity/purpose	Matters raised/outcomes	Considerations/response
		consultation in general.		
Aboriginal groups including Bundyi Aboriginal Cultural Knowledge (BACK) Aboriginal Corporation, Wiradjuri knowledge-holders, and the Local Aboriginal Land Council representative of Wiradjuri	Feb 2022	*Inform*: • A phone call with a local Wiradjuri Elder to introduce the Project proponent. Personalised letters sent to members of the local Aboriginal community (Wiradjuri knowledge-holders) as identified in Heritage Advice provided by Austral Archaeology (September 2021). Plans outlined of the intention to engage an archaeologist to undertake an Aboriginal Cultural Heritage Assessment (ACHA) in accordance with the Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW (DECCW 2010). *Consult*: • Wiradjuri knowledge-holder attended a community meeting and took the opportunity to explain what matters to the local community and how to gain support for the Project.	• Explained that people are anxious about the future of their land and early consultation with Wiraduri people is a prerequisite for support for the Project in the community. • Questioned on risk management around spillage and pollution of creeks during construction. • Advised to pay particular attention to the creeks running through the solar farm site and to be consulted during the Project planning process, e.g. access routes.	• Commence the first stage of the evaluation of Aboriginal cultural heritage, which will involve contacting known Traditional Custodians. • Prepare communication materials, which address and alleviate concerns over land use and impacts on the land and the environment. • Inclusion of Wiraduri knowledge holders in all future survey work and heritage studies.
Federal and NSW Ministers and MPs (Acting Minister of Industry, Science & Technology; Member for Riverina; NSW Member for Wagga Wagga; NSW Minister for Energy and Environment)	Feb 2022	*Inform:* • A letter sent to the MPs announcing the proposed development of MGSF and community consultation; and advising MSFG to be a State Significant Development. *Consult:* • A virtual meeting was held with the state member for Wagga Wagga, Joe McGirr	Joe raised concerns that were brought to him by nearby neighbours including use of agricultural land, potential for increased salinity, visual impact	Continue to inform the MPs of Project updates and provide information to address concerns.
Australian Energy Market Operator	Feb 2022	*Inform:* • A letter sent announcing the proposed development of MGSF and community consultation commencing.	No concerns raised.	Continue to inform AEMO of Project updates.
Transgrid	Feb 2022	*Inform:* • A notification sent to outline the proposed development of MGSF and community consultation commencing.	No concerns raised.	Continue to inform Transgrid of Project updates.
NSW Farmers	Feb 2022	*Inform*: • A phone call to provide an overview of the proposed Project, and options for farming activities that are of compatible with the operation of the solar farm. *Feedback:* • A representative attended the community meeting and raised a number of questions • Feedback was received and questions were addressed via email communication.	• Rationale for site selection and why the proponent looking to build outside the state designated Renewable Energy Zones (REZs). • Questioned whether feasibility studies have been completed on capacity of transmission lines. • Queried whether landowners are involved in an early stage through compensation.	• Continued engagement via sharing materials and phone calls. • Address issues raised in a public information document.
Other stakeholders (Regional Development Australia, Wagga Wagga Business Chamber)	Feb 2022	*Inform*: • The first Project Community Newsletter was distributed to individuals and representatives on the Project Stakeholder Database that may have an interest in the Project. An offer was made to meet up face-to-face or over phone/video call to introduce the proponent and the Project.	Received offers from local service providers.	• Service providers to be recorded in the Stakeholder Database. • Continue to share project updates via newsletters and offer to meet to discuss the Project.

5.3. Community views

The Proponent has been proactive in reaching out to the local Borambola, Tarcutta and regional Wagga Wagga communities and the Wiradjuri knowledge-holders.

Significant emphasis has been placed on engaging with neighbours within the 5km radius of the Project as well as those self-identified as 'interested in the Project'.

A Social Impact Assessment survey has been released to collect preliminary feedback, better understand community values, and identify issue areas.

In general, feedback has concluded that there has been increased community concern relating to the risk management of contamination from solar farms, which has gained momentum recently in the community via media concerns of potential toxicity of solar panels. This relates to the growing community concern around land use and questions as to how the Project would impact the regional farming production, as well as concerns as to the materials used and responsible sourcing practices and processes in place to prevent modern slavery.

Other prominent issues include risks of fire safety management of solar farms and battery units in rural areas, end of life waste and recycling, and visual impacts on neighbouring landowners.

Spark Renewables has communicated with local Wiradjuri knowledge-holders over the phone, email, and at the community meeting. The important message received was that early consultation and involvement is a prerequisite to community support for the Project but also potentially avoiding costly mistakes down the track.

Further description of issues and views established to date are summarised in Table 5-2.

Table 5-2 Summary of community views during scoping phase:

Issue	Source	Scale/spatial	Category	Community views
Visual amenity	- Written feedback - Informal verbal discussions - Raised at meetings	- Neighbour - Local	- Alternatives/justification	Concern over no longer having "uninterrupted views". Questioning whether landscaping and screening would remedy the issue. Concerns raised about potential glare.
Anxiety surrounding the future use of the land	- Raised at meetings	- Local - Regional	- Further community engagement	Initial mistrust towards "newcomers" (i.e., developers) who do not regard the land as their home nor understand the cultural importance of land to Aboriginal people.
Rationale for site selection	- Written feedback - Informal verbal	- Neighbour Local	- Alternatives/justification	The location is not suitable because of flood risk in the north, steep terrain in the south and because it is

Issue	Source	Scale/spatial	Category	Community views
	discussions - Raised at meetings			perceived as prime agricultural land.
Solar farm outside of REZ	- Raised at meetings	- Regional	- Strategic	Any renewables projects being planned for NSW, should be part of the Renewable Energy Zone as planned under NSW Government policy and should be out west where land value is lower.
Loss of land and compatibility with agricultural activities	- Written feedback - Raised at meetings	- Local - Regional	- Further community engagement	Land in solar farms is “dead land”, no longer suitable for farming.
Contamination from solar panels and battery (soil leakage)	- Written feedback - Raised at meetings	- Regional National	- Further assessment	Perception that solar panels and the associated infrastructure is made of toxic materials. Lack of evidence that heavy metals do not seep into the ground.
Risk of fire and ability to put it out	- Raised at meeting	- Regional - State	- Further assessment	Solar farm and battery infrastructure increases risk of fire on extremely hot days. Landscaping zones will be full of weeds that would increase fire risk. Local fire service would have difficulty accessing the Project site. Belief that the Project owner would refuse to cover costs for damage.
Management of vegetation	- Written feedback - Informal verbal discussions - Raised at meeting	- Neighbour	- Further community engagement	Change in landscape, flora and fauna in the vicinity of the Project and concerns that the Project operator fails to contain spread of weeds to neighbouring properties.
De-valuing neighbouring properties	- Raised at meeting	- Neighbour - Local	- Beyond the scope	Change in view to the Project site would detrimentally affect property prices and reduce potential income from future sale of property.

Issue	Source	Scale/spatial	Category	Community views
Modern slavery used in manufacturing of equipment	- Written feedback - Raised at meeting	- National - International	- Further assessment	Suppliers are selected based on cheapest option not quality or consideration of the source of materials or manufacturing of the equipment.
End-of -life recycling of materials	- Written feedback - Raised at meeting	- National	- Further assessment	Solar farm infrastructure is “un-recyclable”, would like to see waste managed and recycled appropriately.
Uneven distribution of benefit-sharing	- Raised at meeting	- Neighbour - Local	- Further community engagement	Most of the community benefit funding would be shared with communities that have no impacts from the Project.

6. Environmental assessment

6.1. Methodology

A preliminary environmental assessment has been completed to assist in the identification of key environmental matters that would require further assessment within the EIS.

The assessment is based on the Proponent's experience in solar farm development, a desktop review, a preliminary site inspection (involving limited flora and fauna surveys and confirmation of general site characteristics), biodiversity surveys and vegetation mapping to identify potential high-level constraints and major risks to the Project. This will be used to guide further detailed investigations and the detailed design of the solar farm.

The following was included in the preliminary environmental assessment:

1. Investigation of the planning pathway and relevant legislation that may impact the project.
2. Desktop review, including database searches relating to:
    - Threatened flora and fauna species and ecological communities
    - EPBC Act Protected Matters Reporting Tool
    - Aboriginal heritage
    - Land use / nearby receivers
    - Key fish habitat
    - Historic heritage
    - Soil and landscape capability mapping
    - Soil landscapes.
3. A preliminary biodiversity assessment including site inspection and threatened species surveys to review historical biodiversity constraints assessment and confirm biodiversity status.
4. LCA preparation to determine whether Category 1 – Exempt Land is located within the Project Site. Category 1 – Exempt Land can be excluded from most aspects of the biodiversity assessment, under the BC Act Biodiversity Assessment Method (BAM).
5. Preliminary desktop Visual Impact Assessment
6. Scoping phase Social Impact Assessment
7. Screening review of all wider assessment matters.

From this analysis, some environmental matters were deemed to be key issues on the basis that they had the potential, without suitable mitigation, to have a significant impact on the environment.

Based on preliminary site assessment and desktop review, a summary of the key environmental issues of relevance to the site and its development is provided below. These include:

- Biodiversity
- Landscape and visual
- Land use compatibility
- Social impacts and benefits
- Noise and vibration
- Access and traffic
- Aboriginal heritage
- Non-Indigenous heritage
- Cumulative impacts
- Hazards – bushfire, electric and magnetic fields and glint and glare
- Hydrology, groundwater and water use.

The scale of impact, nature of impact and sensitivity of the receiving environment for the environmental issues addressed in the following sub sections, for key issues as well as all other environmental issues, have been summarised in the scoping summary table in Appendix A. The scoping summary table includes the level of assessment required for each matter for the EIS phase, if a cumulative impact assessment (CIA) is required, the type of engagement required, relevant government plans, policies and guidelines and a reference to where the matter is addressed in the scoping report.

6.2. Assessment of key matters

6.2.1. Biodiversity

Methodology

Ecological values of the Project Site were investigated utilising the following desktop searches and data obtained during a site survey conducted by ELA on 22 October 2019 and during targeted species searches, conducted by NGH from 22 to 25 November 2021. Desktop surveys included the following:

- Existing threatened species listings under the BC Act and EPBC Act
- Existing records of threatened species sightings in the subject land, as recorded in the NSW BioNet Database
- Federal Department of Agriculture, Water and the Environment Protected Matters Search Tool (PMST) (nationally threatened species and communities listed under the EPBC Act)
- Bureau of Meteorology Groundwater Dependent Ecosystems Atlas
- Areas of outstanding biodiversity value declared under the BC Act.

Existing environment

Threatened species

Desktop searches of the BC Act Bionet Database and EPBC Act Protected matters Search Tool (PMST) identified the following as being identified or likely to occur within 10km of the Project Site (the locality).

Table 6-1 Threatened entities with potential to be present on site:

Listing Type	NSW Bionet	PMST
Birds	• *Climacteric picumnus victoriae* (Brown Treecreeper (eastern subspecies)) • *Melanodryas cucullata cucullata* (Hooded Robin) • *Artamus cyanopterus cyanopterus* (Dusky Woodswallow) • *Pomatostomus temporalis temporalis* (Grey-crowned babbler) • *Chthonicola sagittata* (Speckled Warbler) • *Daphoenositta chrysoptera* Varied Sittella	• *Anthochaera phrygia* (Regent Honeyeater) • *Botaurus poiciloptilus* (Australasian Bittern) • *Hirundapus caudacutus (*White-throated Needletail) • *Lathamus discolor* (Swift Parrot) • *Polytelis swainsonii* (Superb Parrot) • *Calidris ferruginea* (Curlew Sandpiper) • *Falco hypoleucos* (Grey Falcon) • *Grantiells picta* (Painted Honeyeater) • *Rostratula australis (*Australian

Listing Type	NSW Bionet	PMST
	• *Melithreptus gularis gularis* (Black-chineed Honeyeater) • *Petroica phoenicea* (Flame Robin) • *Petroica boodang* (Scarlet Robin) • *Stagonopleura guttata* (Diamond Firetail) • *Grantiella picta* (Painted Honeyeater) • *Anthochaera phrygia* (Regent Honeyeater) • *Glossopsitta pusilla* (Little Lorrikeet) • *Callocephalon fimbriatum* (Gang-gang Cockatoo) • *Falco subniger* (Black Falcon) • *Hieraaetus morphnoides* (Little Eagle) • *Circus assimilis* (Spotted Harrier) • *Anseranas semipalmata* (Magpie Goose)	Painted Snipe) • *Leipoa ocellata* (*Mallee fowl*)
Fish	• None cited	• *Galaxias rostratus* (Flatheaded Galaxias) • *Maccullochella macquariensis* (Trout Cod) • *Maccullochella peelii* (Murray Cod) • *Macquaria australasica* (Macquarie Perch)
Amphibians	• None cited	• *Crinia sloanei* (Sloane's froglet) • *Litoria booroolongensis* (Booroolong Frog) • *Litoria raniformis* (Growling Grass Frog)
Mammals	• *Petaurus norfolcensis* (Squirrel Glider) • *Petaurus norfolcensis* (Squirrel Glider) (endangered population in the Wagga Wagga LGA) • *Dasyurus maculatus maculatus* (Spot-tailed Quoll) • *Miniopterus orianae oceanensis* (Large Bent-winged Bat) • *Phascolarctos cinereus* (Koala) • *Myotis macropus* (Southern Myotis) • *Falsistrellus tasmaniensis* (Eastern False Pipistrelle) • *Pteropus poliocephalus* (Grey-headed Flying-fox)	• *Nyctophilus corbeni* (Corben's Long-eared Bat) • *Phascolarctos cinereus* (Koala) • *Dasyurus maculatus maculatus* (Spot-tailed Quoll) • *Pteropus poliocephalus* (Grey-headed Flying-fox)

Listing Type	NSW Bionet	PMST
Plants	• *Leucochrysum albicans* var. tricolor (Hoary Sunray)	• *Amphibromus fluitans* (Swamp Wallaby-grass) • *Caladenia arenaria* (Sand-hill Spider Orchid) • *Leucochrysum albicans* var. tricolor (Hoary Sunray) • *Prasophyllum petilum* (Tarengo Leek Orchid) • *Senecio macrocarpus* (Large-fruit Fireweed) • *Swainsona recta* (Small Purple Pea)
Reptiles	• *Delma impar* (Striped Legless Lizard)	• *Delma impar* (Striped Legless Lizard) • *Aprasia parapulchella* (Pink-tailed Worm Lizard)
Migratory Species (Terrestrial)	• N/A	• *Hirundapus caudacutus* (White-throated Needletail) • *Motacilla flava* (Yellow Wagtail) • *Myiagra cyanoleuca* (Satin Flycatcher) • *Rhipidura rufifrons* (Rufous Fantail)

Full database results are provided in Appendix C. Nine threatened species records are recorded from within a 1km buffer of the Project Site. These records are of; Superb Parrot, Grey-crowned Babbler, Brown Treecreeper, Speckled Warbler, Flame Robin, Scarlet Robin, Varied Sitella, Black-chinned Honeyeater and Gang-gang Cockatoo. Superb Parrot, listed as vulnerable, was detected within the proposal area on numerous occasions during the site inspections.

Key fish habitat and threatened fish distributions

Coreinbob Creek to the West and unnamed creek in the South East are mapped as Key Fish Habitat (KFH) as per DPI's Fisheries NSW Spatial Data Portal Appendix C. Coreinbob Creek is mapped as potential distribution for the threatened Flathead Galaxias.

Groundwater Dependent ecosystems

A search of the GDE Atlas (Bureau of Meteorology, 2020) shows the Project Site has no known potential for terrestrial groundwater dependent ecosystems across the site, and Coreinbob Creek and Mates Creek are moderate to high potential of an aquatic GDE (refer to Appendix C).

Vegetation Mapping and Threatened Ecological Communities

Using the State Vegetation Type Map: Riverina (Vis ID 4469) and field inspection, vegetation in the Project Site was mapped to Plant Community Types (PCTs). Three PCTs were detected within the Project Site (Table 6-2 and Figure 6-1). Areas of planted native vegetation around 20 years old were also present.

Table 6-2 PCTs within Project Site:

	PCT 79	Vegetation Formation	Vegetation Class
PCT 79	*River Red Gum shrub/grass riparian tall woodland or open forest wetland mainly in the upper slopes sub-region of the NSW South Western Slopes bioregion and*	Forested Wetlands	Eastern Riverine Forests

	PCT 79	Vegetation Formation	Vegetation Class
	western South East Highlands Bioregion		
PCT 266	*White Box Grassy Woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion*	Grassy Woodlands	Western Slopes Grassy Woodland
PCT 277	*Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion*	Grassy Woodlands	Western Slopes Grassy Woodlands

PCT 266 and PCT 277 are associated with the BC Act and EPBC Act threatened ecological community (TEC) *White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions* (BC Act) commonly termed Box Gum Woodland. This TEC is listed as critically endangered under both NSW and Federal legislation.

It is likely that most areas of PCT 266 and PCT 277 meet the criteria necessary for the BC Act listed TEC Box – Gum Grassy Woodland. The only areas that may not meet the criteria are single scattered trees under which the groundcover is sufficiently degraded from cropping that it is likely irreparable.

It is unlikely the areas of PCT 266 and PCT 277 meet the condition criteria necessary for the EPBC Act listed CEEC Box Gum Woodland due to the highly degraded groundcover and dominance of exotic groundcover.

Land Category Assessment

NGH have prepared a draft LCA (NGH Pty Ltd, 2022), provided in Appendix B for the Project Site to determine the categories of land present on site; Category 1 - Exempt Land, Category 2 (regulated land, vulnerable regulated land, or sensitive regulated land), and excluded land.

Clearing of vegetation within Category 1 – Exempt Land does not require offsetting under the BAM. The LCA concluded there is evidence to suggest that large areas of the Project Site have been heavily modified from agricultural use that was in place in 1990 and remained in place in the same areas between 1990 and 2011. These agricultural practices (predominantly cropping) are still in use in 2022, and therefore these areas were mapped as Category 1 – Exempt Land.

Areas of woody vegetation and scattered trees present in 1986 and 1991 have been mapped as Category 2 – Regulated land (Figure 6-2). Planted vegetation, not present in 1991, has been mapped as Category 1 - Exempt Land.

Matters of National Environmental Significance

The EPBC Protected Matters Search Tool within 10km of the subject land found the nearest RAMSAR wetland was located at the Hattah-Kulkyne Lakes 50-100km downstream. The proposal would not alter hydrology of the locality or region or create contaminated run-off that may affect these wetlands.

Two threatened ecological communities were listed as potentially occurring in the project site:

- Grey Box (*Eucalyptus microcarpa*) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia
- White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland.

These TECs are not considered to occur based on the lack of characteristic overstory species or lack of native groundcover.

30 threatened species were listed as potentially occurring in the Project Site. These species have been listed in Table 6-1.

Preliminary assessment

The majority of the site is highly modified and consists of cropped paddocks and exotic pastures. These areas provide low biodiversity values however can provide some habitat for foraging and habitat for fauna species. The small, isolated patches of remnant woodland and scattered paddock trees provide high biodiversity values. The areas of high biodiversity value within the Project Site consist of areas of Threatened Ecological Communities (TECs), Riparian areas, scattered mature paddock trees and hollow bearing trees. These areas provide important fauna habitat for nesting, breeding and movement across the landscape.

Other notable key constraints include the high abundance of Superb Parrots utilising the site and presence of the TEC Box Gum Woodland.

High biodiversity constraint areas are shown in Figure 6-3. The Project concept design as outlined in Section 3.2.3 has taken these constraints into consideration with the build area excluding most high biodiversity constraints where possible.

Superb Parrot

There were 16 sightings of Superb Parrots using trees within the Project Site. Observations occurred across the whole site – in the wooded creek lines in the North, West and South and also isolated patches of hollow bearing trees in the centre of the site. However, Superb parrots were more commonly found in the creek lines. No breeding Superb Parrots were observed however 40 hollow bearing trees were recorded within the site that contain suitable breeding hollows. The Project Site occurs around 3km from the Murrumbidgee River Wagga which is a core breeding area for the Superb Parrot. The development footprint, as per Section 3.2.3 has been designed to avoid removal of the majority of hollow bearing trees as well as wooded creek lines to minimise impacts to this species.

Serious and Irreversible Impacts Candidate species (SAIIS)

Small remnant patches of the TEC – Box Gum Woodland occur within the Project Site. This TEC is also a Serious and Irreversible Impact (SAII) candidate entity. SAIIs are assessed under the NSW BC Act using the BAM. Assessment against the SAII criteria will be required in the BDAR as BCD cannot approve SAIIs. The approval authority can approve a Project likely to have SAII for SSDs, however SAII impacts must be taken into consideration and the proposal must minimise impacts to SAII entities. It is anticipated that detailed design will allow for micro siting and avoidance of this fragmented vegetation.

In response to the preliminary assessment, the development footprint for the solar farm has been refined to avoid areas of TEC, remnant vegetation and hollow bearing trees where possible.

Proposed Further Assessment

As part of the EIS, further detailed ecological surveys, investigation and assessment will be undertaken in the format of a Biodiversity Development Assessment Report (BDAR) in accordance with the Biodiversity Assessment Methodology (BAM) 2020. Additional vegetation integrity plots and targeted species surveys would be undertaken to determine vegetation condition and threatened species habitat. Detailed assessment of impacts to threatened entities such as Box Gum Woodland and Superb Parrot would be undertaken. The BDAR will demonstrate how impacts have been avoided and minimised wherever possible. Biodiversity Offset requirements may be generated if biodiversity values cannot be avoided. Biodiversity credits must be retired through various options including purchase and retirement of requisite credits from the credit market or establishment of Biodiversity stewardship sites.

All relevant EPBC listed communities and species would be included in survey and reporting of the BDAR. Any significant impacts determined from assessment would require a referral to the Federal Department of Agriculture, Water and Environment.

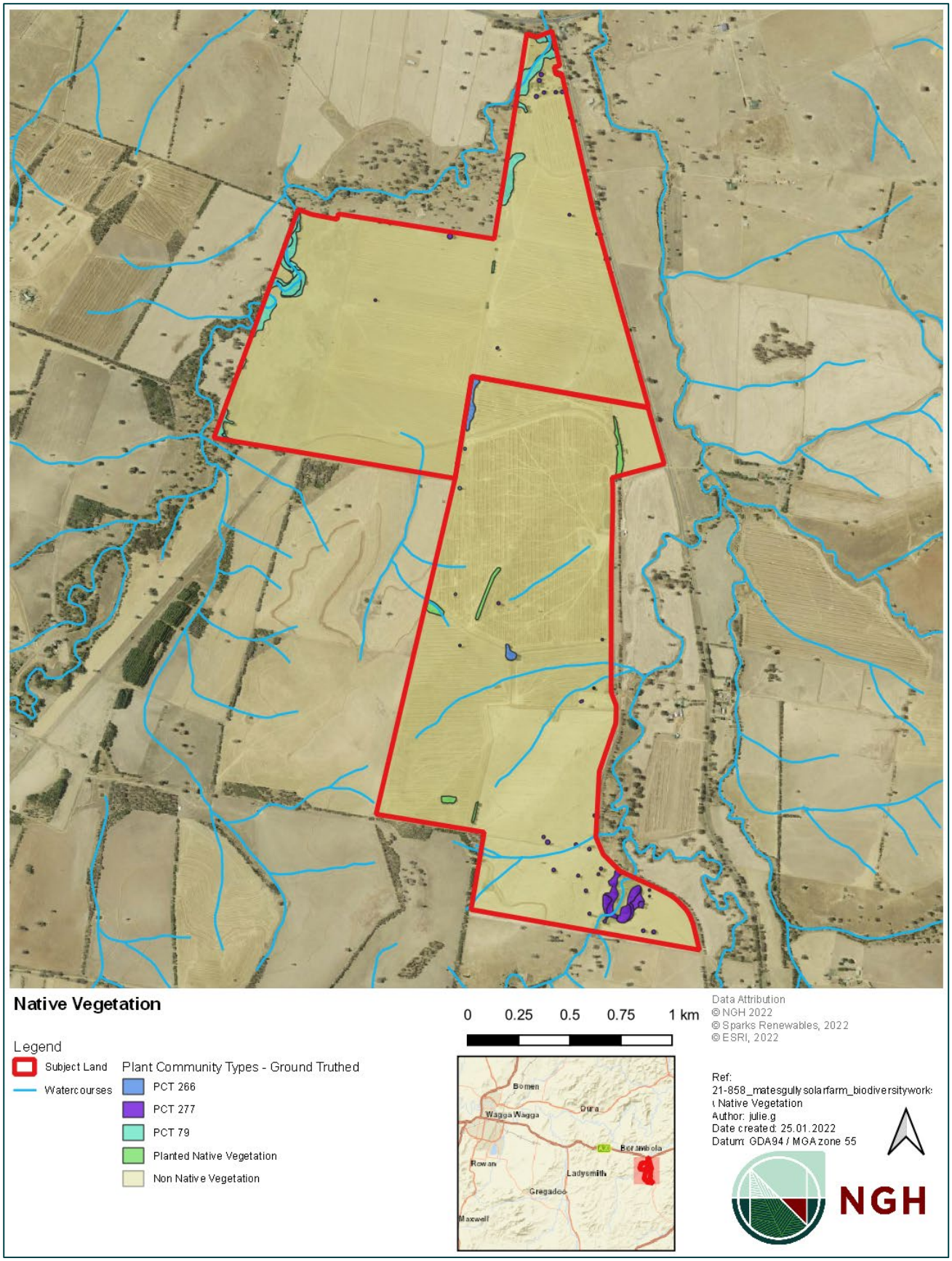

Figure 6-1 Plant Community Types

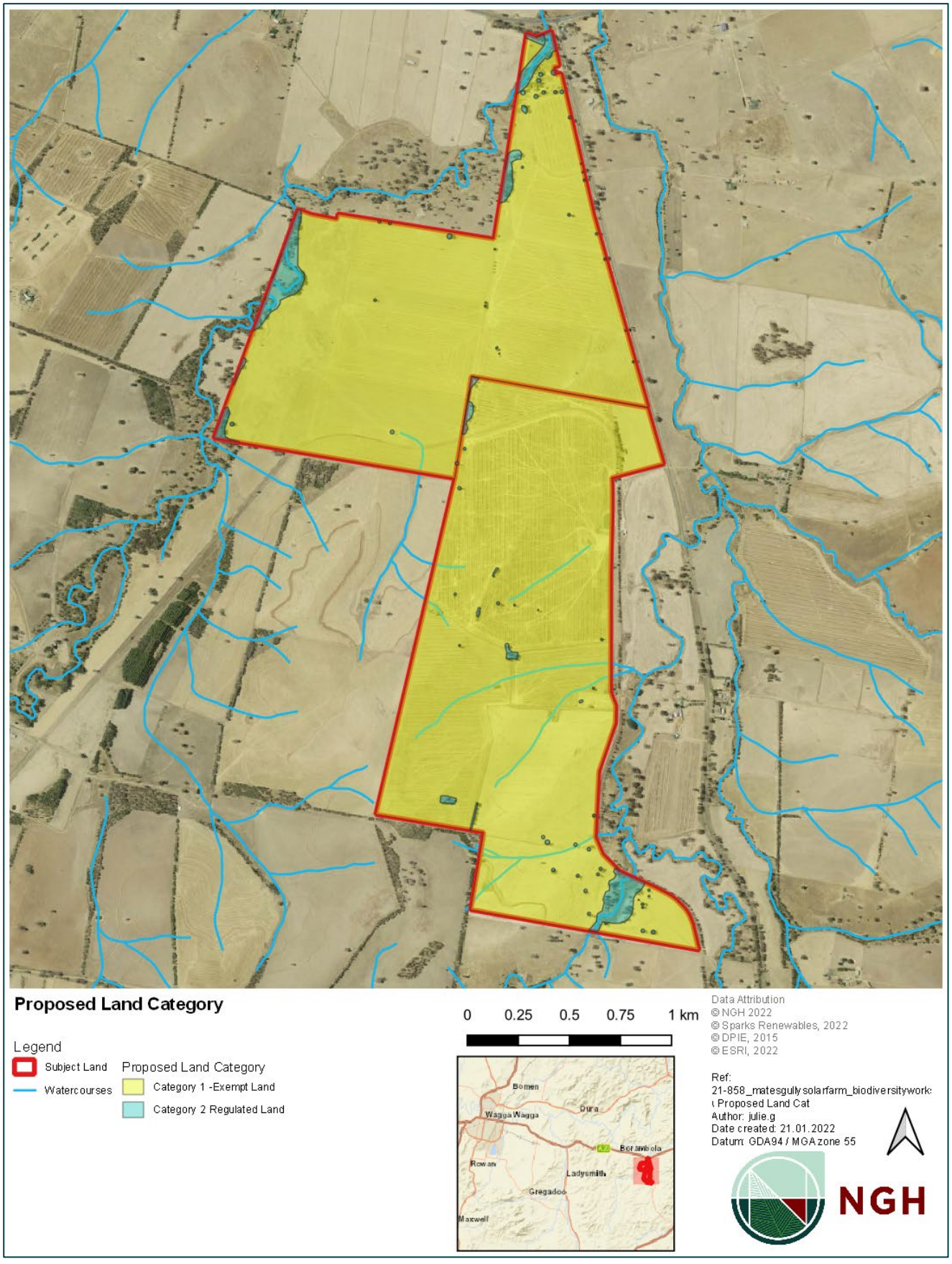

Figure 6-2 Proposed land categorisation

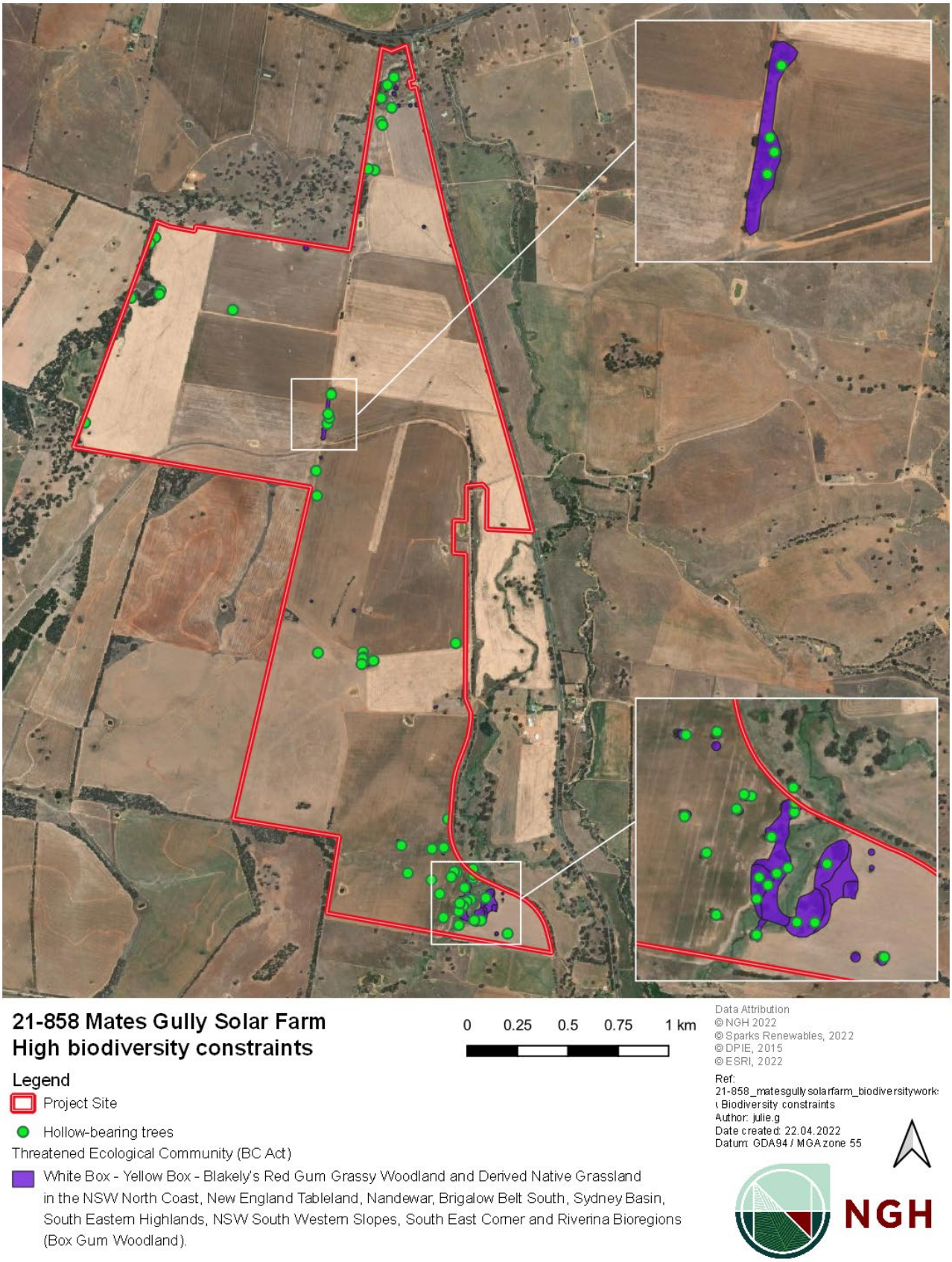

Figure 6-3 High Biodiversity Constraints

6.2.2. Amenity - Visual

Existing environment

The Project Site is located off Mates Gully Road off the Sturt Highway, approximately 5km east of Borambola, NSW and 8km northwest of Tarcutta, NSW.

There are no National Parks or State Forests within 10km of the Project Site. The nearest National Park is Livingstone National Park (31km southwest), and the nearest State Forest is Murraguldrie State Forest (28km south).

Two 132kV overhead transmission lines (lines 990 & 993) pass through the northern portion of the Project Site.

The predominant land-use within the Project Site is agricultural, consisting of paddock trees with an understorey of exotic and cultivated pastures. The LCA (NGH Pty Ltd, 2022) identified “evidence of broad native vegetation modification resulting from agricultural land use within the Project Site, and in some areas, used continuously for cropping and modified pasture grazing prior to and post 1990”. As such the native vegetation remaining is low and sparse, offering little screening potential for infrastructure.

Preliminary assessment

The Project Site slopes gently downwards to the north, offering minimal topographic relief. Therefore, infrastructure will be visible to road users and sensitive receivers around the Project Site.

Topography and potential sensitive receivers within 3.25km of the Project are shown on Figure 6-4 and in Table 6-3. 33 residential sensitive receivers, and two public viewpoints (PV1 and the winery associated with R025), excluding transport/motorist receivers, were identified within 3.25km of the project. Two residential receivers (R001 and R010) are associated receivers due to their location on land/lots involved in the Project. Associated receivers are not assessed as sensitive receivers, and therefore not a visual constraint.

A zone of visual influence analysis was undertaken to establish how much of the Project site may be theoretically visible to receptors based on topography. This does not account for vegetation or infrastructure obstructing views. As per Figure 6-5, the majority of the receivers, approximately 28, within 3.25km of the Project Site may have potential visibility of the project. The RFS shed was the only non-transport PV with line of site to the Project.

No views of the Project Site would be visible from any National Park, Nature Reserve or State Forest. The Project would be visible by commuters along small sections of the Sturt Highway. Generally, these views would be considered of limited duration for passing motorists and would not be considered a high impact.

A preliminary review of vegetation in the landscape included in Table 6-3 indicates that many receivers with theoretical potential views of the Project based on terrain will have their potential views diminished by existing vegetation. Figure 6-5 and Table 6-3 also indicates that the magnitude of the visual impact for a particular receiver is influenced by the distance of the receiver to the Project and the difference in elevation between the receiver and the Project.

Preliminary consultation with potentially affected receivers helps to identify and understand key amenity values which will be used to guide project refinement and minimise potential land and community use conflicts. Thereby ensuring there is social licence to develop the Project.

As per Section 5, community engagement during the scoping phase has focused on long-term relationship building, ensuring the community has a high level of understanding of the Project, and identifying social impacts from the Project early.

Early feedback has concluded that there is a high level of concern around the potential visual impacts of the Project on certain receivers. In response, Spark Renewables has communicated its intent to design the Project to minimise impacts on neighbouring receivers as far as practicable and mitigate impacts through landscape management and vegetation screening at suitable locations.

Proposed further assessment

A detailed visual impact assessment will be undertaken as part of the EIS process in accordance with guidelines. This will include further refinement of potential viewpoints, generation of photomontages, and establishment of visual magnitude and sensitivity for receptors to assess the visual impact, establish performance objectives and identify mitigation strategies.

The EIS will consider the potential for the solar farm to affect local landscape character. Consultation will be undertaken broadly to understand the local values of the area, including visual characteristics valued by the community. Additional engagement with specific affected residences identified as likely to have a view of solar farm infrastructure would be undertaken to identify the nature and significance of impacts and the need for mitigation measures.

Mitigation of low-profile solar farm infrastructure in low relief landscapes is highly feasible. Visual impacts attenuate rapidly with distance in these cases. The focus of mitigation would be on close proximity residences.

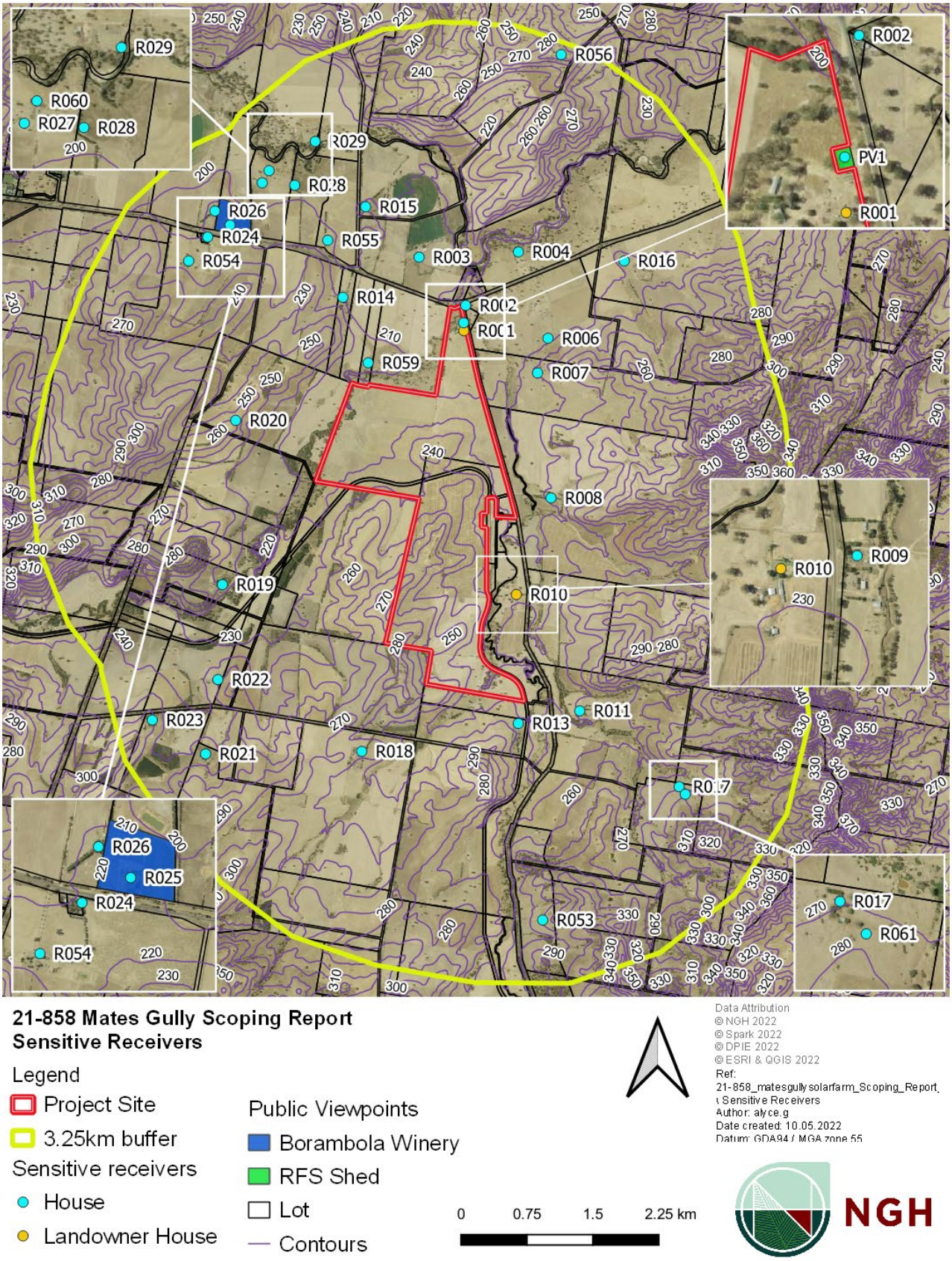

Figure 6-4 Sensitive receivers within 3.25km of the Project Site

Table 6-3 Sensitive receiver distance, altitude, height difference and visibility from the Project Site

Receiver number / ID	Distance from Project site (m)	Altitude AHD (m)	Height difference to Project (Average 260m) (m)	ZVI – Theoretical Visibility Y/N (□pprox.. % site visible)	Considerations
PV1 RFS Shed	16	202	58	Y 75-100%	The RFS shed is surrounded by the Project site on three sides. However, the shed is only utilised during fire and/or training events.
R002	55	200	60	Y 75-100%	R002 is located at a similar elevation to the closest point of the Project Site. Results of the ZVI indicated that most of the site would be visible to this receiver when looking southwest. R002 is already impacted by views of the Sturt Highway. Remnant patches of vegetation between the receiver and the Project site could provide some screening for the development.
R059	268	215	45	Y 75 – 100%	R059 is located at a slightly lower elevation to that observed within the Project Site. Results of the ZVI indicated that most of the site would be visible to this receiver when looking south. The undulating landform and vegetation occurring between the receiver and the Project site would provide natural screening for the development.
R012	332	238	22	Y 75-100%	R012 is located at a similar elevation to the closest point of the Project Site. Results of the ZVI indicated that most of the site would be visible to this receiver when looking northwest. Native vegetation occurring between R012 and the Project Site could provide natural screening from the development.
R013	389	247	13	Y 75-100%	R013 is located at a similar elevation to the closest point of the Project Site. Results of the ZVI indicated that most of the site would be visible to this receiver when looking northwest. Minimal vegetation occurs between R013 and the Project Site.

Receiver number / ID	Distance from Project site (m)	Altitude AHD (m)	Height difference to Project (Average 260m) (m)	ZVI – Theoretical Visibility Y/N (□pprox.. % site visible)	Considerations
R008	440	219	41	Y 75-100%	R008 is located at a similar elevation to the closest point of the Project Site. Results of the ZVI indicated that most of the site would be visible to this receiver when looking north west to south west. Minimal native vegetation occurs as corridors between R008 and the Project Site.
R009	515	224	36	Y 75-100%	R009 is located at a similar elevation to the closest point of the Project Site. Results of the ZVI indicated that most of the site would be visible to this receiver when looking west. Native vegetation occurring between R009 and the Project Site could provide some screening from the development.
R011	643	237	23	Y 75-100%	R011 is located at a similar elevation to the closest point of the Project Site. Results of the ZVI indicated that most of the site would be visible to this receiver when looking northwest. Native vegetation occurring between R011 and the Project Site could provide natural screening from the development.
R003	673	200	60	Y 75-100%	R003 is located at a similar elevation to the closest point of the Project Site. Results of the ZVI indicated that most of the site would be visible to this receiver when looking south. R003 is already impacted by views of the Sturt Highway. Remnant patches of vegetation between the receiver and the Project site could provide some screening for the development.
R007	680	220	40	Y 75-100%	R007 is located at a similar elevation to the closest point of the Project Site. Results of the ZVI analysis indicates that most of the site would be visible to this receiver when looking west and to the south. Limited native vegetation occurs between R007 and the Project Site.

Receiver number / ID	Distance from Project site (m)	Altitude AHD (m)	Height difference to Project (Average 260m) (m)	ZVI – Theoretical Visibility Y/N (□pprox.. % site visible)	Considerations
R006	880	204	56	Y 75-100%	R006 is located on a similar elevation to the closest point of the Project Site. Results of the ZVI indicated that most of the site would be visible to this receiver when looking west and southwest. Native vegetation occurring between R006 and the Project Site could provide some screening from the development.
R004	903	202	58	Y 75-100%	R004 is located at a similar elevation to the closest point of the Project Site. Results of the ZVI indicated that most of the site would be visible to this receiver when looking south to southwest. The undulating landform and vegetation occurring between the receiver and the Project site would provide natural screening for the development.
R014	984	208	52	Y 25-50%	R014 is located at a similar elevation to the closest point of the Project Site. Results of the ZVI indicated that a portion of the site would be visible to this receiver when looking southeast. The undulating landform and vegetation occurring between the receiver and the Project site could provide natural screening for the development.
R020	1097	256	4	Y 75-100%	R020 is located at a similar elevation to the Project Site. Results of the ZVI indicated that most of the site would be visible to this receiver when looking east. Existing vegetation between the receiver and the Project site provides natural screening for the development.
R018	1110	261	1	Y 1-25%	R018 is located at a similar elevation to the Project Site. Results of the ZVI indicated that a small portion of the site would be visible to this receiver when looking northeast. The undulating landform and vegetation occurring between the receiver and the Project

Receiver number / ID	Distance from Project site (m)	Altitude AHD (m)	Height difference to Project (Average 260m) (m)	ZVI – Theoretical Visibility Y/N (□pprox.. % site visible)	Considerations
					site would provide natural screening for the development.
R015	1496	197	63	Y 75-100%	R015 is located at a slightly lower elevation to that observed within the Project Site. Results of the ZVI indicated that most of the site would be visible to this receiver when looking south. The undulating landform and vegetation occurring between the receiver and the Project site would provide natural screening for the development.
R019	1582	238	22	Y 50-75%	R019 is located at a similar elevation to the Project Site. Results of the ZVI indicated that a portion of the site would be visible to this receiver when looking northeast. Existing vegetation between the receiver and the Project site provides natural screening for the development.
R055	1725	195	65	Y 50 – 75%	R055 is located at a lower elevation to that observed within the Project Site. Results of the ZVI indicated that a portion of the site would be visible to this receiver when looking south. The undulating landform and vegetation occurring between the receiver and the Project site would provide natural screening for the development.
R016	1936	214	46	N	Results of the ZVI indicated that this receiver would have no views of the Project Site.
R022	1950	250	10	Y 75-100%	R022 is located at a similar elevation to the Project Site. Results of the ZVI indicated that most of the site may be visible to this receiver when looking northeast. The undulating landform and vegetation occurring between the receiver and the Project site would provide natural screening for the development.

Receiver number / ID	Distance from Project site (m)	Altitude AHD (m)	Height difference to Project (Average 260m) (m)	ZVI – Theoretical Visibility Y/N (□pprox.. % site visible)	Considerations
R017	2011	270	10	Y 50-75%	R017 is located at a similar elevation to the Project Site. Results of the ZVI indicated that a portion of the site would be visible to this receiver when looking northwest. The undulating landform and vegetation occurring between the receiver and the Project site would provide natural screening for the development.
R061	2115	275	15	Y 75 – 100%	R061 is located at a similar elevation to the Project Site. Results of the ZVI indicated that most of the site would be visible to this receiver when looking northwest. The undulating landform and vegetation occurring between the receiver and the Project site would provide natural screening for the development.
R028	2248	195	65	Y 50-75%	R028 is located at a lower elevation to that observed within the Project Site. Results of the ZVI indicated that a portion of the site would be visible to this receiver when looking southeast. The undulating landform and vegetation occurring between the receiver and the Project site would provide natural screening for the development.
R025 / PV2 (Winery)	2268	224	36	N	Results of the ZVI indicated that this receiver and on site winery, considered a potential PV, would have no views of the Project Site.
R054	2319	212	48	N	Results of the ZVI indicated that this receiver would have no views of the Project Site.
R024	2334	208	52	N	Results of the ZVI indicated that this receiver would have no views of the Project Site.
R021	2401	257	3	Y 1-25%	R021 is located at a similar elevation to the Project Site. Results of the ZVI indicated that a small portion of the Project Site may be visible to this receiver when looking northeast. The undulating landform and vegetation occurring between the receiver and the Project

Receiver number / ID	Distance from Project site (m)	Altitude AHD (m)	Height difference to Project (Average 260m) (m)	ZVI – Theoretical Visibility Y/N (□pprox.. % site visible)	Considerations
					site would provide natural screening for the development.
R029	2433	195	65	Y 75-100%	R029 is located at a lower elevation to that observed within the Project Site. Results of the ZVI indicated that most of the site would be visible to this receiver when looking southeast. The undulating landform and vegetation occurring between the receiver and the Project site would provide natural screening for the development.
R053	2490	273	13	Y 1-25%	R053 is located at a slightly elevated position in comparison to the Project Site. Results of the ZVI indicated that a small portion of the site may be visible to this receiver when looking northwest. Vegetation occurring between the receiver and the Project site would provide natural screening for the development.
R027	2498	196	64	N	Results of the ZVI indicated that this receiver would have no views of the Project Site.
R026	2502	211	49	Y 1-25%	R026 is located at a slightly lower elevation than the Project Site. Results of the ZVI indicated that a small portion of the site would be visible to this receiver when looking northeast. The undulating landform and vegetation occurring between the receiver and the Project site would provide natural screening for the development.
R060	2800	194	66	Y 1- 25%	R060 is located at a slightly lower elevation to that observed within the Project Site. Results of the ZVI indicated that a small portion of the site may be visible to this receiver when looking northwest. Vegetation occurring between the receiver and the Project site would provide natural screening for the development.
R023	2853	262	2	Y	R023 is located at a similar elevation to the Project Site.

Receiver number / ID	Distance from Project site (m)	Altitude AHD (m)	Height difference to Project (Average 260m) (m)	ZVI – Theoretical Visibility Y/N (□pprox.. % site visible)	Considerations
				75-100%	Results of the ZVI indicated that most of the site may be visible to this receiver when looking northeast. The undulating landform and vegetation occurring between the receiver and the Project site would provide natural screening for the development.
R056	3087	290	30	Y 75 – 100%	R056 is located at a slightly higher elevation to that observed within the Project Site. Results of the ZVI indicated that most of the site would be visible to this receiver when looking southwest. The undulating landform and vegetation occurring between the receiver and the Project site would provide natural screening for the development.

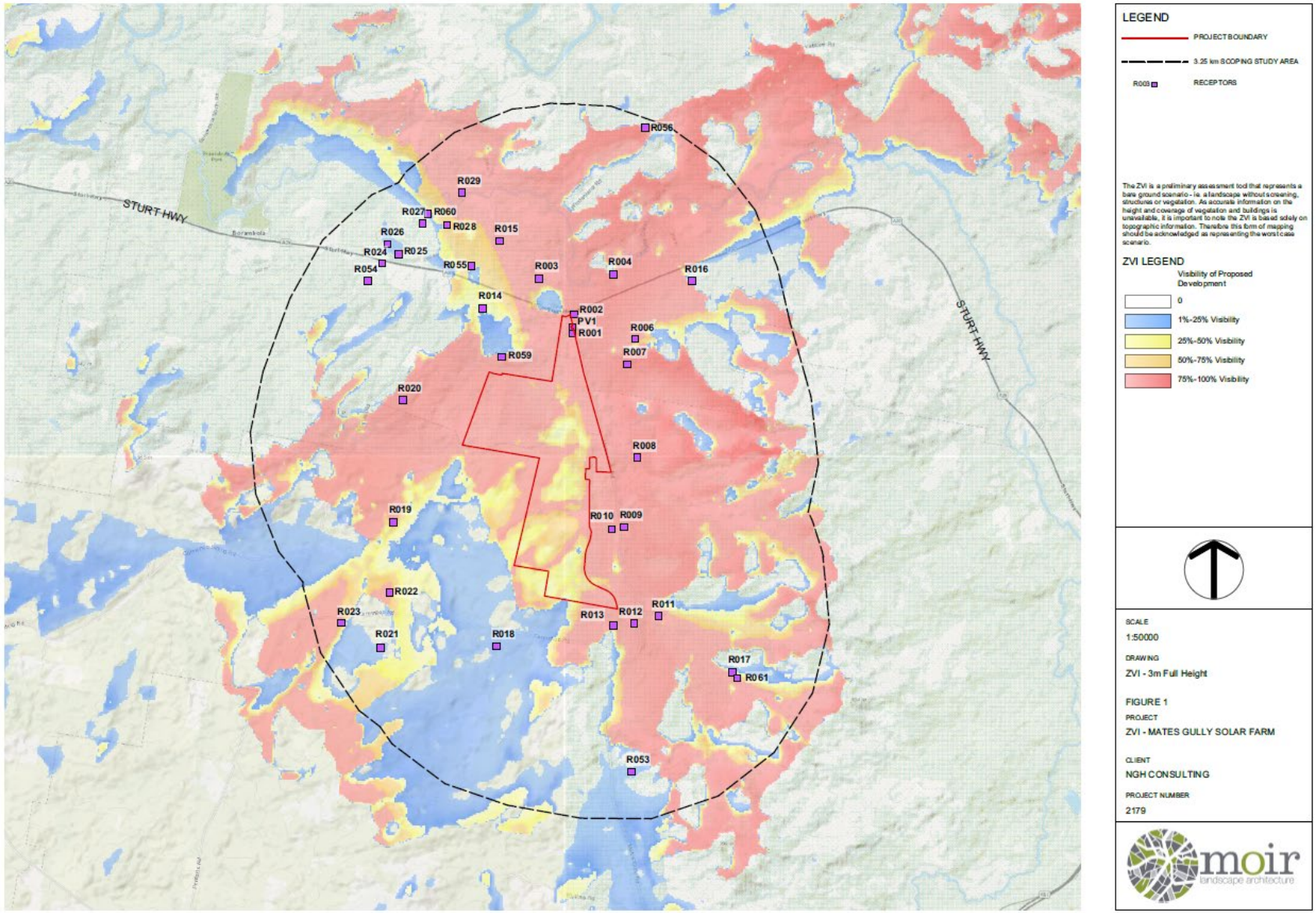

Figure 6-5 Zone of visual influence

6.2.3. Amenity - Noise

Existing Environment

The Project Site is located within a rural setting, subject to regular background noise impacts including farming equipment, and road traffic from the Sturt Highway adjacent to the Project Site. There are 34 non associated sensitive receivers within 3.25km of the Project Site (refer to Figure 6-4).

As described in Section 6.2.2, the Project Site and locality comprise a low relief landscape, therefore limited noise barriers in the form of topography and significant vegetation occur to mitigate noise impacts. Construction vehicles and machinery during the construction phase would be most relevant in contributing to noise and vibration impacts. During the operation of the solar farm, noise levels would be at a much lower level. Low levels of noise would be generated from the inverters, solar tracking system, substation and any maintenance works undertaken at the site.

Proposed further assessment

A construction and operational noise and vibration assessment would be undertaken as part of the EIS to assess potential noise impacts for affected residents. The report would include an assessment of road traffic noise as a qualitative assessment of offsite traffic movements inclusive of a review of existing and future traffic movements for the Project. The assessment would be undertaken in accordance with the Interim Construction Noise Guideline (Department of Environment & Climate Change, 2009), NSW Noise Policy for Industry (NSW Environment Protection Authority, 2017), Assessing Vibration: A Technical Guideline (Department of Environment and Conservation NSW, 2006) and NSW 'Road Noise Policy' (Department of Environment, Climat Change and Water, 2011).

6.2.4. Land use - Compatibility

Existing environment

Site selection for the Project has been examined in Section 2.3.2 and Section 3.

Existing land uses in the Project Site (refer Figure 6-6) according to the NSW Land Use data layer (OEH, 2012) include:

- 3.30 Cropping
- 2.1.0 Grazing native vegetation
- 5.4.0 Residential and farm infrastructure
- 6.3.0 River.

Land uses can be seen to be largely comprised of agricultural activities. Cropping involves relatively high levels of disturbance, often impacting visual and natural and cultural values.

Land use within the Project reflects adjacent and surrounding land uses in the locality. There are small areas of Managed Resource Protection adjacent to the Project reflecting presence of protected remnant vegetation.

As detailed within Section 2.1.2, the Project Site is zoned as RU1 (Primary Production) under the Wagga LEP 2010 (Figure 2-2). Electricity generating works are not listed as prohibited in this zone and are therefore permitted with consent. Further the TISEPP permits energy generating works within the prescribed RU1 zone.

The site is mapped within the Land and Soil Capability (LSC) Assessment Scheme state-wide mapping as 4 'Moderate capability land' and 5 'Moderate – low capability land (refer Figure 6-7).

- The areas mapped as 4, moderate capability land covers most of the Project Site. LSC class 4 land has moderate to high limitations for high-impact land uses. It typically restricts land management options for regular high-impact land uses such as cropping, high-intensity grazing and horticulture. Typically, limitations can only be managed by specialised management practices with a high level of knowledge, expertise, inputs, investment and technology
- Areas mapped as 5, moderate – low capability land cover small portions to the north and east of the Project Site. LSC class 5 land has high limitations for high-impact land uses and typically restricts land use to grazing, some horticulture (orchards), forestry and nature conservation. The limitations need to be carefully managed to prevent long-term degradation.

It is evident by existing cropping practices on site that typical limitations with class 4 and 5 land are absent or are being managed to allow for the current intensity level of agriculture.

No known mineral occurrences occur within the Project Site.

The preferred project access will be off Mates Gully Road in the vicinity of the substation, BESS and maintenance building as shown in Figure 3-1.

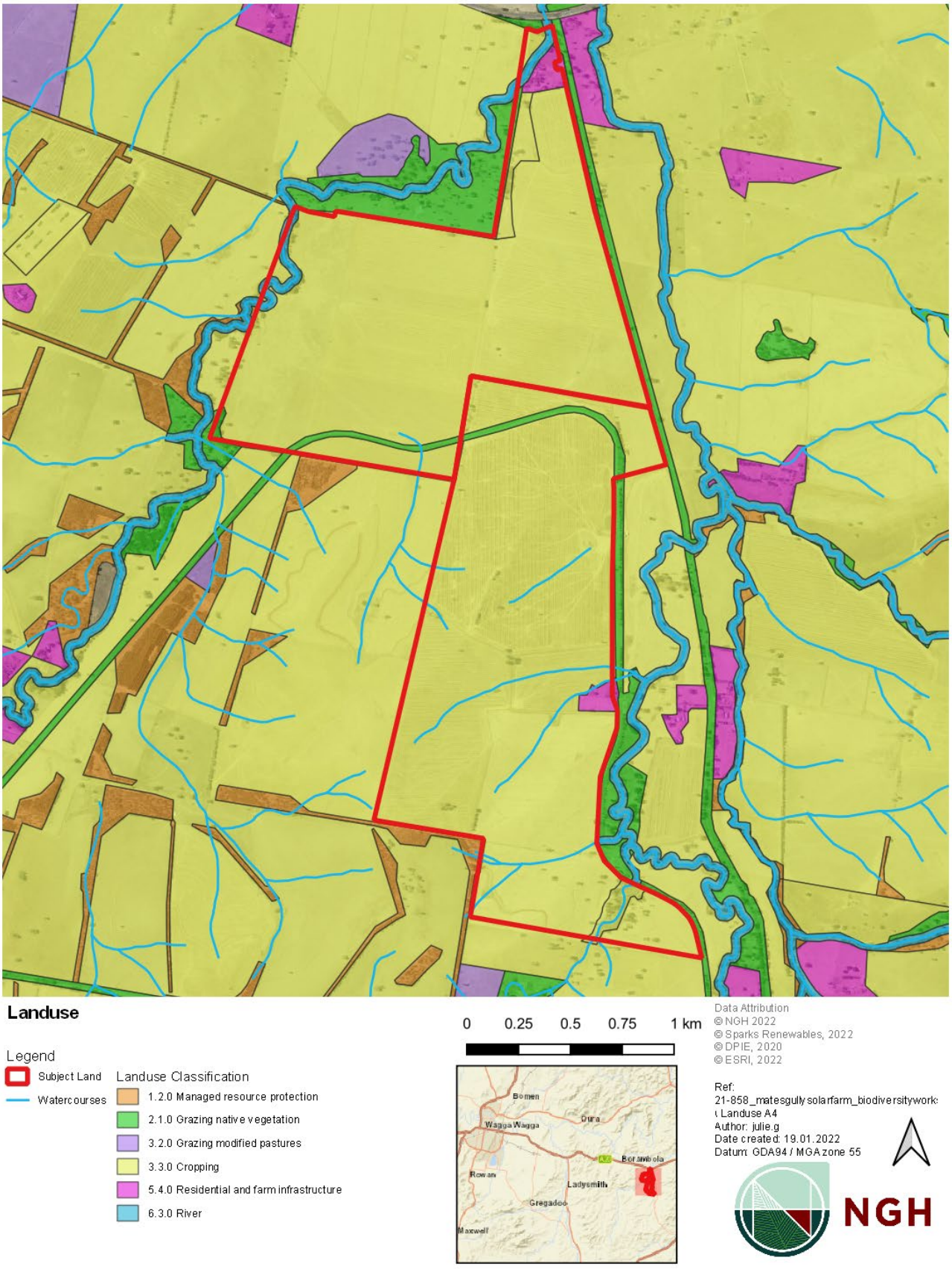

Figure 6-6 Land use classification

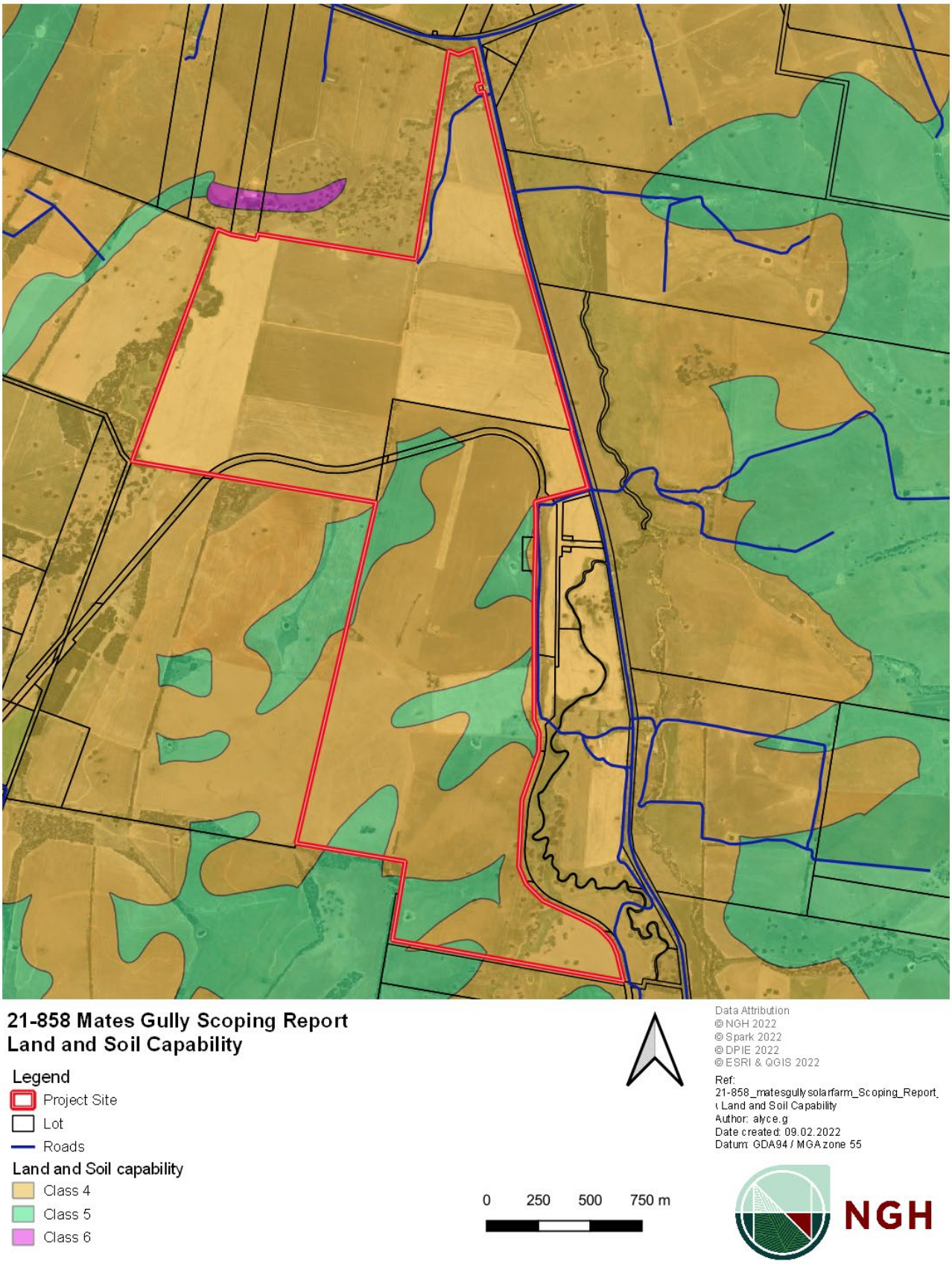

Figure 6-7 Land and soil capability classes

Preliminary assessment

It is anticipated the Project may reduce the agricultural output of the site whilst operational, however the inherent agricultural capability of the land and soils would not be affected by the project due to limited disturbance of the land to construct and operate the Project. The Project Site would be fully rehabilitated to support continuation of existing agricultural land uses following decommissioning.

It is also anticipated that livestock grazing will continue throughout operation of the solar farm, as a key land management tool as well as to maintain agricultural production. The panel spacing and height will be designed and suitable for continued grazing in addition to setting up systems to facilitate grazing such as cells (fencing) and water infrastructure.

During operation the Project would provide an ongoing drought proof income stream for host landowners, with flow on benefits for the local economy.

Construction and operation of the project is not expected to restrict agricultural productivity of neighbouring properties and throughout the region.

Should landscaping and vegetative screening be established as a mitigation measure during detailed assessment, this would be commensurate with adjacent and surrounding areas of remnant natural vegetation and provide for fauna refuge and connectivity as well as visual mitigation.

Proposed further assessment

Detailed assessment during the EIS will establish the likely change in agricultural and productivity on the Project Site. The impact on agricultural production in the locality and region would be assessed in the EIS as part of a Land Use Conflict Risk Assessment (LUCRA) and generally in accordance with an agricultural impact assessment (Level 2) as per the *Draft Large-Scale Solar Energy Guidelines for State Significant Development* (NSW Government, 2021) .

6.2.5. Heritage - Aboriginal

Existing environment

The Project Site exists on the traditional lands of the Wiradjuri people on the border of the Wirudjuri language group and the Baraba-Baraba language group.

Austral Archaeology Pty Ltd (“Austral”) was engaged by Spark Renewables to provide specialist heritage sensitivity advice (Austral 2021a) as per Appendix E. Austral developed a predictive model and conducted background research which determined Aboriginal heritage sites are likely to be present within the Project Site.

An Aboriginal Heritage Information Management System (AHIMS) database search identified 95 Aboriginal archaeological sites within a 20km search area centred on the Project Site (Austral 2021a), There is a cluster of registered Modified Trees and an Ochre Quarry located within 500m of the northern extent of the Project Site (see Figure 6-8 below and Figure 3 of Appendix E).

No AHIMS sites are recorded within the Project Site; however, this is likely a result of the Project Site never having be subject to heritage survey. The proposal area is intersected by Coreinbob Creek, and located adjacent to Mates Creek and Tarcutta Creek, which are likely to retain higher potential to preserve items of Aboriginal heritage significance. The predictive model (Austral 2021a) indicates that:

- The most common site types in the region include modified trees and artefacts (isolated or scattered)
- Less common sites which could also occur include Potential Archaeological Deposits (PADs)
- The ochre quarry north of the study area is an outlier in the model and it is not expected that another would occur in the area

- It is unlikely that art sites, grinding grooves, stone quarries or stone arrangements are present in the study area due to historic disturbance
- Aboriginal heritage sites are most likely to occur between 100 metres from water. However, the site type has a further impact on this distance: Artefact sites are most likely to occur within 200 metres from water
- Modified trees are most likely to occur within 100 metres from water
- Most heritage sites will occur on the Murrumbidgee - Tarcutta Channels and Floodplains soil.

Issues for consideration

Further to SSD assessment requirements; as the predictive model and background research (Austral 2021a) determine it is likely for Aboriginal heritage sites to be present within the study area, an Aboriginal Cultural Heritage Assessment (ACHA) will be undertaken to investigate the potential impacts to Aboriginal cultural heritage; this should be undertaken in accordance with the Code of Practice for the Archaeological Investigation of Aboriginal objects in NSW (DECCW 2010).

Consultation with the local Aboriginal community, in accordance with the Aboriginal Cultural Heritage Consultation Requirements for proponents (DECCW 2010), should be undertaken as part of the ACHA. Spark Renewables are undertaking recommended early commencement of consultation to ensure the Traditional Owners and custodians of the land to have input into the early stages of the project.

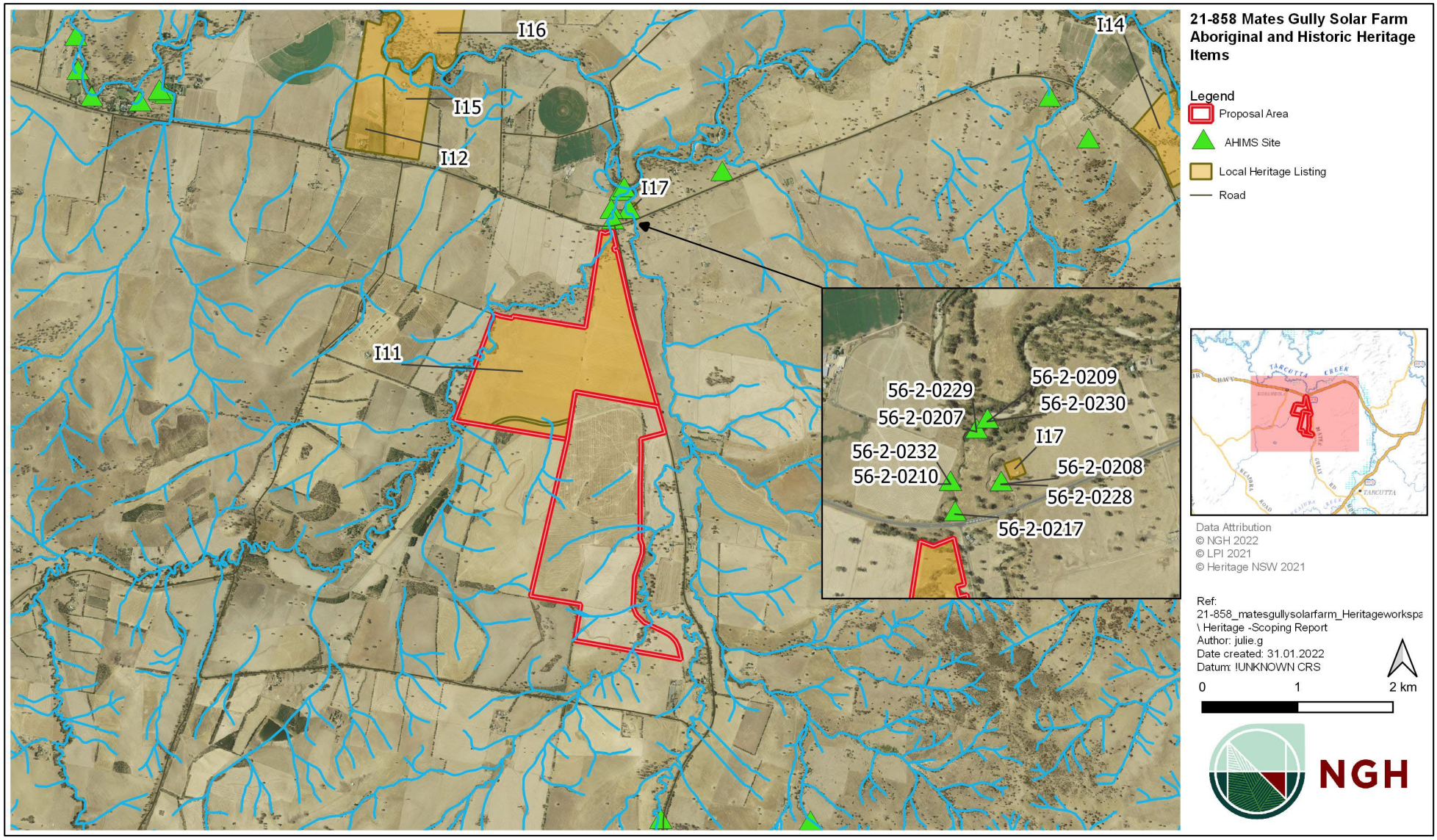

Figure 6-8 Historic heritage and AHIMS sites and places recorded within and near the Project Site

6.2.6. Heritage – Historic

Existing Environment

Austral Archaeology Pty Ltd were engaged by Spark Renewables to provide a Preliminary Historical Heritage Assessment (PHHA) for the Project, as provided in Appendix F. The PHHA has identified that items of built heritage containing heritage values and areas of archaeological potential are present within the Project Site.

The Project Site includes areas listed in Part 1 of Schedule 5 of the Wagga LEP as 'Tarra Wingee and Outbuildings' (item no. I11), which is physically located in the northern section of the Project Site between Coreinbob Creek and Mates Gully Road as shown in Figure 6-8. No part of the Project Site is recorded on the NSW State Heritage Register (SHR). Another Wagga LEP listed heritage item The Tennis Courts and Clubhouse (item no. I17) is located to the north of the Project Site.

Tarra Wingee and the Project Site was subdivided from the Borambola Run in 1910. Borumbola Run was renamed from Tarcullah Run which was historically taken up in the 1830s around the time of the establishment of the township of Wagga Wagga in 1849.

Austral note that at present, there are 3 main structures and a sheep yard located in the study area, and the remaining land is used for pastoral activities. The Tarra Wingee homestead was likely built between the turn of the century and 1910.

Around 1917 the NSW Government purchased land for a railway line between Wagga Wagga and Tumburumba. A section of the railway between Wagga Wagga and Humula passes through the Project site and was constructed and opened in 1917. The railway line was closed in 1975.

Preliminary assessment

The heritage listing for the Tarra Wingee homestead and outbuildings extends to the entire Lot 1 DP1088773, however the Project Site and concept design excludes the homestead and outbuildings building.

The PHHA established that areas of high archaeological sensitivity exist in the Project Site. Austral establish that based on the detailed background history, the following general predictive statements can be made:

- There is **high** potential for archaeological remains to be present which relate to the use of the study area as part of the Borambola run, which will be associated with sheep and other agricultural pursuits. This is most likely to be present in the form of dams, and remains of holding pens and fence lines.
- There is **high** potential for archaeological remains to be present which relate to the train line and associated infrastructure such as the station which was constructed within the study area.
- There is **high** potential for archaeological remains to be present which relate to the Tarra Wingee Homestead and outbuildings, this may include rubbish collection areas.

Further assessment

As the PHHA has identified that items of built heritage containing heritage values and areas of archaeological potential are present within the study area, it will be necessary to prepare a full Historical Heritage Assessment (HHA) in the event that the Project will impact on any of the items or areas of archaeological potential shown on Figure 11 of the PHHA. The HAA will need to include a Statement of Heritage Impact (SOHI), and full Assessment of Significance.

If impacts to heritage items cannot be avoided, the HHA will be required to include management recommendations in order to mitigate against potential harm. Mitigation measures would be determined in accordance with the following guidelines:

- NSW Heritage Division (formerly Heritage Office) (Office of Environment and Heritage) publication Statements of Heritage Impact (2002)
- NSW Heritage Division (formerly Heritage Office) (Office of Environment and Heritage) publication Assessing Heritage Significance (2001), and
- Australia's ICOMOS Burra Charter. The Charter sets the standard of practice for providing advice or making decisions about of undertaking works at places of heritage or cultural significance, including owners, managers and custodians (ICOMOS 1999).

6.2.7. Social

Approach

A preliminary social impact analysis has been undertaken that includes social impact scoping and a high-level overview of social conditions. It is intended to provide initial insight into the Project's social context and its likely social impacts. Further in-depth assessment will be undertaken as part of the Social Impact Assessment within the EIS phase.

The preliminary analysis comprises of a desk-top analysis, supplemented by project information provided by the Proponent (including some initial engagement findings), internet searches of available information relating to the project and the broader socio-economic context, comparative studies, and data obtained from publicly available government websites.

This analysis has been undertaken in line with DPIE's Social Impact Assessment Guidelines (DPIE, 2021) and accompanying Technical Supplement (DPIE, 2021). As such, potential impacts and opportunities have been evaluated across the following eight domains: way of life, community, accessibility, culture, health and wellbeing, surroundings, livelihoods and decision-making systems.

In this assessment, direct, indirect and cumulative impacts have been considered. Through this process, judgements have been made regarding the type and level of further assessment that will be undertaken within the Social Impact Assessment for each potential impact and opportunity. Key factors that have informed this judgement include the extent of cumulative impact and the degree of material social impact.

Existing environment

The social locality for this Project is the Wagga Wagga LGA. The Project is located approximately 8km north-west of the township of Tarcutta and 30km east of the city of Wagga Wagga. It is situated on the traditional lands of the Wiradjuri people.

Utility scale renewable energy generation is an emerging sector within the broader Murray-Riverina region, and this Project is proposed amid much renewable energy development activity in the regional area.

The nearby small rural township of Tarcutta is located just off the Hume Highway between Gundagai and Holbrook. The town serves its broader farming community, and it's also a key trucking changeover point between Sydney and Melbourne.

Wagga Wagga is a large regional city, located on the Sturt Highway, and on the banks of the Murrumbidgee River. It is a key service, transport, and education hub for the Riverina region, and is well connected by road, rail and air. Presently, Wagga Wagga is undergoing significant economic development through the boom in the renewables sector and through government investment in initiatives such as the Inland Rail Project and the Wagga Wagga Special Activation Precinct.

Wagga Wagga LGA has a population of 62,385 people (ABS, 2016), and significant population growth is expected over the coming years, driven by growth in older age groups (DPIE, 2019). The median age of the LGA is 35 years, which is slightly younger than the NSW average (38). A key influencing factor in this is the presence of the student population of Charles Sturt University. The LGA has a considerably higher proportion of Aboriginal and Torres Strait Islander residents than does the NSW average.

Wagga Wagga is a major service centre for the broader regional area. Top industries of employment are defence (centred on Kapooka and the RAAF Base Wagga), followed by hospitals and higher education (ABS, 2016).

The median weekly household income in the Wagga Wagga LGA is $1,354, which is slightly lower than the NSW average, and unemployment is low (5.5%, as compared to 6.3% for NSW) (ABS, 2016). There are clusters of relative disadvantage in Wagga Wagga, in particular in the south and western suburbs of the city; however Wagga Wagga LGA is relatively advantaged as a whole (ABS, 2018).

Median weekly rents in Wagga Wagga at the 2016 Census were below the NSW average ($265 as compared to $380) (ABS, 2016). The rental market in the broader Riverina region is tight; the regional vacancy rate in December 2021 was 0.6%, after declining steadily from a high of 1.0% in January 2021 (REINSW, 2021). Summary demographic and industry data for Wagga Wagga LGA and NSW is presented in Table 6-4.

Table 6-4 Key demographic and industry data for the Wagga Wagga LGA and NSW (ABS, 2016; unless otherwise indicated)

Measure	Wagga Wagga LGA	NSW
Population (no.)*	65,770	8,167,532
Median age (years)	35	38
Aboriginal and Torres Strait Islander (%)	5.6	2.9
Largest occupation of employment (%)	Professionals (19.7) Technicians & trade workers (15.6) Community & personal service workers (13.0)	Professionals (23.6) Clerical & administrative workers (13.8) Managers (13.5)
Top 3 industries of employment (%)	Defence (4.6) Hospitals (4.5) Higher education (3.1)	Hospitals (3.5) Cafes & restaurants (2.4) Supermarkets / grocery stores (2.2)
Median weekly household income ($)	1,354	1,486
Unemployment rate (%)	5.5	6.3
Relative socio-economic advantage/disadvantage (quintile)**	4	n/a

*Estimated resident population (.idcommunity, 2020a, 2020b)

**SEIFA Index of Relative Socio-economic Advantage and Disadvantage (ABS, 2018) (quintile index where 1 represents greater relative disadvantage and 5 represents greater relative advantage).

Preliminary social impact scoping and need for further assessment

A preliminary social impact scoping exercise has been undertaken to gain initial insight into the likely social impacts and benefits of the Project. Social impact scoping involved an initial desktop identification and preliminary assessment of the likely social impacts of the project.

A summary of findings from this analysis is seen at Table 6-5 below, which shows the key social impacts and benefits that will be further assessed in more detail within the Social Impact Assessment in the EIS phase (refer to Appendix E for the full Preliminary Social Impact Scoping Worksheet).

Table 6-5 Potential social impacts and benefits to be further assessed in the EIS phase

Project phase & activity	Potential social impacts	Intended level of assessment	Justification
Pre-construction - initial project engagement within the community	• Potential negative impacts on community cohesion	Standard	Available evidence (including engagement findings to date) suggests that this could be applicable for this project. Cumulative impacts may also apply.
	• Stress and anxiety in people who oppose the project and/or are directly impacted	Standard	Available evidence (including engagement findings to date) suggests that this could be applicable for this project. Cumulative impacts may also apply.
	• Real or perceived lack of inclusion or ability to influence decision-making and planning processes	Minor	No evidence of this in initial scan of available project information (including engagement findings to date).
Construction - project demand for labour, goods and services	• Employment and labour impacts	Detailed	This has the potential to be a key benefit of the project
	• Increase in economic activity within the local and regional area	Detailed	This has the potential to be a key benefit of the project
Construction - influx of construction workers	• Further constrained availability of rental housing, and tourist accommodation	Detailed	Cumulative impacts may apply, and housing availability is a key regional issue, particularly for the town of Wagga Wagga
	• Increased demand for social services and infrastructure	Minor	Given short duration of the construction phase, this is unlikely to have significant impacts, however, cumulative impacts may apply

Project phase & activity	Potential social impacts	Intended level of assessment	Justification
	• Changing sense of place and community	Standard	Available evidence (including engagement findings to date) suggests that this could be applicable for this project, and cumulative impacts may also apply
Construction - intensive construction activity at the Project Site	• Amenity impacts during construction (e.g., noise, traffic, dust)	Minor	Available evidence (including engagement findings to date) suggests that these may be issues of concern; however, these impacts will be fully explored in other technical documents within the EIS
Operational - land being used for the siting of electricity infrastructure	• Changes in landscape character	Standard	Available evidence (including engagement findings to date) suggests that this could be applicable for this project, and cumulative impacts may also apply
	• Loss of agricultural land	Standard	Available evidence (including engagement findings to date) suggests that this could be applicable for this project, and cumulative impacts may also apply
	• Visual impacts relating to glare and reflectivity	Standard	Available evidence (including engagement findings to date) suggests that this could be applicable for this project, and cumulative impacts may also apply
	• Improvements to the reliability and security of the electricity network	Minor	Potential for this to be a key benefit of this project

To gain a more comprehensive understanding of these potential social impacts and benefits, a Social Impact Assessment will be prepared as part of the EIS, as per the Social Impact Assessment Guideline for State Significant Projects (DPIE, 2021).

The Social Impact Assessment will also examine any other social issues perceived by the community to be of concern that are raised during the consultation phase of the SIA. Cumulative impacts of other proposed developments in the area will also be considered. Where significant impacts are found, mitigation and enhancement measures will be developed, and expected residual impacts post-application of these measures will be described.

6.2.8. Cumulative impacts

Methodology

Cumulative impacts relate to the combined potential effects of different impact areas of the Project as well as the potential interaction with other Projects in the local area. They may occur concurrently or sequentially. The relevant cumulative impacts are those associated with other known or foreseeable developments occurring in proximity to the Project.

Preliminary Assessment

Major Projects in the Wagga Wagga LGA listed on the Major Projects Register and their current status as of 1 May 2022, are provided in Table 6-6.

Table 6-6 Major Projects in Wagga Wagga LGA.

Project	Stage	Status	Distance from Project
HumeLink		Prepare EIS	11.5km
Inland Rail – Albury to Illabo		Prepare EIS	27.6km
Uranquinty Solar Farm		Prepare EIS	40.3km
Project EnergyConnect (NSW – Eastern Section)		Response to Submissions	24km
Gregadoo Solar Farm	Modification	Determination – 05/03/2021	24.5km
Uranquinty Gas-fired Power Station	Modification 10	Determination – 28/05/2013	40km
Wagga Wagga Treatment Plant	Modification 1	Determination – 25/10/2017	29km
Wagga Wagga Gasworks Remediation	Modification 1	Determination – 28/02/203	27.4km
Wagga Wagga Hospital – Stage 3		Determination – 09/06/2021	28.5km
Young – Wagga Gas Pipeline – Stage 2		Determination – 02/04/2013	NA
Wagga Wagga Quarry		Determination – 22/11/2011	34km
New Public School, Estella Road, Wagga Wagga	Modification 1	Determination – 02/10/2020	31km

Project	Stage	Status	Distance from Project
Teys (formerly Cargill) Beef Abattoir	Modification 12	Preparation	27.4km
Bomen Solar Farm		Determination – 23/08/2019	25km
Integrated Oilseed Processing Plant	Modification 5	Withdrawn	26.1km
Hume Highway – Tarcutta Bypass: Ladysmith Road Quarry	Modification 1	Withdrawn	44.2km
Enirgi Battery Recycling Facility		Determination – 20/02/2019	25km

Searches for nearby Projects was limited to the Major Projects Register as these Projects are generally of larger scale than Projects captured under council development applications.

It is understood that the Australian Government has also announced significant upgrades to the Wagga Wagga RAAF Base off the Sturt Highway, approx. 18km west of the Project Site.

The closest Project is the HumeLink project as proposed by Transgrid, comprising of new transmission line circuits, substation works and ancillary development. The closest section of HumeLink to MGSF is the new transmission line circuit between the existing Wagga 330 kV substation and new Gugaa 500 kV substation (approximately 11.5km south west of the Project).

Potential cumulative impacts of overlapping construction periods are primarily associated with traffic impacts, pressures on local facilities, goods and services and vegetation clearing. The Sturt Highway would be used as a major haulage route for major Projects in the Riverina region.

Proposed Further Assessment

Potential cumulative impacts would be assessed within the EIS in line with the Cumulative Impact Assessment Guidelines for State Significant Projects, 2021, (NSW Department of Planning, Industry and Environment, 2021).

The timing of works associated with the proposed developments nearby would be monitored throughout the EIS stage to ensure appropriate mitigation measures are implemented, particularly in relation to construction traffic and pressure on local services and facilities within Borambola and Wagga Wagga.

6.3. Other environmental issues

Table 6-7 Additional environment issues

Issue	Existing environment	Potential impacts	Investigation strategies
Access - traffic	The Project is approximately: • 350km from Sydney • 137km from Canberra The Sturt Highway which provides a link to the Hume Highway and the east coast of Australia, passes by the Project Site. According to the Transport for NSW 'Combined Higher Mass Limits (HML) and Restricted Access Vehicle (RAV) Ma (TfNSW, 2020), the Sturt Highway and Hume Highway are approved for 19 metres, 23 metres and 25/26 metre B-double routes. They are also approved for 4.6m high vehicles.	TfNSW's Traffic Volume Viewer (TfNSW, 2021) shows the Hume Highway 340m south of Annie Pyers Drive, Gundagai, experienced an average of 9,241 vehicles daily in 2021. No traffic counters are present along the Sturt Highway between Wagga Wagga and its connection with the Hume Highway. Traffic volumes during certain times of the year, such as school holidays, harvest and sowing, would likely experience an increase. Heavy vehicles would be required for transportation of solar farm infrastructure. Construction staff would be accessing the site via light vehicles and shuttle buses. There are approximately 200 staff expected to be working on the construction of the solar farm at peak construction periods and it is expected that shuttle buses would move the majority of staff members in the morning and night. During operation, up to 5 staff members travelling in light vehicles in the morning and night is anticipated. The preferred project access will be off Mates Gully Road in the vicinity of the substation, BESS and maintenance building as shown in	Intersection upgrades, surface upgrades/sealing and other improvements to existing roads may be required to safely access the site. New access roads may also be required. An assessment of site access will be undertaken as part of the EIS to determine if intersection or road upgrades are necessary to meet Council and TfNSW guidelines. Internal access roads would be established within the Project Site to facilitate movement around the site during construction and to allow for ongoing maintenance during operation. Internal access roads would be between four metres and six metres wide and comprise of a gravel surface. Management of traffic, for safety as well as road pavement conditions would be required. The access options would be further investigated during the preparation of the EIS. Construction traffic impacts would be considered in the EIS and take into consideration existing traffic volumes and any requirements from the roads' authority.

Issue	Existing environment	Potential impacts	Investigation strategies
		Figure 3-1	The mitigation measures would require the preparation of a Traffic Management Plan and the confirmation of haulage routes.
Land - Soil	As indicated from the background searches (Appendix C): • The geology of the Project Site is dominated by Quaternary colluvium deposits, characterised by polymictic conglomerates with a medium-to very coarse-grained sand matrix; interspersed with unconsolidated clayey and silty red-brown (aeolian) sand (NSW Government, 2021). Geology in the northern portion of the Project Site consists of alluvial ancient riverbanks and residual deposits, which includes humic (±) micaceous silty clay, silt, clay and fluvially deposited fine- to medium grained quartz-lithic sand and polymictic gravel (NSW Government, 2021). Weakly consolidated regolithic residuum such as saprolite also occurs here. Geology within the southern portion of the Project Site incorporates the early Ordovician formation, including brown and buff to grey, thin-to thick-bedded, fine-to coarse-grained mica-quartz (±feldspar) sandstone, interbedded with laminated siltstone and mudstone (NSW Government, 2021). • Soils within the Project Site consists of	The Project would involve earthworks and ground disturbance, as well as piling. This would be limited to the Project Site, access, and transmission lines. Impacts during construction would include: • Ground disturbance and vegetation removal, which have the potential to cause soil erosion and sedimentation. • Establishment of internal roads and a hardstand. Minimal disturbance would be required for other infrastructure due to the use of piling for the panel infrastructure. Soil constraints are considered manageable. Factors that will be considered in the EIS include: • Means to manage erosion during construction/ operation / decommissioning • Access in wet conditions • Benchmark data for rehabilitation following construction and decommissioning	As most solar farm infrastructure is typically located on land with a slope of less than 10%, erosion and sedimentation would be manageable. Rehabilitation of groundcover following construction, groundcover management during operation and restoration of the land capability following decommissioning would be recommended in the EIS. Rehabilitation would be with reference to base line soil testing to guide any remedial management actions that may impact maintaining groundcover during operation or rehabilitation of disturbed areas during decommissioning.

Issue	Existing environment	Potential impacts	Investigation strategies
	the Red Podzolic and Red Earth great soil groups (GSG). The Project Site contains bleached red chromosols, stratic rudosols, and dark brown basic paralithic leptic rudosols (NSW Government, 2021). • Erosion is considered to be moderate. Streambank erosion within the Project Site is evident; however, it is partly stabilised (Wild, 2003) • A soil profile, taken at the Gundamain silage pit located adjacent to the Project Site, described the overall salinity hazard as moderate (Wild, 2003). No salting was evident; soils were observed to be slowly permeable and imperfectly drained (Wild, 2003). Conditions are likely to be similar within the Project Site. • The ASRIS Acid Sulphate Soils (ASS) Reference Sites and National Atlas indicates that there is an 'Extremely Low Probability' of ASS occurring within the Project Site (CSIRO, 2014). • Local relief at the Project Site is < 9m (2%) (NSW Government, 2022).		
Land - capability	The key land use within the Project Site is for agriculture. As per Section 6.2.4 and Figure 6-7, LSC classes 4 and 5 mapped for the site are not typically highly productive and have limitations for cultivation. However, the site	The final footprint of the development would disturb approximately 300 ha of land. During operations, some agricultural activities, such as grazing, would continue. This would	The impact on agricultural production on the site and adjoining agricultural land would be assessed in the EIS as part of a Land Use Conflict Risk Assessment (LUCRA) and generally in accordance with a reduced

Issue	Existing environment	Potential impacts	Investigation strategies
	has supported historical and current cropping agricultural activities. The Project Site does not contain any land mapped as Strategic Agricultural Land, including Biophysical, Equine or Viticulture. See Figure 2-2 for land use zoning of the Project Site and wider area.	provide an additional income stream to the landowners, diversifying land use and income streams. This is particularly relevant in a context of projected drought and climate change.	agricultural impact assessment (Level 2) as per the Draft Large-Scale Solar Energy Guidelines for State Significant Development (NSW Government, 2021) . The Biodiversity Assessment would include a landscape scale assessment and consideration of impacts to fauna movement corridors as a result of the Project.
Hazard – fire and contamination (Battery Storage)	A 100MW BESS, AC or DC-coupled, may be installed as a part of this Project.	Batteries pose a potential fire or contamination risk to the Project Site and surrounds.	An assessment of hazard and risk would be assessed in the EIS as per Chapter 3 Hazardous and offensive development of State Environmental Planning Policy (Resilience and Hazards) 2021 (formerly SEPP 33 – Hazardous and Offensive Development). A Preliminary Hazards Assessment will be undertaken as part of the EIS.
Hazard – existing contamination	Agricultural properties can contain buried contaminants and farming chemicals may have been applied on the land in the past. Railway easements can also contain buried contaminants (i.e., treated sleepers, lead and asbestos). Soils within agricultural land can also contain buried contaminants (e.g., herbicides, heavy metals) that may be encountered during excavation. However, the Project Site does not appear on the List of	There is potential for exposure and mobilisation of contamination during earthworks from the existing railway infrastructure and previous rail use as well as from agricultural contaminants.	Contamination can be investigated during the EIS stage. Management plans can be developed to address this risk if confirmed, though the presence of substantive contamination within the Project Site is unlikely.

Issue	Existing environment	Potential impacts	Investigation strategies
	NSW contaminated sites notified to the EPA. A search of the Section 58 of the *Contaminated Land Management Act 1997* (CLM Act) indicated that the Project Site has not been registered on the Record of Notices, or on the list of notified sites under section 60 of the CLM Act with regards to the Duty to Report Contamination.		
Hazard - Bushfire	Bushfire Prone Land – Category 1 occurs approximately 2.2km east of the Project Site, and Category 2 occurs 9.5km to the east. These are considered the first and second highest risk for bush fire. A RFS firefighting shed occurs adjacent to the Project Site.	Solar farms generally pose a low risk of starting bushfires, and the Proposal would employ proven and mature technology for the solar panels and associated ancillary electrical infrastructure. Access to the site and surrounding areas will be improved, reducing response times to local fires. During construction, access to the RFS shed might be impacted.	The potential to increase risk of bushfire would be assessed in the EIS in accordance with the Planning for Bushfire Protection Guideline 2019 (RFS, 2019). Emergency protocols would reflect advice from relevant agencies. Consultation with the RFS would occur during preparation of the EIS, to minimise impacts associated with RFS access.
Hazard - Flooding	Surface water characteristics are discussed below. Desktop searches and Wagga Wagga LEP mapping do not indicate that the Project Site is flood prone. Localised flooding events could occur during periods of high rainfall. These aspects should be considered during the planning phase.	Alterations to surface drainage as a result of earth works and infrastructure during construction and operation.	Drainage and flooding can be investigated during the EIS stage. Management plans can be developed to address this risk if confirmed.
Water - Hydrology and quality	The Project Site is located within the Murrumbidgee Catchment area.	Construction activities have the potential to cause sediment laden runoff to enter creeks.	Water quantities and sources required for construction and operation will be detailed in

Issue	Existing environment	Potential impacts	Investigation strategies
	Surface water features within the Project Site include: • Coreinbob Creek, a 5th order stream • Mates Creek, a 4th order stream • Undefined ephemeral streams Approximately 8 farm dams occur within the Project Site.	This has the potential to affect water quality by preventing light penetration through the water and smothering habitats, including vegetation downstream. Contamination of groundwater and surface water is unlikely given that chemicals and fuels will be appropriately stored, and spills procedures will be implemented. Impacts are best considered as part of the design process to ensure they are manageable. The EIS will include consideration of placement of infrastructure to minimise waterway crossings; protect KFH and the hydrological function of waterways; and protect against soil erosion. SSD developments do not require a controlled activity approval (except an aquifer interference approval) per Section 91 of the WM Act. However, best practice measures are being used to inform site development in accordance with this Act. This Act defines waterfront land as the bed of any river, lake or estuary and any land within 10 to 40 metres of the riverbanks, lake shore or estuary mean high water mark, in accordance with best practice guidelines. In these areas, permanent infrastructure would be avoided or minimised, as informed by further hydrological studies. In overland flow areas, which do not meet the definition of waterfront land under the WM Act, permanent	the EIS as part of the Project description. The EIS would assess the impacts to waterways and include appropriate mitigation measures, such as buffering these areas for avoidance, where possible, and adherence to best practice guidelines (Guidelines for Controlled Activities on Waterfront Land) where avoidance is not possible.

Issue	Existing environment	Potential impacts	Investigation strategies
		infrastructure may be considered.	
Air Quality and climate	The air quality in Borambola is generally expected to be good and typical of that found in a rural setting in NSW with a low population. Existing sources of air pollution includes exhaust from vehicular emissions and dust from agricultural practices. During colder months, there may be a minimal increase in air contaminants due to smoke emissions from the operation of solid fuel heating. The Australian Bureau of Meteorology (BOM, 2021) (1942-2022) climate records from the nearest climate station at Wagga Wagga AMO (station number 072150) indicates a mean summer maximum of 37.9°C (January) and a mean winter minimum of 3.4°C (July). Rainfall records from the same station show a mean annual rainfall of 571.4mm, and that rainfall is generally greatest over spring, with the average monthly maximum occurring in October (55.7mm).	Operation of the proposal will have a positive contribution in mitigating greenhouse gas emissions. Construction of the proposal is not anticipated to have a significant impact on air quality and will mostly be related to dust during construction. Impacts to air quality during operation are likely to be negligible.	The EIS will provide thorough consideration of air quality impacts and propose mitigation measures for construction and operation.
Electromagnetic Fields (EMFs) and Health	EMFs are associated with transmission lines and substations in the area.	Additional EMFs would be generated from the proposed transmission lines, and the substation(s), during the operation of the Proposal.	An EMF assessment which considers the potential health issues and risks associated with EMF produced by the wind farm and associated electrical infrastructure will be undertaken during the EIS.

Issue	Existing environment	Potential impacts	Investigation strategies
Waste management	No known private landfills or waste disposal onsite.	The Proposal would utilise a variety of materials during the construction phase and generate several waste streams including: • excavated material (soil) • Packaging from solar panels and other infrastructure • vegetation Limited operational waste will be associated with the Proposal. Waste management constraints are considered manageable.	A Waste Management Plan would be developed as part of the Construction Environmental Management Plan (CEMP), applying the principles to avoid, re-use and recycle to minimise wastes. Cleared trees would be recycled as fauna habitat where possible.

7. Response to key issues

This section provides a summary of the key constraint areas identified through the preliminary assessment and consultation that has occurred to date. It outlines how Spark Renewables is responding to these as the development of the Proposal progresses.

Based on the information provided in Sections 5 and 6, and commensurate with potential risk, the key issues for further investigation are summarised in Table 7-1 and include:

- Biodiversity
- Amenity - Visual
- Amenity – Noise
- Land use compatibility
- Aboriginal Heritage
- Historic Heritage.

These areas have sensitive features that require further investigation. The further investigation will shape the development of Mates Gully Solar Farm and ensure that the detailed Proposal presented in the EIS is responsive to its environmental and social context. They may require avoidance or other detailed mitigation strategies to be considered.

A precautionary approach is adopted at this early stage, and where uncertainty or information gaps exist, a higher constraints rating has been applied. These areas will be prioritised for further specialist investigation in the EIS, which may reduce the area of constraint.

Other areas that are considered low and moderate constraint are not presented in this section. These areas may require specific management protocols and will be investigated commensurate with risk in the EIS, as outlined in Section 6.3

Further detail regarding how the Proponent has designed the Proposal in response to constraints is detailed in Section 3 of this report.

Table 7-1 Response to preliminary 'high constraint' areas

Key Issue	Features	Spark Renewables' Response
Biodiversity	Based on our preliminary site investigations, high value features include: • Small remnant patches of Box Gum Woodland TEC • Areas containing suitable breeding hollows for Superb Parrot • High potential candidate species credits habitat (i.e., Hollow dependent species) • Riparian areas with remnant tree canopy • Non-TEC Plant Community Types (PCTs).	In response to the preliminary site investigations, Spark Renewables has developed a preliminary layout for the Proposal that avoids most native vegetation. As part of the EIS, Spark Renewables will: • Complete a Biodiversity Assessment Report (BDAR) in consultation with Biodiversity, Conservation and Science (BCS) for impacts to Category 2 land • Concurrently, revise infrastructure layout to avoid and minimise impacts, concentrate development in areas of non-native or degraded native vegetation • Calculate and commit to meeting the offset obligation for the proposal, as required under the BC Act • Develop specific additional mitigation strategies for residual impacts with input from specialists.
Visual Amenity	Based on preliminary site investigations, several close residential receivers have potential for high visual impacts. The visibility of the Project is not likely to extend beyond the 3.25km buffer assessed within this Scoping Report, due to the undulating nature of the terrain.	As part of the site selection process, a remote Project Site was selected that minimises the number of close residential receivers. As part of the EIS, Spark Renewables will: • Complete a detailed visual impact assessment • Prioritise consultation with affected stakeholders • Revise infrastructure layout to minimise impacts • Develop mitigation strategies for residual impacts with input from affected residents and specialists, including consideration of visual screening.

Key Issue	Features	Spark Renewables' Response
Land use compatibility	The Project Site is located in a rural agricultural setting and is currently used for agriculture, energy transmission. Parts of the site have historically been used for agricultural rail haulage. The number of existing and proposed solar farms in the wider region is of concern to some community members, interest groups and neighbours in relation to loss of productive agricultural land and visual impacts.	As part of the site selection process, a Project Site was selected that was not BSAL and not high LSC supporting highly productive agricultural land. It is anticipated the Project may reduce the agricultural output of the site whilst operational, however the inherent agricultural capability of the land and soils would not be affected by the project due to limited disturbance of the land to construct and operate the Project. The Project site would be fully rehabilitated to support continuation of existing agricultural land uses following decommissioning. It is also anticipated that historical seasonal livestock grazing will continue throughout operation of the solar farm, as a key land management tool as well as to maintain agricultural production. During operation the Project would provide an ongoing drought proof income stream for host landowners, with flow on benefits for the local economy. Construction and operation of the project is unlikely to restrict agricultural productivity of neighbouring properties and throughout the region. The impact on agricultural production in the locality and region would be assessed in the EIS as part of a Land Use Conflict Risk Assessment (LUCRA) and generally in accordance with a reduced agricultural impact assessment (Level 2) as per the Draft Large-Scale Solar Energy Guidelines for State Significant Development (NSW Government, 2021) .
Noise Amenity	Based on preliminary site investigations, some residential receivers may potentially be impacted by noise during the construction phase of the Project.	As above, as part of the site selection process, a Project Site was selected that minimises the number of close residential receivers. As part of the EIS, Spark Renewables will: • Complete a detailed noise impact assessment • Prioritise consultation with affected stakeholders • Revise infrastructure layout to minimise impacts • Develop mitigation strategies for residual impacts with input from affected residents and specialists.

Key Issue	Features	Spark Renewables' Response
Aboriginal Heritage	Whilst no AHIMS sites have been recorded in the Project Site, there are 98 recordings in proximity including a cluster of registered Modified Trees and an Ochre Quarry located within 500m of the northern extent of the Project area. The Project Site is intersected by Coreibob Creek, and located adjacent to Mates Creek and Tarcutta Creek, which are likely to retain higher potential to preserve items of Aboriginal heritage significance.	The Project Site has been subjected to historical disturbance pertaining to historical farming and pastoral practices, however further assessment, in the form of an Aboriginal Cultural Heritage Assessment (ACHA) is required to determine if this disturbance has been such to diminish the likelihood of Aboriginal objects being present within the proposal area.
Historic Heritage	The Tarra Wingee and Outbuildings (ID# I11), which have known historic significance, are located within the northern portion of the Project Site. The proposal may also result in visual impacts to the Tennis Courts and Clubhouse (I#17) located to the north of the proposal area. The specific degree of risk to historical buildings within and nearby to the Project Site will need to be assessed.	In response to the preliminary site investigations, Spark Renewables has developed a preliminary layout for the Proposal that avoids Tarra Wingee and Outbuildings (ID# I11) As part of the EIS, Spark Renewables will: • Complete a Statement of Heritage Significance (SOHI) • Concurrently, revise infrastructure layout in response to findings (which may include additional areas).
Social	The Project would provide an economic benefit to the Riverina region through employment opportunities, and increased expenditure at local businesses by construction teams. The preliminary social impact report indicates that the following have been identified as areas with potential for high social impacts: **Positive** • Employment and labour impacts	The EIS will provide thorough consideration of the potential social and economic impacts. Further community consultation will be undertaken during the EIS phase to understand any community concerns and ensure the EIS addresses these concerns. Any issues perceived from the community and cumulative impacts of other proposed developments would be assessed in the EIS and Community Engagement Management Strategy.

Key Issue	Features	Spark Renewables' Response
	• Increase in economic activity within the local and regional area **Negative** • Availability of rental housing	
Cumulative impacts	Approximately 15 SSD Projects occur within the Wagga Wagga LGA. These Projects are located within proximity to the township of Wagga Wagga and are at different stages of approval. The closest Project is the Project EnergyConnect (NSW – Eastern Section) transmission line (24km west of the Project). During construction and operation, key cumulative impacts may include: • Visibility of the Proposal may generate a cumulative impact with transmission lines, adjacent Solar Farms and any other proposed renewable developments within the region. • Noise and traffic during construction may generate a cumulative impact if construction activities occur concurrently • Pressure on local facilities, goods and services during construction may generate a cumulative impact if construction activities occur concurrently	The EIS will provide thorough consideration of cumulative impacts. Further community consultation will be undertaken during the EIS phase to understand any community concerns and ensure the EIS addresses these concerns. A Cumulative Impact Assessment will be undertaken in accordance with the Cumulative Impact Assessment Guidelines for State Significant Projects.

8. Conclusion and Recommendations

This Scoping Report has outlined and established the planning and general environmental context of the Project. The Project would be assessed under Part 4 of the EP&A Act and classed as SSD under the PS SEPP.

The Scoping Report has categorised the potential environmental impacts of the Project as key issues or other issues. Based on this Scoping Report, an indicative scope for the EIS has been developed, focusing on the key issues:

- **Landscape and visual amenity**, particularly residential receivers within 3.25km of the Project Site with line of site to the Project
- **Biodiversity**, in particular high constraint vegetation zones and Superb Parrot breeding habitat
- **Land use**, particularly compatibility and agricultural production
- **Noise and vibration**, particularly residential receivers within 1km of the Project Site
- **Aboriginal heritage,** particularly the potential for significant sites and objects
- **Historic heritage**, particularly the potential for impact on adjacent listed heritage sites.

Secondary issues would also be investigated, commensurate with risk, through further investigation.

The EIS would be prepared in accordance with the Project-specific SEARs. Mitigation measures will be developed for inclusion in the EIS and will address the management of key issues and other issues identified in the assessment and community and stakeholder engagement process.

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Appendix A Scoping summary table

Level of assessment	Matter	CIA*	Engagement	Scoping report reference	Relevant government plans, policies and guidelines
Detailed	Biodiversity	Yes	General	Section 6.2.1	• Biodiversity Assessment Method (BAM) (NSW Government, 2020). • Commonwealth EPBC 1.1 Significant Impact Guidelines – Matters of National Environmental Significance (Commonwealth of Australia, 2013); • Commonwealth EPBC 1.2 Significant Impact Guidelines – Actions on, or Impacting upon Commonwealth Land and Actions by Commonwealth Agencies (Commonwealth of Australia, 2013); • Commonwealth Department of the Environment – Survey Guidelines for Nationally Threatened Species (various); • NSW Biosecurity Strategy 2013-2021.
Detailed	Amenity – landscape and visual	Yes	Specific	Section 6.2.2	• Draft Large-Scale Solar Energy Guideline • Draft Guidelines for Landscape and Visual Impact Assessment (3rd edition) (NSW Government) • Guidelines for Landscape and Visual Impact Assessment (United Kingdom Landscape Institute of Environmental Management and Assessment 2013); • Guidance Note for Landscape and Visual Assessment (Australian Institute of Landscape Architects 2018)
Detailed	Amenity - noise and vibration	Yes	General	Section 6.2.3	• Construction Noise Strategy (Transport for NSW, 2012) • Interim Construction Noise Guideline (Department of Environment, Climate Change and Water, 2009) • NSW Industrial Noise Policy (Environment Protection Authority, 2000) • NSW Road Noise Policy (Environment Protection Authority, 2011) • Assessing Vibration: A Technical Guideline (Department of Environment and

Level of assessment	Matter	CIA*	Engagement	Scoping report reference	Relevant government plans, policies and guidelines
					Conservation, 2006) • German Standard DIN 4150-3: Structural Vibration – Effects of Vibration on Structures • Environmental Noise Management Assessing Vibration: A Technical Guideline (Department of Environment and Conservation, 2006).
Standard	Land – land use	No	General	Section 6.3	• Agricultural Land Use Mapping Resources in NSW • The Land and Soil Capability Scheme (Office of Environment and Heritage, 2012).
Detailed	Access – traffic	Yes	Specific	Section 6.3	• Guide to Traffic Generating Developments Version 2.2 (Roads and Traffic Authority, 2002) • Guide to Traffic Management – Part 3 Traffic Studies and Analysis (Austroads, 2013). • Austroads Guidelines for Road Design (Austroads) • Austroads Guidelines for Traffic Management (Austroads)
Detailed	Socio-economic impacts	Yes	Specific	Section 6.2.7	• Social Impact Assessment Guidelines for State Significant Projects (Department of Planning Industry and Environment, 2021) • Undertaking Engagement Guideline for State Significant Projects (Department of Planning Industry and Environment, 2021).

Level of assessment	Matter	CIA*	Engagement	Scoping report reference	Relevant government plans, policies and guidelines
Detailed	Heritage - Aboriginal	No	Specific	Section 6.2.5	• Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW 2011 • Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 • Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW 2010.
Detailed	Heritage – non-indigenous	No	Specific	Section 6.2.6	• Commonwealth EPBC 1.1 Significant Impact Guidelines – Matters of National Environmental Significance (Commonwealth of Australia, 2013) • Commonwealth EPBC 1.2 Significant Impact Guidelines – Actions on, or impacting upon, Commonwealth Land and Actions by Commonwealth Agencies (Commonwealth of Australia, 2013) • NSW Skeletal Remains: Guidelines for Management of Human Remains (Heritage Office, 1998) • Criteria for the Assessment of Excavation Directors (NSW Heritage Council, 2011).
Standard	Hazards and risks - battery storage	No	General	Section 6.3	• Chapter 3 Hazardous and offensive development of State Environmental Planning Policy (Resilience and Hazards) 2021 • Hazardous and Offensive Development Application Guidelines: Applying SEPP 33 (Department of Planning, 2011) • Assessment Guideline: Multi-level Risk Assessment (Department of Planning and Infrastructure, 2011) • Hazardous Industry Planning Advisory Paper No 6: Hazard Analysis (Department of Planning, 2011)
Standard	Hazards and risks - bushfire	No	General	Section 6.3	• Planning for Bushfire Protection (NSW Rural Fire Service, 2019).

Level of assessment	Matter	CIA*	Engagement	Scoping report reference	Relevant government plans, policies and guidelines
Standard	Hazards and risks - EMF	No	General	Section 6.3	• NSW Large-scale solar energy guideline for State Significant Development (Department of Planning and Environment, 2018).
Detailed	Hazards and risks – glint and glare	No	General	Section 6.2.2	• FAA, “Technical Guidance for Evaluating Selected Solar Technologies on Airports”, Federal Aviation Administration, Washington, D.C., November 2010. • FAA, “Interim Policy, FAA Review of Solar Energy System Projects on Federally Obligated Airports”, Federal Register, Oct. 23, 2013. • FAA, “Technical Guidance for Evaluating Selected Solar Technologies on Airports”, Federal Aviation Administration, Washington, D.C., Version 1.1, April 2018. • AS/NZS 4282:2019, AS 4282-2019, AS 1158-2005 • Clean Energy Council nuisance glare guidelines https://www.cleanenergycouncil.org.au/industry/products/modules.
Detailed	Water – hydrology and groundwaters	No	General	Section 6.3	• Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG 2018) • NSW Water and River Flow Objectives (NSW Government, 2006) • Floodplain Risk Management Guidelines (Department of Environment and Climate Change, 2016) • Floodplain Development Manual: The management of flood liable land (NSW Government, 2005) • Managing Urban Stormwater: Soils and Construction Volume 1 (Landcom, 2004) • Managing Urban Stormwater: Soils and Construction Volume 2 (Department of Environment and Climate Change, 2008) • NSW State groundwater dependent ecosystem policy (Department of Land, Water and Climate, 2002). • NSW Government’s Floodplain Development Manual (2005).

Level of assessment	Matter	CIA*	Engagement	Scoping report reference	Relevant government plans, policies and guidelines
Standard	Land – soils and contamination	No	General	Section 6.3	• Acid Sulphate Soils Assessment Guidelines (Department of Planning, 2008) • The Land and Soil Capability Scheme (Office of Environment and Heritage, 2012) • Soil and Land Survey Handbooks • Managing Urban Stormwater: Soils and Construction Volume 1 (Landcom, 2004) • Managing Urban Stormwater: Soils and Construction Volume 2 (Department of Environment and Climate Change, 2008) • Agricultural Land Use Mapping Resources in NSW.
Standard	Air - air quality and climate	No	General	Section 6.3	• NSW Climate Change Policy Framework (Office of Environment and Heritage, 2016) • National Greenhouse Accounts Factors (Australian Government, 2021)
Standard	Hazards and risks - Waste	No	General	Section 6.3	• Waste Classification Guidelines (DECCW, 2009)
Standard	Cumulative impacts	N/A	General	Section 6.2.8	• Cumulative Impact Assessment Guidelines for State Significant Projects (Department of Planning Industry and Environment, 2021)

*CIA – Cumulative Impact Assessment

Appendix B Land Category Assessment

Land Category Assessment

Mates Gully Solar Farm

January 2022

Project Number: 21-858

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Document verification

Project Title:	Mates Gully Solar Farm
Project Number:	21-858
Project File Name:	21-858_Land Category Assessment_draft.docx

Revision	Date	Prepared by	Reviewed by	Approved by
Draft	31/01/2022	J. Gooding	Michelle Patrick	Michelle Patrick
	[Enter the date]			
	[Enter the date]			
	[Enter the date]			

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Acronyms and abbreviations

ALUM	Australian Land Use and Management Classification
BAM	Biodiversity Assessment Method
BC Act	*Biodiversity Conservation Act 2016* (NSW)
BCD	Biodiversity Conservation Division, Division of DPIE (formerly OEH)
BDAR	Biodiversity Development Assessment Report
BOS	Biodiversity Offsets Scheme
Cwth	Commonwealth
DBH	Diameter at breast height (for woody vegetation)
DCS SS	Spatial Services, a business unit of the NSW Department of Customer Service (NSW)
DPIE	Department of Planning, Industry and Environment (NSW)
EEC	Endangered ecological community – as defined under relevant law applying to the proposal
EP&A Act	*Environmental Planning and Assessment Act 1979* (NSW)
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Cwth)
FPC	Foliage Projective Cover
ha	hectares
IGGAM	Interim Grasslands and other Groundcover Assessment Method
km	kilometres
LEP	Local Environment Plan
LLS	Local Land Services
LLS Act	*Local Land Services Act 2013* (NSW)
LLS Regulation	*Local Land Services Regulation 2014 (NSW)*
m	metres
NV Act	*Native Vegetation Act 2003* (NSW)
NVR Map	Native Vegetation Regulatory Map
OEH	(Former) Office of Environment and Heritage (NSW) (now EES)
PCT	Plant Community Type
PVP	Property Vegetation Plan
SEPP	State Environmental Planning Policy
TSR	Travelling Stock Reserve
Vegetation SEPP	State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017

1. Land Category Assessment

1.1 Introduction

NGH were engaged by Sparks Renewable to prepare a Land Category Assessment (LCA) for the proposed Mates Gully Solar Farm located in the locality of Borambola, approximately 30km East of Wagga Wagga. The subject land covers Lot 2 DP 1088773 and Lot 2 169597, located along Mates Gully Road.

The proposal for the Mates Gully Solar Farm will require assessment using the Biodiversity Assessment Method (BAM) and the preparation of a Biodiversity Development Assessment Report (BDAR). Section 6.8(3) of the NSW *Biodiversity Conservation Act 2016* determines that the BAM is to exclude the assessment of the impacts of clearing of native vegetation on Category 1 – exempt land (within the meaning of Part 5A of the NSW *Local Land Services Act 2013*).

Boundaries mapping Category 1 – exempt land and Category 2 – regulated land on the Native Vegetation Regulatory (NVR) Map are not yet publicly available. Only boundaries mapping Category 2 – sensitive regulated land (environmentally sensitive land), Category 2 – vulnerable regulated land (land prone to erosion) and excluded land (land excluded from Part 5A of the Local Land Services Act) are currently publicly visible on the NVR Map.

During the transitional period, BAM accredited assessors may establish the categorisation of land for the Environment Agency Head to consider, following the method utilised to develop the Native Vegetation Regulatory Map.

1.2 Legislative provisions for determining Category 1 – exempt land

1.2.1 Section 60J of the Local Land Services Act 2013

Category 1- Exempt land is defined under the Local Land Services Act 2013 (LLS) as;

- Land cleared of native vegetation as at 1 January 1990 or lawfully cleared between 1 January 1990 and the commencement of the LLS Act.
- Low Conservation Grasslands (following commencement of the new framework on 25th August 2017
- Land (not being grasslands) containing only low conservation groundcover (following commencement of the new framework on 25th August 2017)
- Native vegetation identified as regrowth in a Property Vegetation Plan (PVP) under the repealed *Native Vegetation Act 2003*
- Land biodiversity certified under the BC Act.

Under section 60J of the Local Land Services Act (LLS Act), matters relating to the determination of mapped category 1 – exempt land or category 2 – regulated land include:

60J (2) Native vegetation that comprises grasslands or other non-woody vegetation is taken to have been cleared if the native vegetation was significantly disturbed or modified. The regulations may make provision for the purposes of determining whether native vegetation has been significantly disturbed or modified for the purposes of this Division.

The clearing of native vegetation after 1990 must have been done legally, and the vegetation must have been cleared as of 1 January 1990 or between 1 January 1990 and 25 August 2017. Satellite imagery may be used to determine the native vegetation clearing.

1.2.2 Section 114 of the Local Land Services Regulation 2014

Section 114 of the Local Land Services Regulation 2014 (LLS Regulation) outlines how to determine whether native vegetation has been significantly disturbed or modified.

(1) Native vegetation that comprises grasslands or other non-woody vegetation is taken to have been significantly disturbed or modified (and therefore cleared) only if –

> *(a) there has been a detectable variation (from information obtained from aerial or satellite imagery) in the structure or composition, or both, of non-woody vegetation, and*
>
> *(b) that variation is consistent with management of pasture or crops for agricultural purposes, and*
>
> *(c) that variation has been sustained for at least 12 months on more than one occasion before the commencement of Part 5A of the Act, and*
>
> *(d) that variation has not been caused only by grazing on the land, and*
>
> *(e) that variation occurred (from information obtained from aerial or satellite imagery) between 1 January 1990 and the date of commencement of Part 5A of the Act.*

1.3 Determination of Category 1 – exempt land for Mates Gully Solar Farm

1.3.1 Overview of methodology

A desktop assessment was undertaken over the subject land to determine the native vegetation extent, historical land use and likely land class category. Historical aerial imagery used was dated 1986, 1991 and 1998. Aerial imagery was not available for 1990 and therefore imagery from 1986 and 1991 were used to give a reasonable indication of what was occurring in 1990. Aerial images were analysed for evidence of native vegetation in 1990 and disturbance or modification of groundcover vegetation.

Spatial data sources that were assessed included:

- Land Zoning (Wagga Wagga Local Environment Plan 2010)
- Aerial imagery of historic land use (Sourced from Spatial Services Delivery, Department of Finance, Services and Innovation 2022).
- 2017 V1.2 Land Use Dataset (Australian Land Use and management (ALUM) Classification Version 8 (Department of Planning, Industry and environment, 2020).
- NSW Woody Vegetation Extent and Foliage Projective Cover (FPC) 2011 (Office of Environment and Heritage, 2015).
- Sensitive Regulated and Vulnerable Regulated Lands (Native Vegetation Regulatory Map Portal, 2020).
- Riverina State Vegetation Mapping (VIS_ID 4469, DPIE 2020).

1.3.2 Site assessment

A preliminary site assessment was undertaken on the 22 November 2021 to ground truth the data collated from the desktop assessment. The site assessment included rapid assessment and classification of Plant Community Types (PCTs), vegetation condition and current land use. The site assessment also identified scattered trees.

1.3.3 Analysis and results

The entire subject land is zoned Ru1- Primary Production under the Wagga Wagga LEP, thus it is land that can be classified under the Local Land Services Act.

Current land categorisation

Coreinbob Creek runs along the north to north-west corner of the subject land and retains remnant River Red Gum (*Eucalyptus camaldulensis*). This riparian vegetation is mapped as Category 2 - Vulnerable Regulated Land on the NVR Map.

Category 1 Land

The majority of the site is mapped as 'Cropping' under the NSW Landuse dataset (DPIE, 2020). This corresponds with the aerial imagery from 1986 and 1991 and the current land use (Figure 1-1). Areas mapped as cropping also occur within areas of woody vegetation or scattered paddock trees. Historic aerial imagery shows that cropping has occurred directly around and under remnant trees and scattered paddock trees in the past.

Areas mapped as 'residential and farm infrastructure' are highly disturbed surrounding sheds and machinery and groundcover is heavily impacted.

A thin strip of land mapped as 'grazing native vegetation' occurs along the railway line easement. The railway line closed in 1987 but was not removed. The railway line easement is likely to have been significantly disturbed for railway construction and maintenance.

These areas showed clear evidence of highly modified ground layers in 1990 and lacked woody vegetation and have been mapped as Category 1- Exempt land.

Category 2 Land

Aerial imagery and woody extent spatial data shows remnant paddock trees present in 1990 surrounded by cropping and disturbed land (Figure 1-3). These paddock trees have been categorised as Category 2 – Regulated Land.

Remnant vegetation occurs along the riparian creek lines in the Southeast, North and Western boundaries of the subject land (Figure 1-4). Although the understory is currently exotic there is no clear evidence of continued ground cover disturbance under these trees from 1990 and these riparian corridors have been categorised as Category 2 - Regulated Land.

Small patches of planted native vegetation occurring as windbreaks currently occur within the subject land (Figure 1-2). Analysis of aerial imagery show the majority of these patches were planted post 1990. Aerial imagery in 1986 and 1991 shows these planted areas were cleared of native vegetation and contained highly disturbed understory from agricultural activities prior to planting. These areas had no evidence of native vegetation in 1990 and have been categorised as Category 1 - Exempt Land. There are some small planted native vegetation patches that although were not visible as plantings in 1991, had been avoided by cropping and may have been planted

as seedlings during this time. As a precautionary approach, these patches of planted vegetation were mapped as Category 2 - Regulated Land.

The analysis of the spatial data sources, in conjunction with historical aerial imagery, demonstrates evidence of extensive vegetation modification resulting from agricultural land use within the subject land prior to and post 1990. Table 1-1 summarises how the spatial imagery and site assessments were used in determining land category.

Table 1-1 Summary of data and criteria used to assess Land Category.

Data source	Proposed Category 1 – exempt land	(Proposed) Category 2 – regulated land	Notes
Native Vegetation Regulatory Map, 2017 (Appendix A.1)	n/a	Coreinbob Creek identified as vulnerable regulated land.	No areas mapped as sensitive regulated land or excluded land.
Land Zoning (Appendix A.2)	Ru1 – Primary Production	Ru1 – Primary Production	
Current aerial imagery	• Clear evidence of cropping. • Clear evidence of significant groundcover modification.	• Woody Vegetation present in 1990 imagery.	
1986 aerial imagery (Appendix A.3)	• Clear evidence of cropping. • Clear evidence of significant groundcover modification.	• Woody Vegetation present in 1990 imagery.	
1991 aerial imagery (Appendix A.4)	• Clear evidence of cropping. • Clear evidence of significant groundcover modification.	• Woody Vegetation present in 1990 imagery.	
1998 aerial imagery (Appendix A.5)	• Clear evidence of cropping. • Clear evidence of significant groundcover modification.	• Woody Vegetation present in 1990 imagery.	
NSW Landuse 2017 (Appendix A.6)	Land use identified as: • Cropping • Residential and farm infrastructure • Grazing native vegetation (Railway line easement).	Land use identified as: • River • Grazing Native Vegetation	
NSW Woody Vegetation Extent 2011 (Appendix A.7)	• Areas lacking woody vegetation • Areas with planted vegetation post 1990 (on woody vegetation extent layer)	• Areas of woody vegetation mapped in NSW Woody Vegetation Extent Layer.	

Data source	Proposed Category 1 – exempt land	(Proposed) Category 2 – regulated land	Notes
Plant Community Types (PCTs) (Appendix A.8)	Areas mapped as non-native vegetation.	PCT 79, PCT 266 and PCT 277 identified from Riverina State Vegetation Mapping (VIS_4469) and field assessment.	

Based on the assessment outlined in Table 1-1, **the proposed land categorisation**, including Category 1 - Exempt Land, Category 2 – Regulated Land and the publicly available mapping of Category 2 – Sensitive Regulated Land and Category 2 - Vulnerable Regulated Land, is shown in Appendix A.10. The relevant datasets used in the assessment are included in Appendix A.1 – Appendix A.9

1.3.4 Site photographs

Figure 1-1 Example of Category 1-Exempt Land: cropped paddocks

Figure 1-2 Example of Category 1-Exempt land: Planted vegetation planted post 1990

Figure 1-3 Example of Category 2 – Regulated Land - Paddock trees surrounded by Category 1 Land

Figure 1-4 Example of Category 2 – Regulated Land – Riparian Vegetation along unnamed Creek.

1.3.5 Conclusion

The land category assessment demonstrated that large areas of the subject land, have been heavily modified from agricultural use consistently between 1986 to 1998 and present. This is supported by the historic aerial imagery, 2017 land use datasets, and woody extent spatial data. These areas have been mapped as Category 1 - Exempt Land.

Areas of woody vegetation and scattered paddock trees present in 1990 have been mapped as Category 2 – Regulated Land.

Where in doubt, or where data sources are conflicting, a precautionary approach has been implemented for areas deemed inconclusive in terms of determining historical land use. The proposed land categorisation for the proposal site in depicted in Appendix A.10

2. References

State of New South Wales and Department of Planning, Industry and Environment, 2021. Native Vegetation Regulatory Map www.lmbc.nsw.gov.au/Maps/index.html?viewer=NVRMap (accessed 18.01.22)

State Government of NSW and Department of Planning, Industry and Environment, 2020. NSW Landuse 2017 v1.2 (Australian Land Use and Management (ALUM) Classification Version 8) https://datasets.seed.nsw.gov.au/dataset/nsw-landuse-2017-v1p2-f0ed (accessed 18.01.2022)

State Government of NSW and Department of Planning, Industry and Environment, 2015. NSW Woody Vegetation Extent and Foliage Projective Cover 2011 https://datasets.seed.nsw.gov.au/dataset/nsw-woody-vegetation-extent-fpc-20119bb42 (accessed 18.01.22)

State Government of NSW and Department of Planning, Industry and Environment, 2016. State Vegetation Type Mapping Riverina Region Version v1.2 _VIS_ID 4469 (accessed 18.01.22)

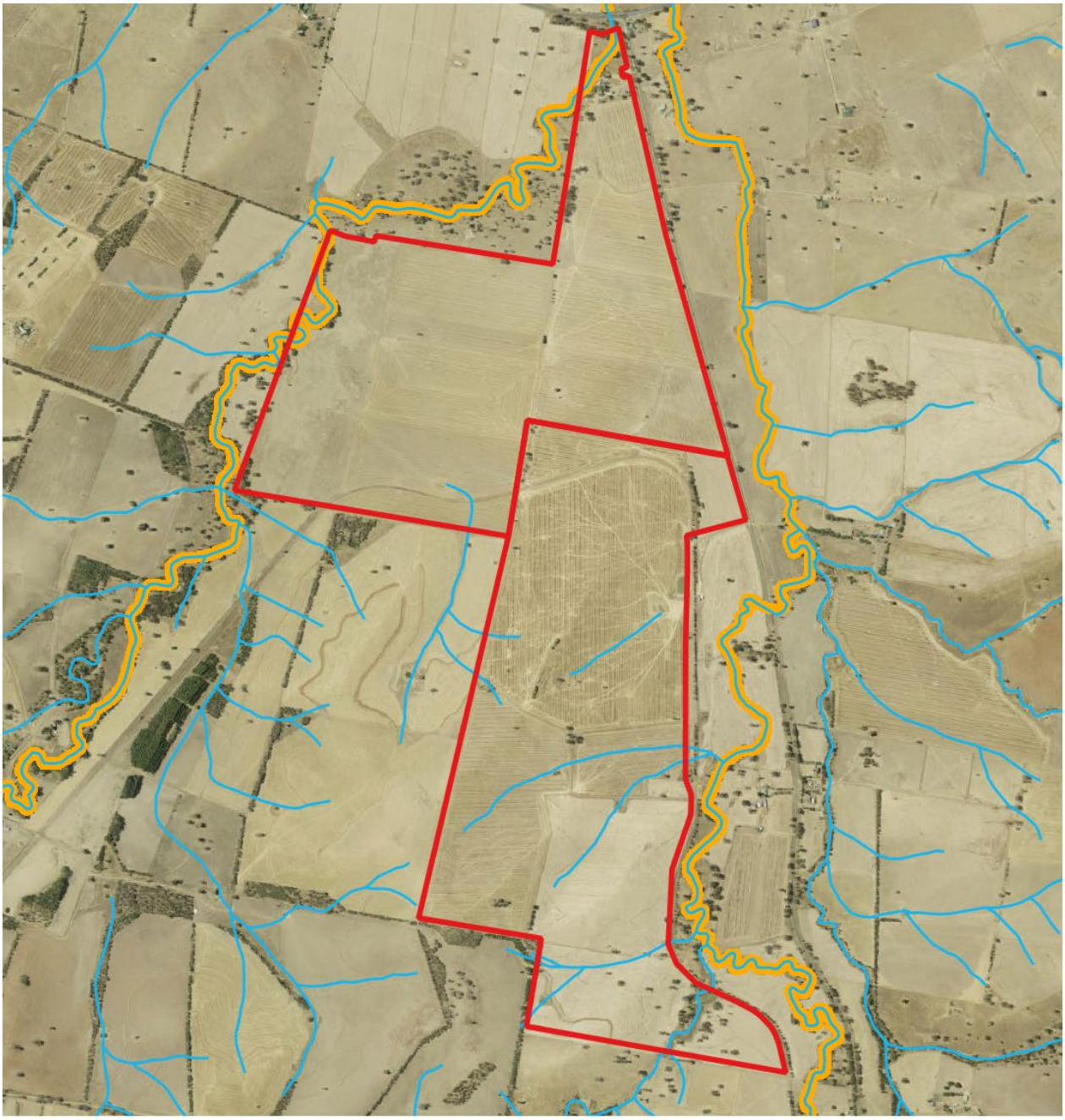
State of New South Wales and Department of Regional NSW, 2022. www.lls.nsw.gov.au/help-and-advice/land-management-in-nsw/resources (accessed 18.01.22)

State of New South Wales (Spatial Services, a business unit of the Department of Customer Service NSW, 2022 Imagery Viewer. https://portal.spatial.nsw.gov.au/portal/apps/webappviewer/index.html?id=f7c215b873864d44bccddda8075238cb (accessed 18.01.22)

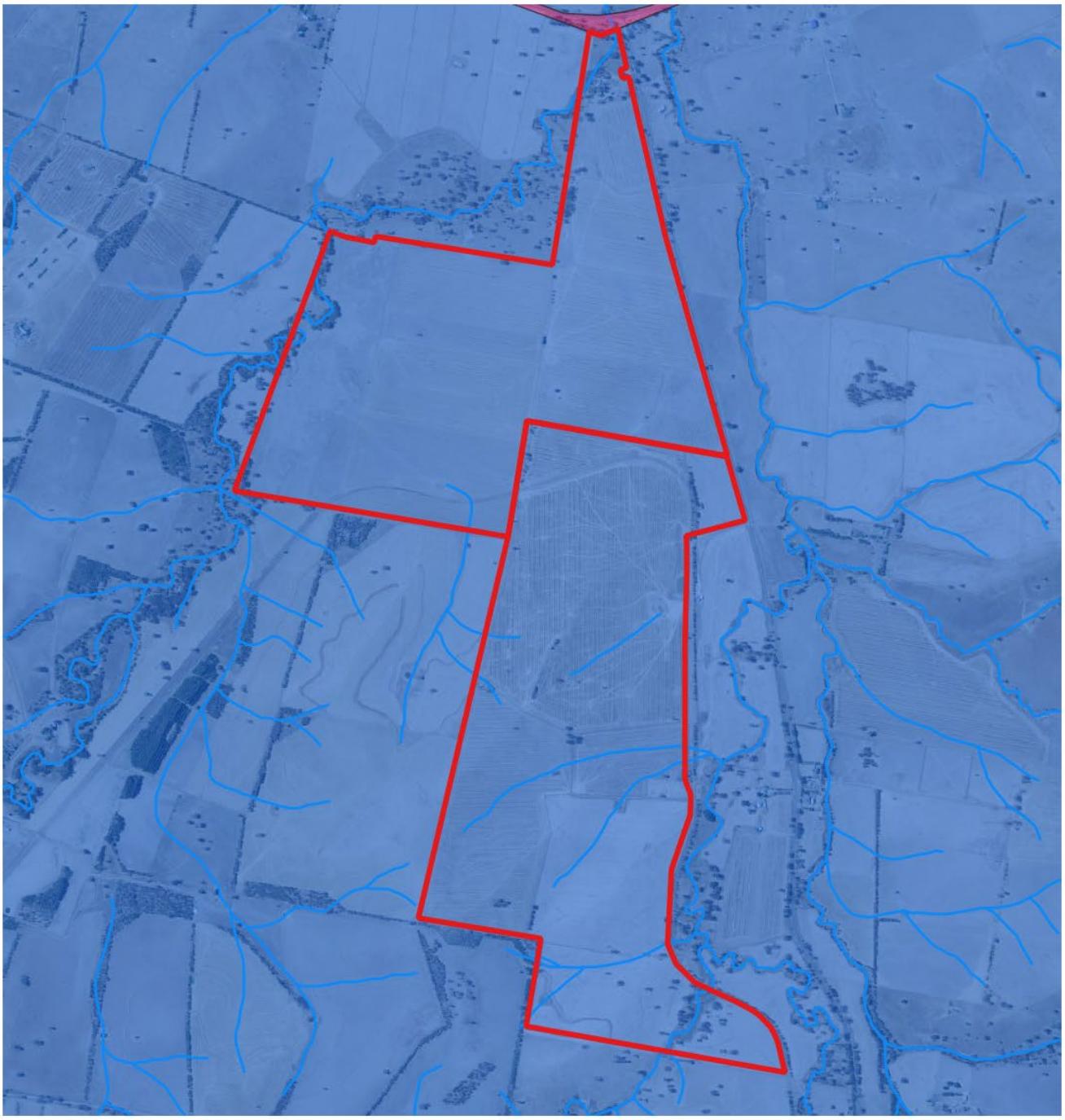
State of New South Wales (Spatial Services, a business unit of the Department of Customer Service NSW, 2022. SixMaps https://maps.six.nsw.gov.au/ (accessed 18.01.22)

Appendix A Land Category Assessment mapping

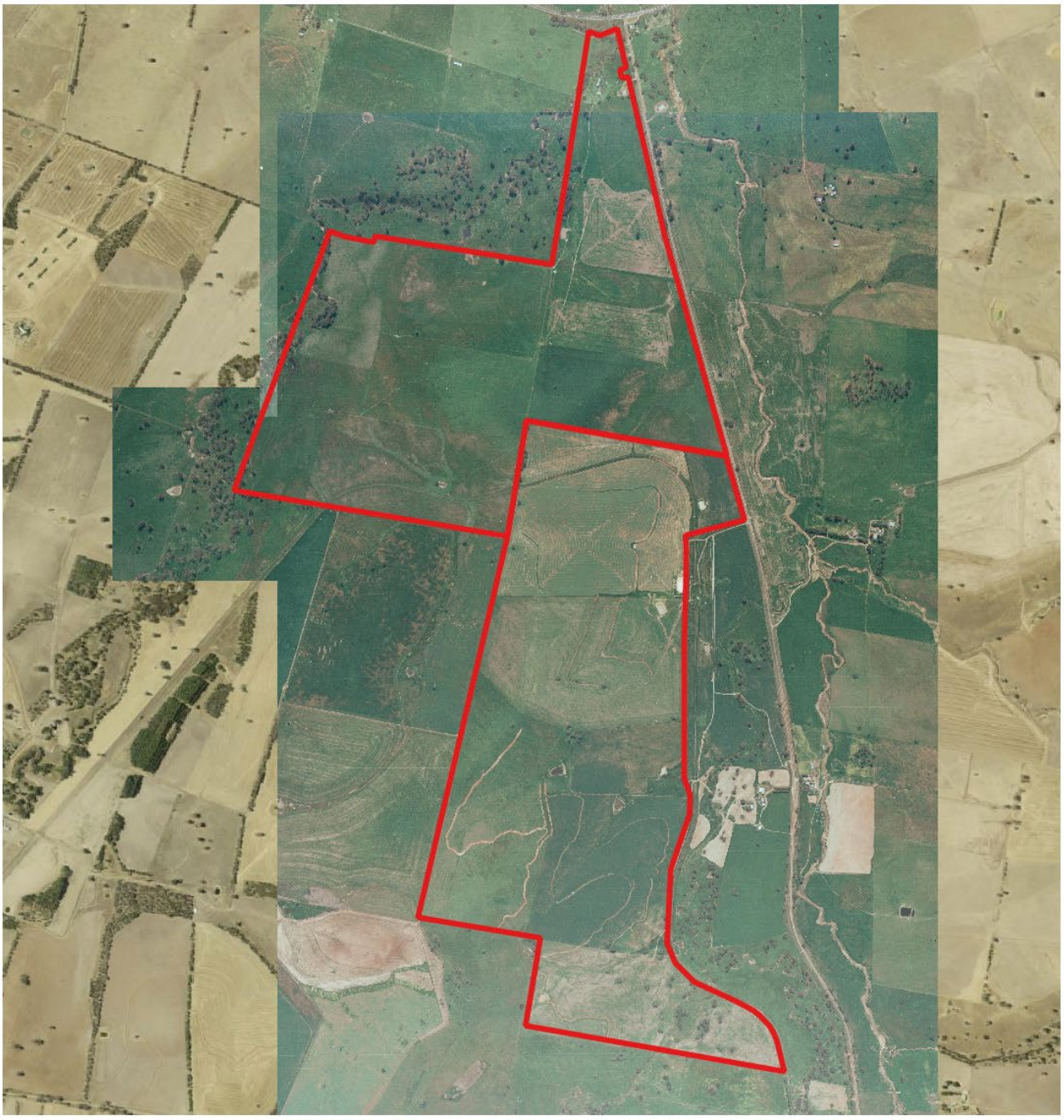
A.1 Development site and land categorisation (publicly available layers)



A.2 Land zoning



A.3 Aerial imagery 1991

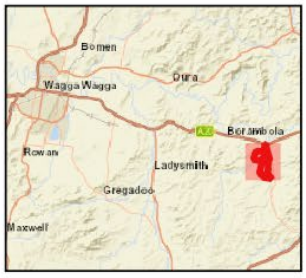


1991 Aerial Imagery

Legend

Subject Land — Watercourses

0 0.25 0.5 0.75 1 km



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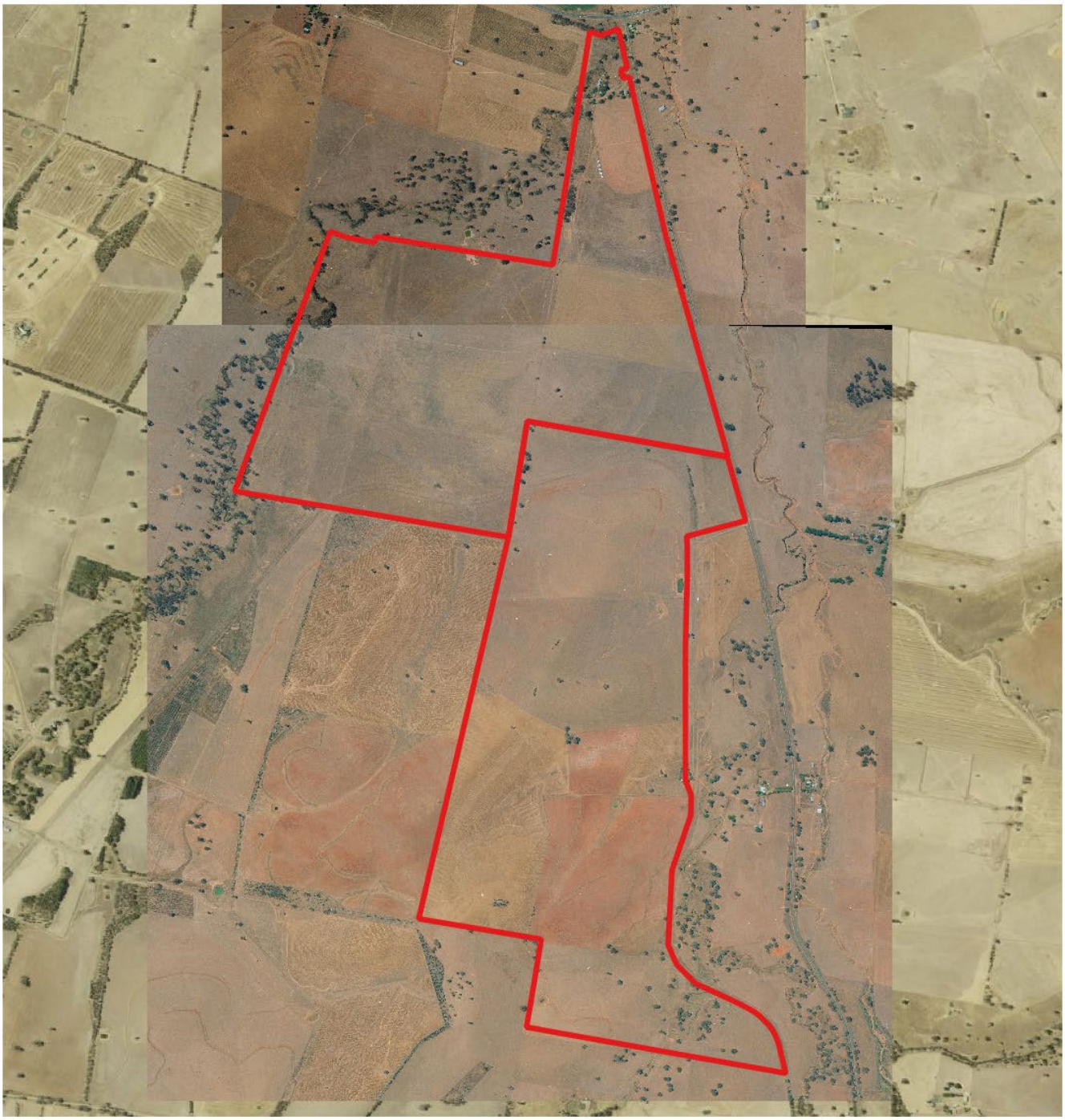
Date created: 21.01.2022
Datum: GDA94 / MGA zone 55

NGH

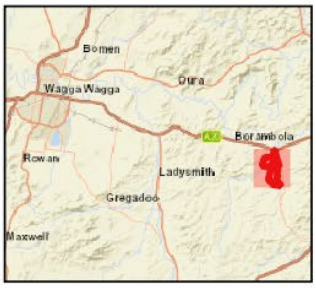
A.4 Aerial imagery 1998



1998 Aerial imagery

Legend
Subject Land

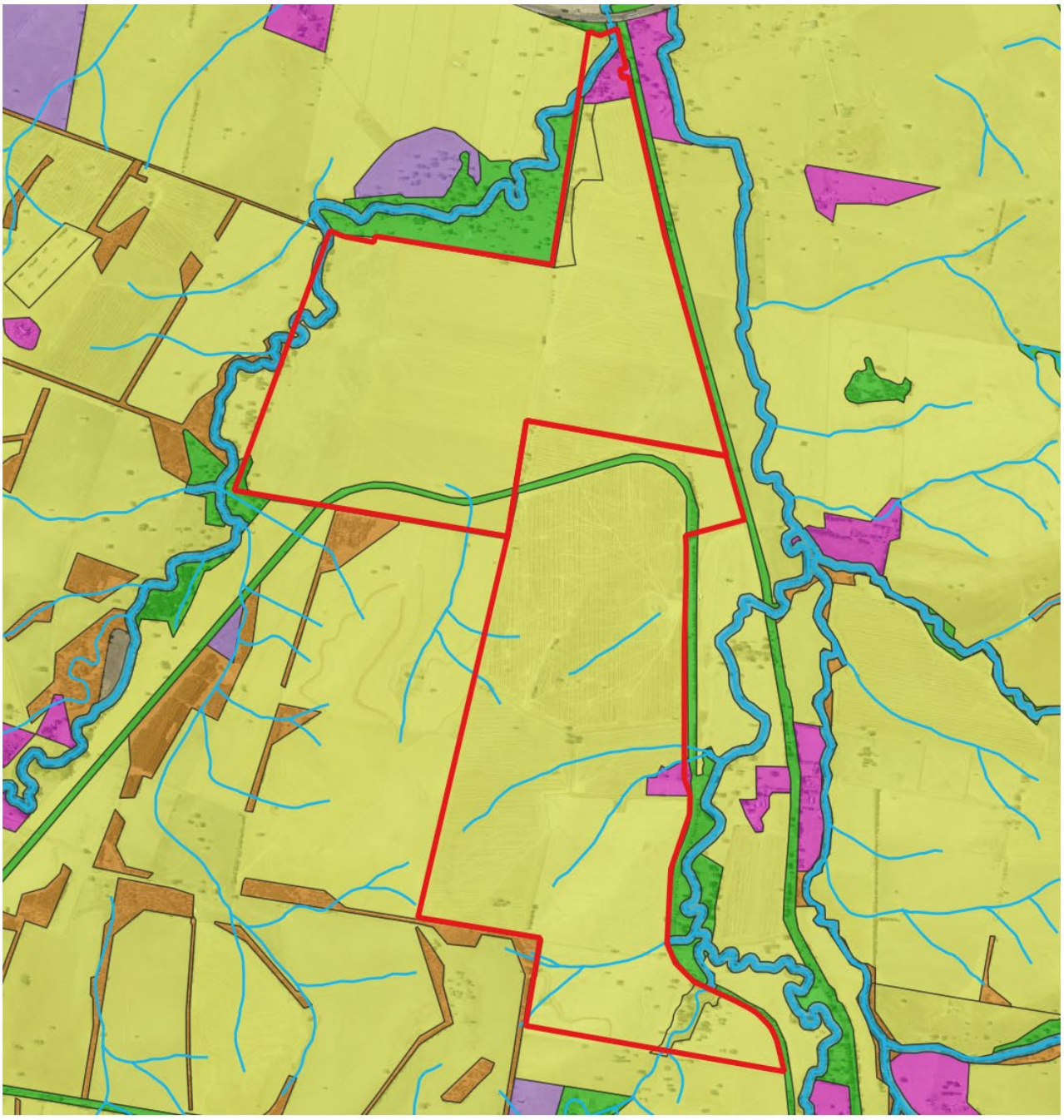
0 0.25 0.5 0.75 1 km



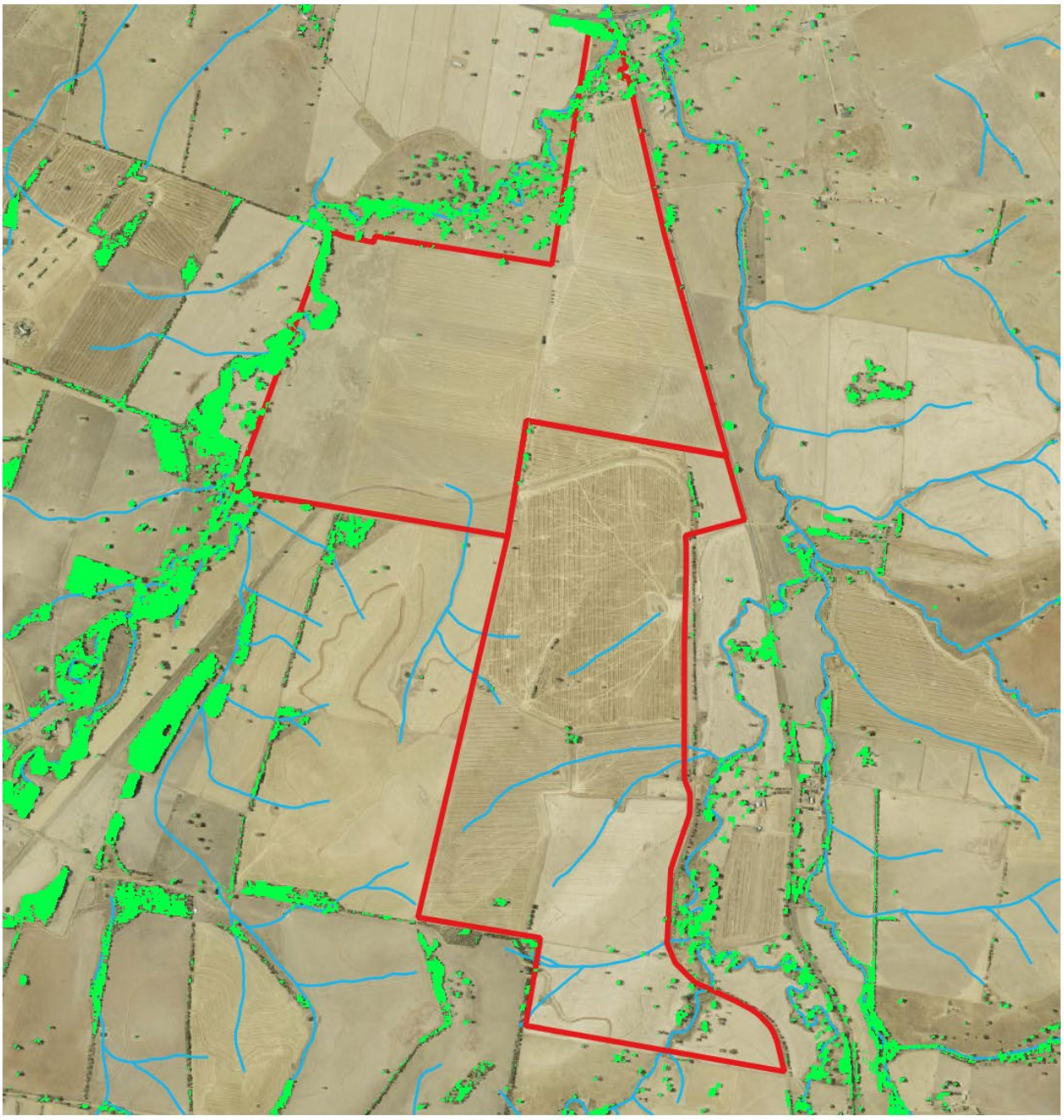
Ref:
21-858_matesgullysolarfarm_biodiversitywork
1996 imagery
Author: julie.g
Date created: 21.01.2022
Datum: GDA94 / MGA zone 55

NGH

A.5 Landuse


Landuse
Legend
Subject Land
Watercourses
Landuse Classification
1.2.0 Managed resource protection
2.1.0 Grazing native vegetation
3.2.0 Grazing modified pastures
3.3.0 Cropping
5.4.0 Residential and farm infrastructure
6.3.0 River
0
0.25
0.5
0.75
1 km
Bomen
Wagga Wagga
Oura
Rowan
Ladysmith
Gregadoo
Maxwell
Data Attribution
© NGH 2022
© Sparks Renewables, 2022
© DPIE, 2020
© ESRI, 2022
Ref:
21-858_matesgullysolarfarm_biodiversitywork
Landuse A4
Author: julie.g
Date created: 19.01.2022
Datum: GDA94 / MGA zone 55
NGH

A.6 Woody vegetation extent and FPC

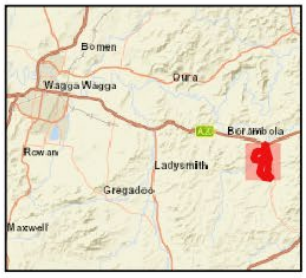


Woody Vegetation Extent

Legend

Subject Land
Watercourses
Woody Vegetation Extent
Woody Vegetation and projected foliage cover 2011

0 0.25 0.5 0.75 1 km



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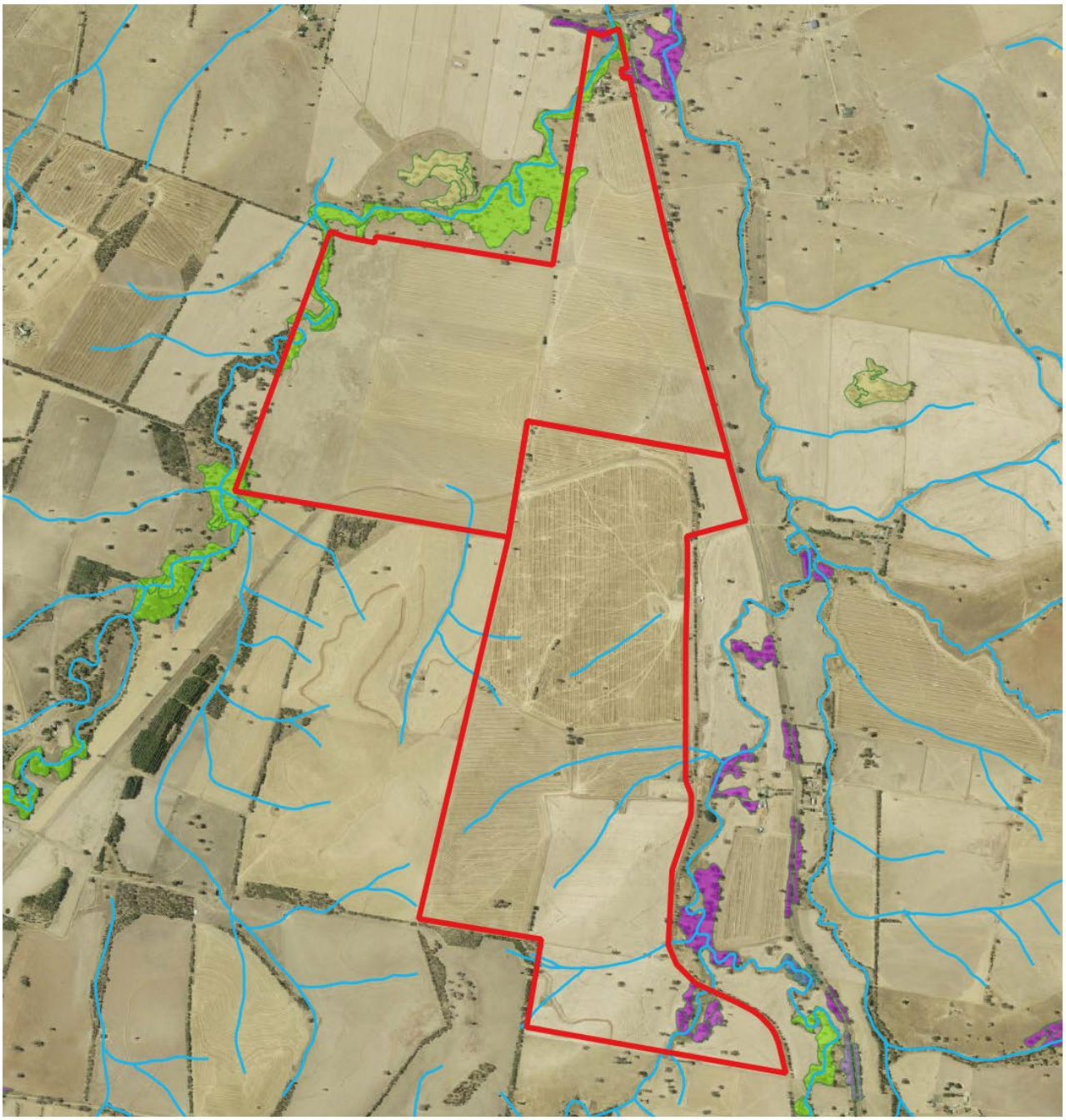
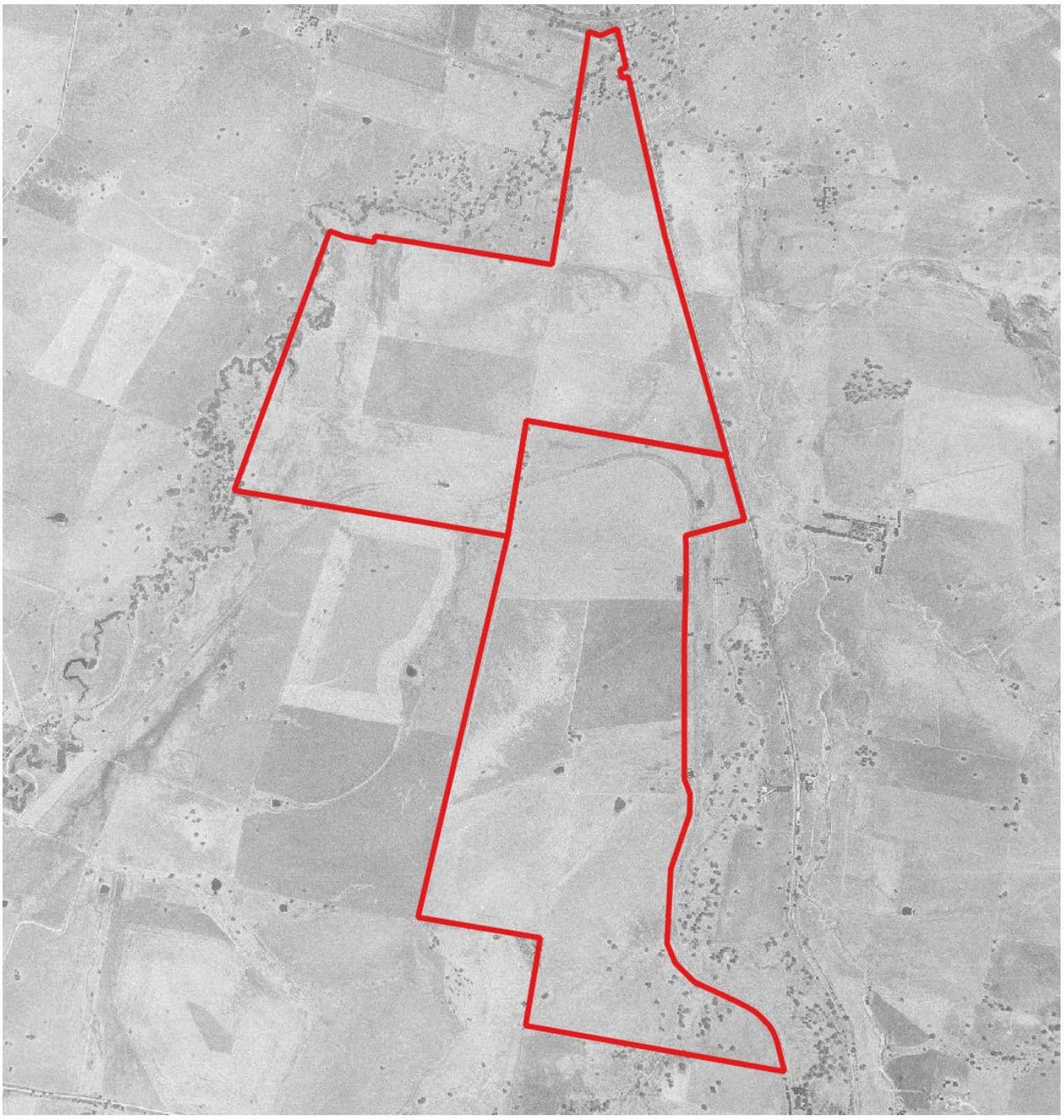
Datum: GDA94 / MGA zone 55

NGH

A.7 State Vegetation mapping



A.8 Aerial imagery 1986



1986 Aerial Imagery

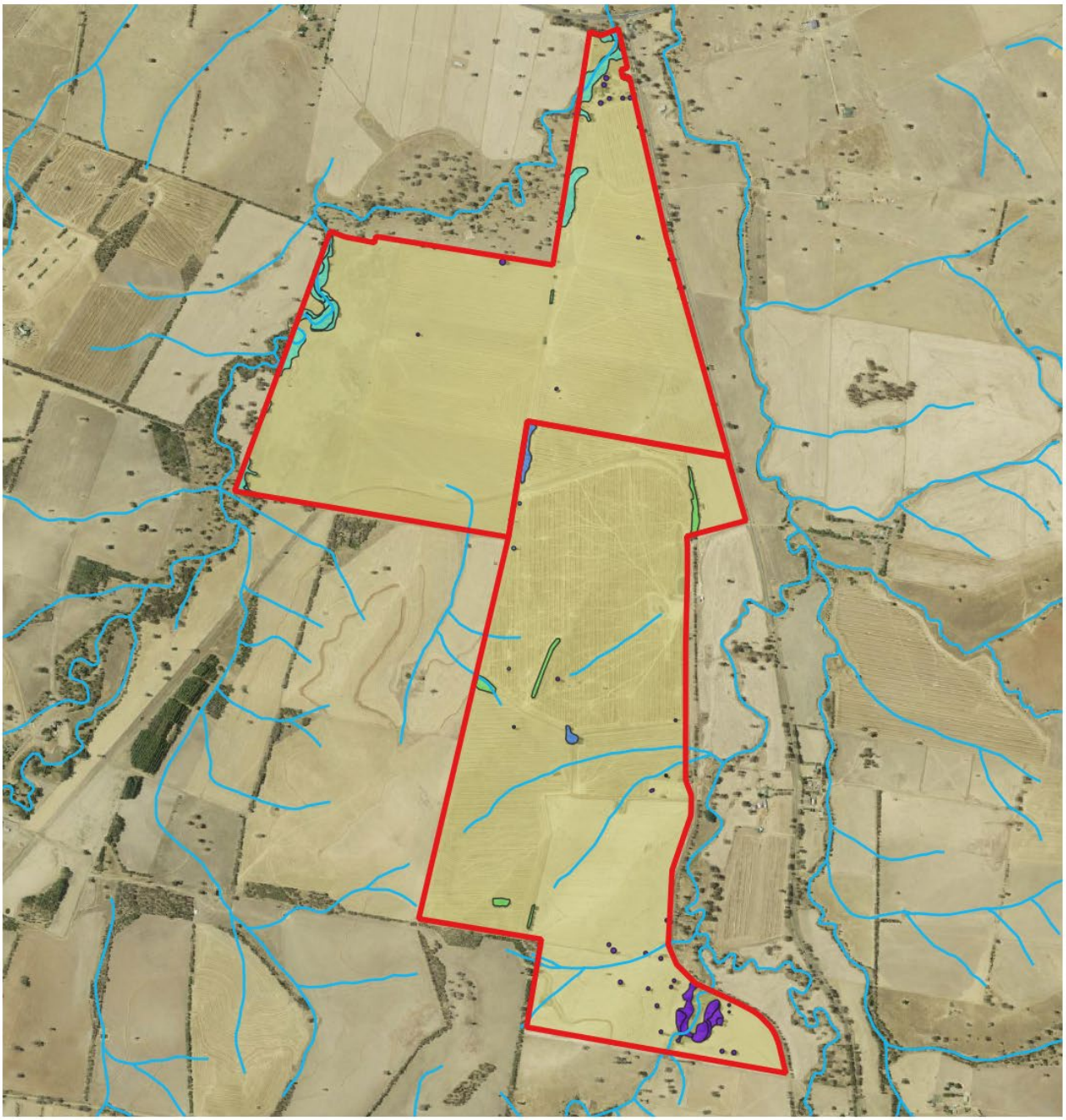
Legend
Subject Land

0 0.25 0.5 0.75 1 km

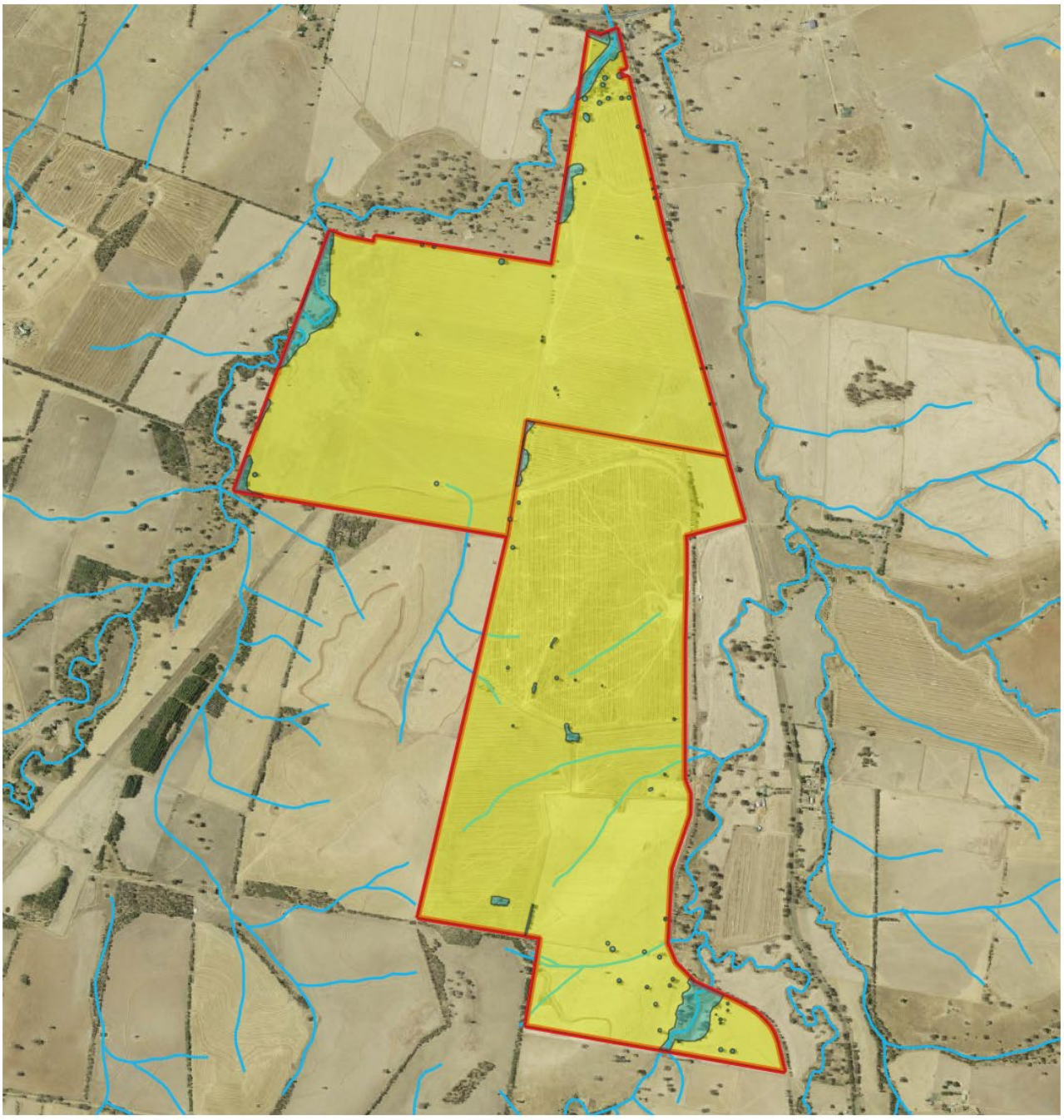
Ref:
21-858_matesgullysolarfarm_biodiversitywork
1986 imagery
Author: julie.g
Date created: 21.01.2022
Datum: GDA94 / MGA zone 55

NGH

A.9 NGH site assessment vegetation mapping



A.10 Proposed land categorisation

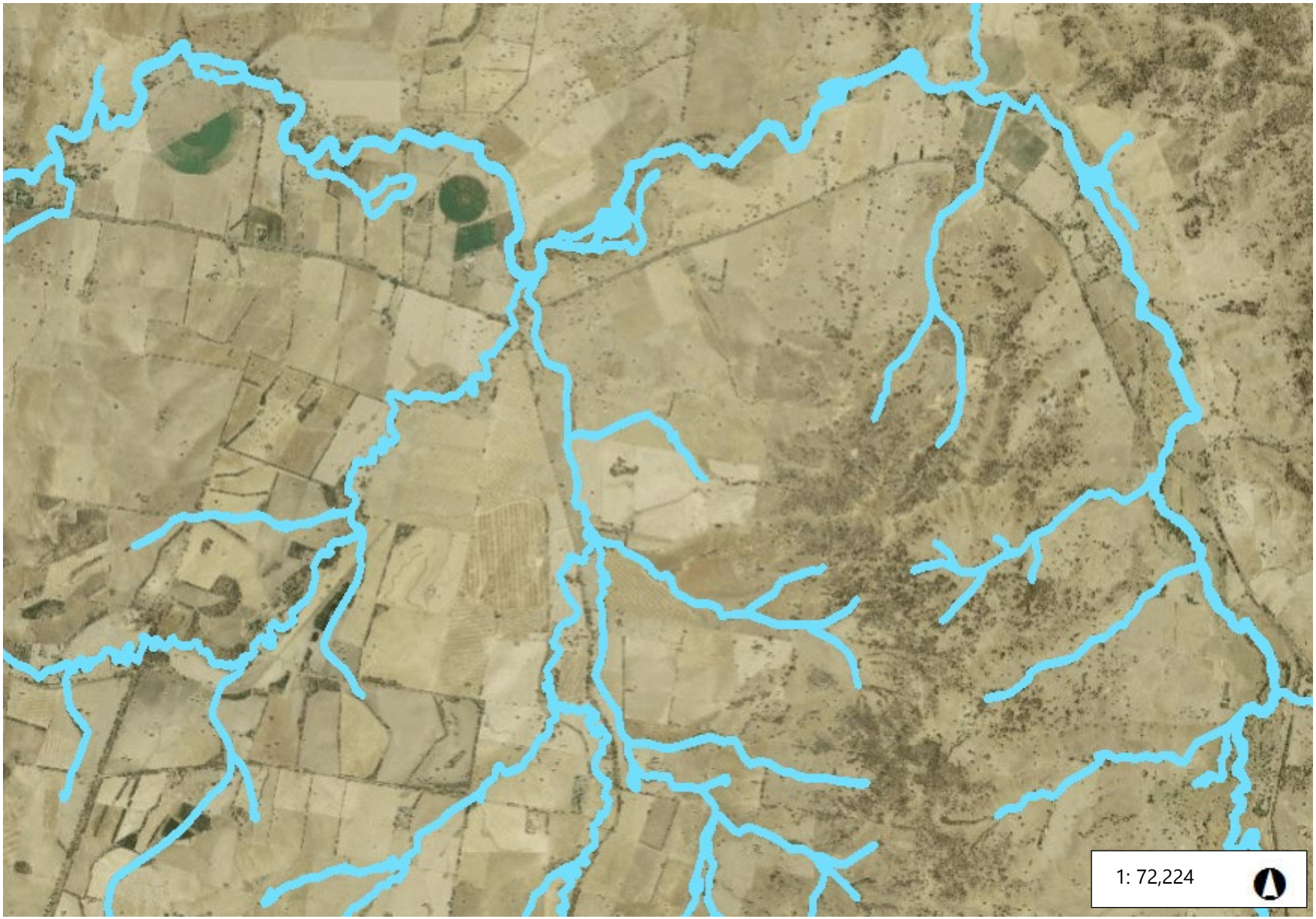


Appendix C Background searches

Scientific	CommonName
Climacteris picumnus victoriae	Brown Treecreeper (eastern subspecies)
Petaurus norfolcensis	Squirrel Glider in the Wagga Wagga Local Government Area
Petaurus norfolcensis	Squirrel Glider
Stagonopleura guttata	Diamond Firetail
Phascolarctos cinereus	Koala
Dasyurus maculatus	Spotted-tailed Quoll
Petroica phoenicea	Flame Robin
Petroica boodang	Scarlet Robin
Melanodryas cucullata cucullata	Hooded Robin (south-eastern form)
Artamus cyanopterus cyanopterus	Dusky Woodswallow
Pomatostomus temporalis temporalis	Grey-crowned Babbler (eastern subspecies)
Daphoenositta chrysoptera	Varied Sittella
Melithreptus gularis gularis	Black-chinned Honeyeater (eastern subspecies)
Chthonicola sagittata	Speckled Warbler
Grantiella picta	Painted Honeyeater
Anthochaera phrygia	Regent Honeyeater
Leucochrysum albicans var. tricolor	Hoary Sunray
Miniopterus orianae oceanensis	Large Bent-winged Bat
Myotis macropus	Southern Myotis
Falsistrellus tasmaniensis	Eastern False Pipistrelle
Pteropus poliocephalus	Grey-headed Flying-fox
Polytelis swainsonii	Superb Parrot
Lathamus discolor	Swift Parrot
Glossopsitta pusilla	Little Lorikeet
Callocephalon fimbriatum	Gang-gang Cockatoo
Falco subniger	Black Falcon
Hieraaetus morphnoides	Little Eagle
Circus assimilis	Spotted Harrier
Anseranas semipalmata	Magpie Goose
Delma impar	Striped Legless Lizard

Department of Primary Industries

Key Fish Habitat



Legend

- Key Fish Habitat - Eyre Basin
- Key Fish Habitat - Hawkesbury
- Key Fish Habitat - Central Rive
- Key Fish Habitat - Murray Darli
- Key Fish Habitat - Murray Darli
- Key Fish Habitat - Northern Riv
- Key Fish Habitat - Southern Ri
- Key Fish Habitat - Sydney Met

Notes

3.7 0 1.83 3.7 Kilometers

WGS_1984_Web_Mercator_Auxiliary_Sphere

21-Apr-2022

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Groundwater Dependent Ecosystems Atlas

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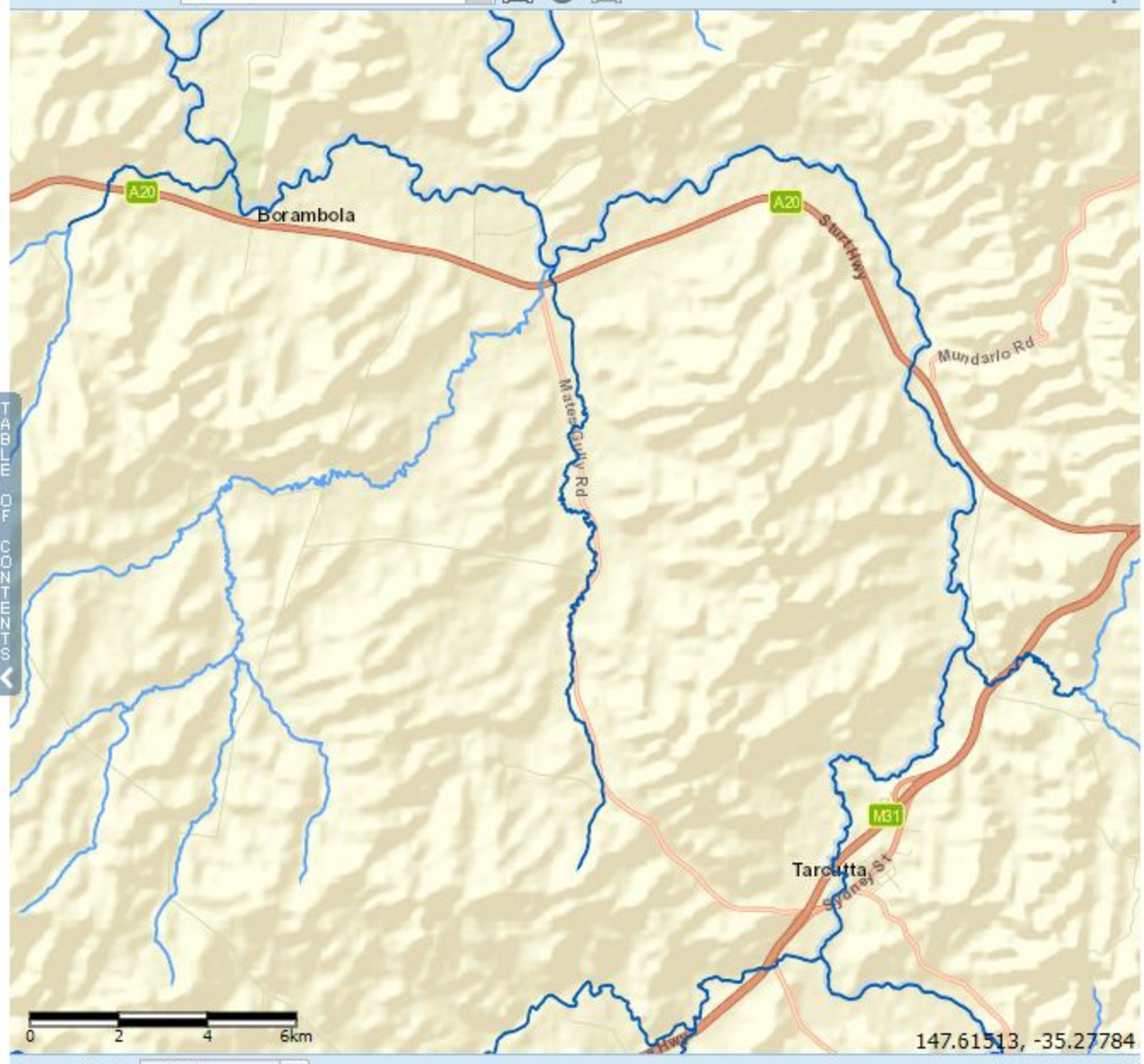

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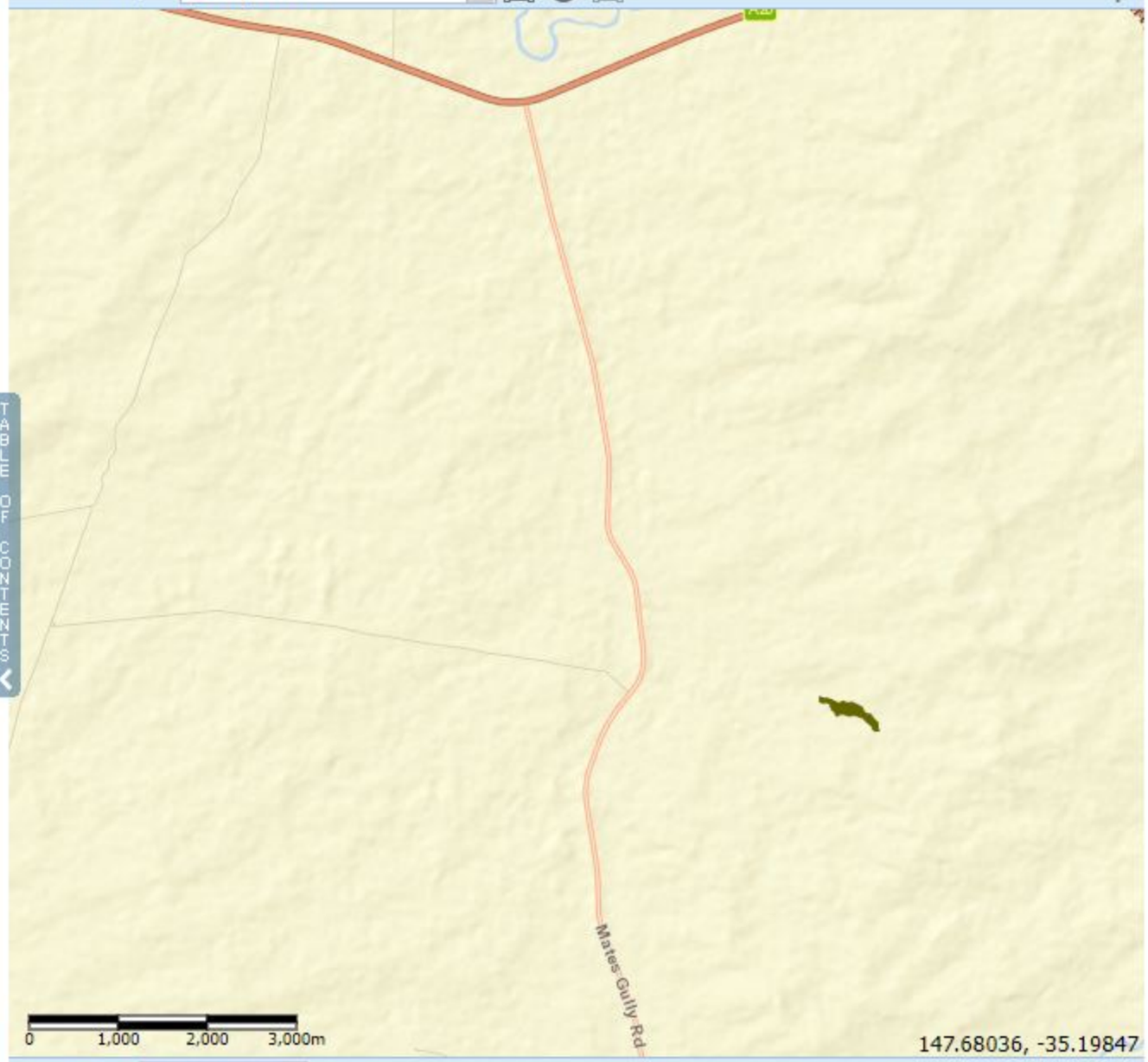

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SEARCH RESULTS

Selection Size: 0

Australian Government
Department of Agriculture, Water and the Environment

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 19-Jan-2022

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	4
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	2
Listed Threatened Species:	30
Listed Migratory Species:	11

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at http://www.environment.gov.au/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	5
Commonwealth Heritage Places:	None
Listed Marine Species:	18
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	None
Regional Forest Agreements:	1
Nationally Important Wetlands:	None
EPBC Act Referrals:	5
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar Wetlands)		[Resource Information]
Ramsar Site Name	Proximity	Buffer Status
Banrock station wetland complex	600 - 700km upstream from Ramsar site	In feature area
Hattah-kulkyne lakes	400 - 500km upstream from Ramsar site	In feature area
Riverland	600 - 700km upstream from Ramsar site	In feature area
The coorong, and lakes alexandrina and albert wetland	700 - 800km upstream from Ramsar site	In feature area

Listed Threatened Ecological Communities			[Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.
Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text	Buffer Status
Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia	Endangered	Community likely to occur within area	In feature area
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community likely to occur within area	In feature area

Listed Threatened Species			[Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Anthochaera phrygia			
Regent Honeyeater [82338]	Critically Endangered	Foraging, feeding or related behaviour likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat known to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area
Polytelis swainsonii Superb Parrot [738]	Vulnerable	Species or species habitat known to occur within area	In feature area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area	In feature area
FISH			
Galaxias rostratus Flathead Galaxias, Beaked Minnow, Flat-headed Galaxias, Flat-headed Jollytail, Flat-headed Minnow [84745]	Critically Endangered	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Maccullochella macquariensis](#) Trout Cod [26171]	Endangered	Species or species habitat known to occur within area	In feature area
[Maccullochella peelii](#) Murray Cod [66633]	Vulnerable	Species or species habitat known to occur within area	In feature area
[Macquaria australasica](#) Macquarie Perch [66632]	Endangered	Species or species habitat may occur within area	In feature area
FROG			
[Crinia sloanei](#) Sloane's Froglet [59151]	Endangered	Species or species habitat may occur within area	In feature area
[Litoria booroolongensis](#) Booroolong Frog [1844]	Endangered	Species or species habitat may occur within area	In feature area
[Litoria raniformis](#) Growling Grass Frog, Southern Bell Frog, Green and Golden Frog, Warty Swamp Frog, Golden Bell Frog [1828]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
MAMMAL			
[Dasyurus maculatus maculatus (SE mainland population)](#) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat may occur within area	In feature area
[Nyctophilus corbeni](#) Corben's Long-eared Bat, South-eastern Long-eared Bat [83395]	Vulnerable	Species or species habitat likely to occur within area	In feature area
[Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)](#) Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Vulnerable	Species or species habitat likely to occur within area	In feature area
[Pteropus poliocephalus](#) Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
PLANT			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Amphibromus fluitans			
River Swamp Wallaby-grass, Floating Swamp Wallaby-grass [19215]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Caladenia arenaria			
Sand-hill Spider-orchid [9275]	Endangered	Species or species habitat may occur within area	In feature area
Leucochrysum albicans subsp. tricolor			
Hoary Sunray, Grassland Paper-daisy [89104]	Endangered	Species or species habitat known to occur within area	In buffer area only
Prasophyllum petilum			
Tarengo Leek Orchid [55144]	Endangered	Species or species habitat may occur within area	In feature area
Senecio macrocarpus			
Large-fruit Fireweed, Large-fruit Groundsel [16333]	Vulnerable	Species or species habitat may occur within area	In feature area
Swainsona recta			
Small Purple-pea, Mountain Swainson-pea, Small Purple Pea [7580]	Endangered	Species or species habitat may occur within area	In buffer area only
REPTILE			
Aprasia parapulchella			
Pink-tailed Worm-lizard, Pink-tailed Legless Lizard [1665]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Delma impar			
Striped Legless Lizard, Striped Snake-lizard [1649]	Vulnerable	Species or species habitat known to occur within area	In buffer area only

Listed Migratory Species			[Resource Information]
Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Apus pacificus			
Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Migratory Terrestrial Species			
Hirundapus caudacutus			
White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat likely to occur within area	In feature area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat may occur within area	In buffer area only
Migratory Wetlands Species			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area

Other Matters Protected by the EPBC Act

Commonwealth Lands [Resource Information]

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Commonwealth Land Name	State	Buffer Status
Communications, Information Technology and the Arts - Telstra Corporation Limited		

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - Australian Telecommunications Commission [14965]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [14964]	NSW	In feature area
Commonwealth Land - Australian Telecommunications Commission [14966]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [14968]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [14963]	NSW	In buffer area only

Listed Marine Species

[Resource Information]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat known to occur within area overfly marine area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area overfly marine area	In feature area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area overfly marine area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat likely to occur within area overfly marine area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]		Species or species habitat likely to occur within area overfly marine area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Rhipidura rufifrons			
Rufous Fantail [592]		Species or species habitat may occur within area overfly marine area	In buffer area only
Rostratula australis as Rostratula benghalensis (sensu lato)			
Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area

Extra Information

Regional Forest Agreements [Resource Information]

Note that all areas with completed RFAs have been included.

RFA Name	State	Buffer Status
Southern RFA	New South Wales	In buffer area only

EPBC Act Referrals [Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Controlled action				
Hume Highway upgrade	2007/3330	Controlled Action	Post-Approval	In buffer area only
Hume Highway Upgrade - proposed 7km upgrade Tarcutta bypass	2009/5062	Controlled Action	Post-Approval	In buffer area only
Not controlled action				
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed	In feature area
Not controlled action (particular manner)				
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval	In feature area

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact Us page.

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Appendix D Community Engagement Management Strategy

Appendix D

Community Engagement Management Strategy (CEMS)

Mates Gully Solar Farm

We acknowledge the Traditional Custodians of the land on which this Project is located, being the Wiradjuri people, and recognise their continuing connection to land, water and community.

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Abbreviations

Term	Definition
AEMO	Australian Energy Market Operator
AEMC	Australian Energy Market Commission
AER	Australian Energy Regulator
CEC	Clean Energy Council
CER	Clean Energy Regulator
CEMS	Community Engagement Management Strategy
DPE	NSW Department of Planning and Environment
EIS	Environmental impact statement
EPA	NSW Environmental Protection Authority
IAP2	International Association for Public Participation
IPC	Independent Planning Commission
LALC	Local Aboriginal Land Council
LGA	Local Government Area
MP	Member of Parliament
NEM	National Electricity Market
RtS	Response to Submissions
SEARs	Secretary's Environmental Assessment Requirements
SSD	State Significant Development

1. Introduction

1.1 Purpose of the document

This Community Engagement Management Strategy ("CEMS") outlines the methods and tools for effective engagement with the community and stakeholders throughout the development, construction and operation of the Mates Gully Solar Farm ("MGSF" or "the Project").

This CEMS is a live document which is to be updated and revised throughout the life of the Project.

1.2 Objectives

The objectives of this CEMS are to:

- Identify effective methods to inform the community which foster trust and build positive long-term relationships with community stakeholders
- Ensure delivery of an honest, innovative, flexible and transparent community engagement process
- Identify ways to facilitate engagement and collaborate with relevant community organisations, including for input into the environmental assessment and Project development
- Ensure the broader community and stakeholders keep informed about benefits, potential impacts, and activities of the Project
- Identify effective avenues for community members to communicate any concerns and provide valuable feedback with Project personnel
- Make the community aware of the ways in which they can be involved in the project and its contributions to the community
- Ensure the commitments made to the community during the Project development stage are being met.

This CEMS identifies:

- Relevant local community and regulatory stakeholders
- Possible concerns related to the engagement of each stakeholder group
- A tailored consultation strategy for each stakeholder group
- Ongoing consultation.

1.3 Roles and responsibilities

Spark Renewables has ultimate responsibility and accountability to ensure that the Project is developed, designed, built, operated, upgraded and decommissioned in accordance with the Project's Development Consent.

Table 1 Key roles related to communication and stakeholder engagement

Organisation	Role	Responsibilities and authorities
Spark Renewables	Senior Development Manager, Head of Legal and Community, and Development Manager	• Overall management of community and public relations during development. • Face-to-face consultation, meetings, phone calls and correspondence with community members and stakeholders. • Run public information drop-in sessions.
	Communications and Community Manager	• Maintenance of the Project website including uploading of relevant project documents. • Prepare and distribute public information materials such as newsletters, flyers and media releases.
	Local Community Liaison	• Assistance with face-to-face consultation, meetings and phone calls with community members and stakeholders. • Review of public information materials.
	Head of Renewables	• Overall accountability for Project consultation.

		• High profile/national media interviews.
Environmental Consultants	Environmental assessment	• Provide technical information to assist Spark Renewables to prepare communication collateral, project updates, respond to stakeholder holder enquiries and review key messages as appropriate to ensure it meets technical requirements. • Provide figures and maps to assist with stakeholder communication.

2. Project overview

2.1 Project scope

Spark Renewables Pty Limited ("Spark Renewables" or "the Proponent") is proposing to develop Mates Gully Solar Farm, a 160 megawatt alternating current ($MW_{(ac)}$) capacity solar farm and 100MW capacity (up to 4 hours storage) Battery Energy Storage System (BESS) or DC-coupled storage at Mates Gully, NSW ("the Project" or "MGSF"). The Project would be located approximately 30 kilometres (km) east of Wagga Wagga and falls within the City of Wagga Wagga Local Government Area (LGA).

2.2 The Proponent

Spark Renewables is a leading developer, long-term owner, and operator of renewable energy projects in Australia. The Spark Renewables portfolio comprises the Bomen Solar Farm, operational since 2020, and is currently developing in excess of 3GW of solar, wind, and renewable storage projects across the National Electricity Market, including the Dinawan Energy Hub.

Spark Renewables, a member of the Clean Energy Council, is committed to energy system stability, reliability and minimising costs to customers as well as contributing to long-term sustainability and adding value to communities by investing in renewable energy infrastructure. Spark Renewables is focussed on providing local employment opportunities and giving back to the local community by establishing community funds to provide long-term, distributed benefits equitably across the community.

2.3 Project objectives

The objectives of the Project are to:

- Generate power that is reliable, secure, and clean to be dispatched to the NSW electricity grid
- Increase renewable energy generation, which is a key part of *Wagga Wagga Local Strategic Planning Statement – Wagga Wagga 2040*
- Help deliver the shortfall of electricity that will be created by the closures of coal-fired power stations across NSW in the coming years
- Offset carbon dioxide emissions, supporting the Federal Governments' international climate change commitments and the NSW Government's vision of a modern energy future
- Create local jobs and training opportunities during construction and operation
- Diversify income sources for the local community and local farmers
- Advance resource recovery solutions for end-of-life solar panels and other associated waste

2.4 Project location

The Project would be located adjacent to Mates Gully Road and the Sturt Highway at Mates Gully, NSW, approximately 30 kilometres (km) east of Wagga Wagga and falling within the Wagga Wagga Local Government Area (LGA). It would be located at 1377 Mates Gully Road, Borambola 2650 and 1069 Mates Gully Road, Tarcutta 2652.

2.5 Project benefits

Spark Renewables is committed to sharing the benefits of the Project with the community in a number of ways. These benefits will be expanded upon during Project development based on consultation with the community and stakeholders. These benefits could include:

- A community fund for diversified, long-term financial support within the local community
- A neighbour benefit scheme
- An electricity offsetting scheme
- The creation of up to 200 jobs during construction and up to ongoing 3-5 full time equivalent jobs during project operation
- Opportunities for skills training, scholarships, and community sponsorships
- A commitment to engaging local labour with a focus on employing local and Aboriginal men, women and businesses
- Enhanced access roads for bushfire management
- Establishment and support for co-locational and mutually beneficial agrisolar grazing opportunities where possible across the Project site
- Economic stimulus in Borambola and surrounding areas including Alfredtown, Forest Hill, Wagga Wagga and Tarcutta as these areas will provide accommodation, food, fuel and trade equipment and services, mostly during the construction phase.

3. Stakeholders

3.1 Contextual analysis

The Project is strategically located to take advantage of the existing electricity transmission network. The area is predominantly rural with the nearest city being Wagga Wagga. The proposal site is located near the intersection of Mates Gully Road and the Sturt Highway approximately 27 kilometres (km) east of the township of Wagga Wagga.

Wagga Wagga is a regional city in the Riverina region, renowned for its agriculture, military and education services. The name Wagga can be derived from the Aboriginal word for “crow” or Wagga Wagga “place of many crows”.

Figure 2 The project site is located in the Wagga Wagga City Council LGA

The Project sits within the Wagga Wagga LGA and is situated in the Riverina region of NSW. The Wagga Wagga LGA covers 4,826 km^2, with an estimated population of 65,770 (.idcommunity, 2022) and a population density of 13.63 persons per km^2. The site sits within the Wagga Wagga Local Aboriginal Land Council (LALC) area, and the traditional owners of the land are the Wiradjuri people.

Borambola, located approximately 4.9 km west of the Project site, is the closest locality with a population of 355 (ABS, 2016). Borambola is known for its community and recreation centre, which provides recreational amenities for visitors to the area. Borambola winery and restaurant is located 3.6km east of the community and recreation centre.

Wagga Wagga City Council has recently adopted the corporate Net Zero Emissions by 2040 target and have additionally set a wider target for the Wagga Wagga community to achieve net zero emissions by 2050. The Council has initiated strategies to abate carbon and is actively supporting projects that are mitigating climate change.

3.2 Stakeholder overview

Stakeholders are considered to be individuals or organisations that have an interest in or is impacted by the Project. Spark Renewables will consult widely as part of planning and environment assessment for the Project. Stakeholder groups include but are not limited to:

- Sensitive receiver dwellings and nearby property owners
- Community members
- Interest groups and Traditional Owners
- Energy and transmission industry bodies and agencies
- Planning authorities and regulatory bodies
- Local large and small businesses
- Renewable energy sector
- Federal and NSW state government levels relevant to planning, energy, environment, heritage, infrastructure
- Utilities
- Emergency services
- Media.

The Project Site is located within a rural setting, subject to regular background noise impacts including farming equipment, and road traffic from the Sturt Highway adjacent to the Project Site. There are 24 sensitive receivers within 3.25km of the Project Site. The contact details of individual stakeholders and organisations will be kept securely by Spark Renewables in a Project Stakeholder Database managed using a consultation management system.

Table 3 List of stakeholders their key interests and concerns

Stakeholder group	Stakeholder	Issue/Interest/Concern
Community and interest groups	Landowners within the Project site	Lease arrangements and land acquisition Impacts to dwelling Impacts to land use Water use Bushfire risk Property values and insurance premium Biosecurity
	Neighbours to the Project site	Environmental impacts Agricultural/commercial impacts Visual amenity Noise and vibration Roads and traffic Dust pollution during construction Land use Water Bushfire risk Impacts on availability of workers and accommodation Property values and insurance premium
	Wider community of Wagga Wagga City Council LGA	Environmental impacts Property values Rental market impacts Economic benefits Job opportunities
	Other organisations representing the local community, health, sports, environmental, culture and interest groups, local businesses: Country Women's Association local branches Lion's Club branches Regional Disability Advocacy Services	Grants and funding opportunities Land use Employment and supply and procurement opportunities for people with disability or disability enterprises Diversification of farming incomes
Traditional Owners	Local Aboriginal Land Council representative of Wiradjuri	Sites of significance or items of Aboriginal cultural heritage Grants and funding opportunities Environmental impacts Employment opportunities Recognition of Country
	Other Aboriginal corporations: Bundyi Aboriginal Cultural Knowledge (BACK) Aboriginal Women's Group Wiradjuri knowledge-holders	Sites of significance or items of Aboriginal cultural heritage Grants and funding opportunities Environmental impacts Employment opportunities Recognition of Country Local knowledge-sharing
Industry	Clean Energy Council (CEC)	Industry body and advocate for clean energy
	Australian Energy Market Operator (AEMO)	Energy retail market
	Australian Energy Market Commission (AEMC)	Rule maker for the NEM
	NSW Farmers Association	State industry body and advocate for farmers

Stakeholder group	Stakeholder	Issue/Interest/Concern
		Land use Water use Diversification of farmers' income Lack of workers due to COVID-19
	National Farmers Federation	National industry body and advocate for farmers Energy generation Climate change Water Sustainable development
	PV Industries	Recycling and end of life cycle services for solar panels
Business	Murray-Riverina NSW Business Chamber	Employment opportunities Local supply and procurement Grants and sponsorship opportunities
	Regional Development Australia and Industry Capability Network	Employment opportunities Local supply and procurement
Federal government	Clean Energy Regulator (CER)	Economic and clean energy regulation
	Australian Energy Regulator (AER)	Electricity network regulation
	Minister for Industry, Energy and Emissions Reduction (Department of Industry, Science, Energy and Resources)	Federal government agency for energy Investment in network infrastructure Network reliability Network connectivity between states
	Member for Riverina	Community impacts and benefits Environmental impacts Employment opportunities
NSW state government	Member for Wagga Wagga	Community impacts and benefits Environmental impacts Employment opportunities Local supply and procurement Media opportunities
	Minister for Planning and Homes	Planning and assessment process Consent authority
	Minister for the Environment and Heritage	Environmental impacts Planning and assessment process
	Treasurer and Minister for Energy	Investment in network infrastructure
	NSW Environmental Protection Agency (EPA)	Environmental impacts Recycling of solar panels
	NSW Department of Planning and Environment (DPE)	Planning and assessment process Proximity to Oolambeyan National Park Aboriginal and non-Aboriginal heritage
	Heritage NSW	Aboriginal and non-Aboriginal heritage
	NSW Department of Industry (Referral Agency)	Crown land, water and agriculture
	Department of Regional NSW (Referral Agency)	Primary industries, local land services, mining, exploration and geoscience
	Transport for NSW (Referral Agency)	Traffic and roads
	Fire and Rescue NSW (Referral Agency) and NSW Rural Fire Service (Referral Agency)	Fire safety
	SafeWork NSW (Referral Agency)	Construction and operations workforce safety
	Independent Planning Commission	Planning and assessment process Alternate consent authority
Local government	Wagga Wagga City Council	Planning and assessment process Community impacts and benefits Environmental impacts

Stakeholder group	Stakeholder	Issue/Interest/Concern
		Employment opportunities Local supply and procurement Council rates
	Riverina and Murray Joint Organisation of councils (RAMJO)	Employment opportunities Local supply and procurement
Utilities	Transgrid	Network provider
	Essential Energy	Network distributor
	Telstra	Telecommunications services
	National Broadband Network (NBN)	Broadband services
	Riverina Water	Impacts on surface and groundwater
Emergency services	NSW Rural Fire Service	Bushfire risk
	NSW Police	Hazards and risks Traffic and roads Safety and security
	NSW Ambulance	Hazards and risks Safety
	Wagga Wagga State Emergency Service	Hazards and risks
	Wagga Wagga Rescue Squad	Hazards and risks Traffic and roads
Education	TAFE – Riverina	Employment opportunities Scholarships and training
	Charles Sturt University	Employment opportunities Scholarships and training
	Wagga Wagga public schools	Grants and sponsorship opportunities
Media	Regional radio and TV stations: ABC Riverina – Wagga Wagga	Project updates Community impacts and benefits
	Social media groups	Community impacts and benefits Supplier opportunities
	Regional newspapers and magazines: The Rural	Project updates Community impacts and benefits
	Local radio stations: Edge FM Triple M	Project updates
	Metropolitan newspapers: The Gaudian Australia	Investment in renewables
	Industry online news: Renew Economy	Project updates Investment in renewables
	National and financial publications: Australian Financial Review	Project updates (major milestones) Investment in renewables

4. Communication and engagement approach

4.1 Our engagement commitment

As a member of the Clean Energy Council, Spark Renewables is signatory to the *Community Engagement Best Practice Charter for Renewable Energy Developments (CEC, 2018)*. This is a voluntary set of commitments developed by the industry peak body that we will uphold when developing, constructing and operating projects.

Spark Renewables is committed to engaging respectfully with the communities in which we develop and operate projects, to be sensitive to environmental and cultural values and to make a positive benefit-sharing contribution to the regions in which we operate.

The objectives of this CEMS are to be achieved by following the 10 commitments of the *Best Practice Charter for Community Engagement*, by which Spark Renewables will:

1. Engage respectfully with the local community, including Traditional Owners of the land, to seek their views and input before submitting a development application and finalising the design of the project
2. Provide timely information and be accessible and responsive in addressing the local community's feedback and concerns throughout the life of the project
3. Be sensitive to areas of high biodiversity, cultural and landscape value in the design and operation of projects
4. Minimise the impacts on highly productive agricultural land and explore opportunities to integrate agricultural production
5. Consult the community on the potential visual, noise, traffic and other impacts of the project, and on the mitigation options
6. Support the local economy by providing local employment, training and procurement opportunities
7. Offer communities the opportunity to share in the benefits of the Project, and consult them on the options available, including the relevant governance arrangements
8. Commit to using the Project to support educational and tourism opportunities where appropriate
9. Demonstrate responsible land stewardship over the life of the project and welcome opportunities to enhance the ecological, cultural and/or agricultural value of the land
10. During the life of the project recycle waste materials where feasible, and commit to responsible decommissioning or refurbishment/repowering of the site at the end of the Project's life.

4.2 Participation

Spark Renewables will implement a community engagement plan that follows the Clean Energy Council's Community Engagement Guidelines, which include the engagement framework based on the public participation spectrum of the International Association for Public Participation. The spectrum outlines activities beyond informing and consultation that assist with achieving community support. The spectrum is used to communicate performance of community engagement, and will inform the level of participation that stakeholders can have in the Project. The greater the impact of the Project on a stakeholder, the greater their input into the decision-making participation should be. There are five levels of participation that vary based on the stakeholder's involvement in the Project, where individuals or representatives of organisations can:

1. **Be informed** – they have access to the information about the Project and potential impacts on them.
2. **Be consulted** – they can provide suggestions and feedback about the Project.
3. **Be involved** – their material concerns relating to the Project are directly addressed in risk mitigation plan.
4. **Collaborate** – their advice and suggested alternatives are incorporated in the Project to the maximum extent possible.

5. **Be empowered** – they make the final decision that will be implemented in the Project.

4.3 Tools and methods

A range of online, in-person and offline tools and methods may be used to communicate with and engage the community and other stakeholders during the Project. Face-to-face activities will be subject to any COVID-19 public health orders in effect at the scheduled time for delivery.

Tools and methods are open to negotiation with the community and other stakeholders and may be modified in response to stakeholder feedback.

Table 4 List of tools and methods and anticipation outcome of participation

Tool/Method	Detail	Participation level
Advertising	Advertising in local newspapers and radio stations to advise of upcoming consultation opportunities and provide Project updates.	Inform
Briefings	Formal letters, phone calls, and face-to-face or virtual meetings with key stakeholders including MPs, Councillors and council staff to provide updates on the Project.	Inform
Community contact cards	Business card provided to specialists and contractors to give to community stakeholders if approached.	Inform
Community Newsletters	Project information distributed by email or in hard copy to registered stakeholders.	Inform
Door-knocks	Project representatives go door-to-door to speak with impacted landowners and neighbours and/or provide them with Project materials.	Inform Consult
Drop-in sessions	Multi-hour time periods when stakeholders can drop in to speak to the Project team and experts, view documents and plans and ask questions.	Inform Consult
Email inbox	A dedicated Project email address (info@sparkrenewables.com) for managing community and stakeholder correspondence.	Inform
Frequently Asked Questions (FAQs)	A generalised brochure (both online, sent to emails, and handed out at information sessions) responding to common questions from the community regarding project impacts, benefits, mitigation efforts, and technology.	Inform
Letterbox drops or unaddressed mail	Unaddressed collateral containing information about the Project delivered by the Project team or Australia Post.	Inform
Letters	Addressed mail containing information, clarification, response or request to a particular household, business or individual.	Inform
Media releases/statements	Proactive or responsive media announcements distributed to the media outlets and other key stakeholders to provide updates on the development application process, reaching Project milestones, address concerns, and clarify information.	Inform
Meetings	One-on-one or small group meetings to discuss Project issues and concerns in more detail. Meetings and discussions will be recorded in Consultation Manager.	Inform Consult Involve Collaborate
Phone line	A dedicated number for stakeholders to contact Spark Renewables. The number is 1300 271 419.	Inform Consult

Tool/Method	Detail	Participation level
Photography	Photos, composites, concept and artist imagery can help illustrate processes and make technical information more accessible.	Inform
Pop-up stalls	An engagement booth/stall set up at community events and centres to engage and consult with stakeholders.	Inform Consult
Posters	Printed material visualising Project information such as location of the proposed site, background information of the proponent, technology overview, approximate timeline, steps in the planning process, milestones, potential studies required to address impacts to the environment, construction activities, benefit-sharing options and mitigation of impacts on the community.	Inform Consult
Presentation	A presentation about the Project delivered to a group of interested persons, club or committee on request or by invitation, provided in digital and written form.	Inform
Project overview	A high-level summary of the Project that includes the Project scope, location (including regional and locality maps), the strategic context and rationale for the Project, the Project's potential impacts and benefits, contact information for the Project team and information on the consultation process.	Inform
Signage	Identification, directional, informational, and regulatory signs, boards and banners used to inform and direct people around the Project site.	Inform
Consultation Management System	An online secure platform to record engagement with Project Stakeholders and keep track of commitments made to or suggestions or concerns raised by Project Stakeholders.	Inform Consult Involve Collaborate
Stakeholder Database	A distribution list of contacts of individuals and/or organisations considered to be a relevant stakeholder to the Project.	Inform
Surveys	Online or offline surveys to obtain input and feedback on Project decision-making.	Consult
Website	A website dedicated to the Project including a description and overview of the Project, development application process, company information, responses to key concerns, risk management plans, maps, media releases and contact information.	Inform
Workshops	A structured method working with groups of stakeholders to identify and suggest solutions for Project issues and concerns.	Inform Consult Involve

5. Engagement to date

The views of government agencies, community members, Traditional Owners, and involved and neighbouring landowners has been sought during preparation of the Scoping Report. This includes identification of the issues to be addressed in the EIS, and opportunities for ongoing involvement during the assessment of the impacts of each stage of the Project. Initial engagement with the local neighbours was in November 2021, and a Community Newsletter was delivered to the surrounding local community in February 2022 (shown in Figure 5 below) followed by public media announcement.

Figure 5 Community Newsletter 1 – February 2022

Community Newsletter 1 – February 2022

The proposal: Mates Gully Solar Farm

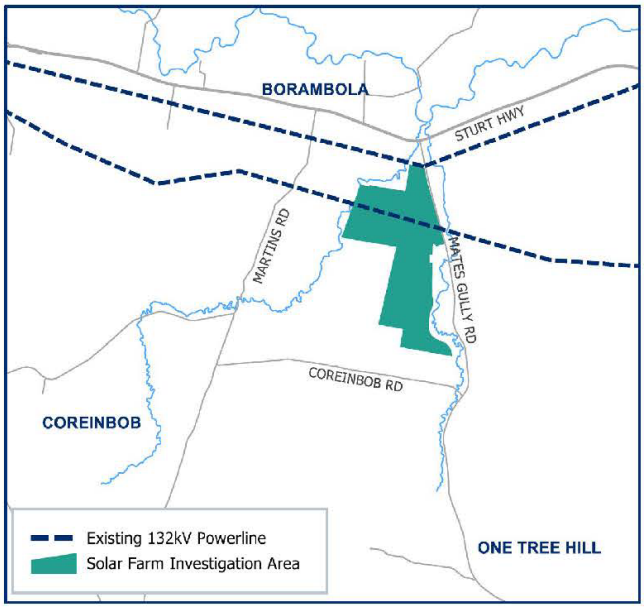
The Mates Gully Solar Farm is a proposed solar farm development to be located approximately 30km east of Wagga Wagga, between Borambola and Tarcutta (Wagga Wagga City Council Local Government Area).

The solar farm is being developed by Spark Renewables, a leading developer and long-term owner and operator of renewable energy projects.

Launch of community consultation

The project is in early stages of development and must undergo a rigorous planning and assessment process. We will undertake extensive community consultation prior to formal development application to planning authorities, and invite all stakeholders and community members to get involved and voice their questions or concerns.

We are holding virtual community meetings via Zoom on the 22nd of February 2022. Please see page 3 of this newsletter for further details. To register, go to www.matesgullysolarfarm.com.



SPARK RENEWABLES

Reach out to the project team at Spark Renewables:

1300 271 419
info@sparkrenewables.com
www.matesgullysolarfarm.com

Scan to visit the website:

KEY FACTS

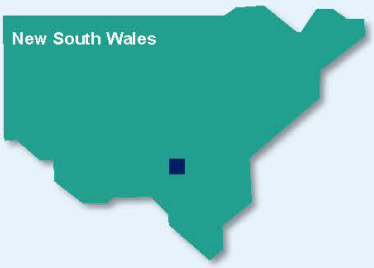
Why this site?
Excellent solar resource
Proximity to grid via existing 132kV transmission lines that cross site

Technology
Solar photovoltaic (PV) panels
Battery energy storage system

Capacity
Solar generation: ~160MW
Storage: ~100MW for 4 hours

Community
Electricity benefit scheme
Community fund
Neighbour agreements

Project status
Proposal announcement
Next virtual community meetings: 22 Feb 2022



What is proposed?

The proposed solar farm would consist of photovoltaic (PV) panels mounted onto single axis trackers that slowly rotate and follow the sun each day.

The proposal includes a containerised battery energy storage system, which will provide 'on demand' generation or 'firming' to the electricity grid.

The battery system would store electricity from the solar panels when the sun is at its peak, and then distribute this energy into to the electricity grid at other times of the day.

What is the planning approval process?

The project will be considered a State Significant Development under NSW planning policy. The NSW Department of Planning, Industry and Environment (DPIE) will assess the proposal and the consent authority will be either the Minister for Planning and Public Spaces or the Independent Planning Commission.

Sheep grazing at the Bomen Solar Farm

TECHNOLOGY OVERVIEW	
Solar Farm	
Panels:	~2x1 meters and 500-600 watts each.
Panel mounting:	Single axis trackers ~90 meters long and 80-90 panels per tracker.
Inverters:	Containerised power conversion stations to convert DC to AC power.
Materials:	Responsibly chosen low-impact materials and environmentally safe maintenance.
Battery Energy Storage System (BESS)	
Chemistry:	Lithium-ion or similar.
Dimensions:	Either 40-ft container or smaller units.

Example battery energy storage system

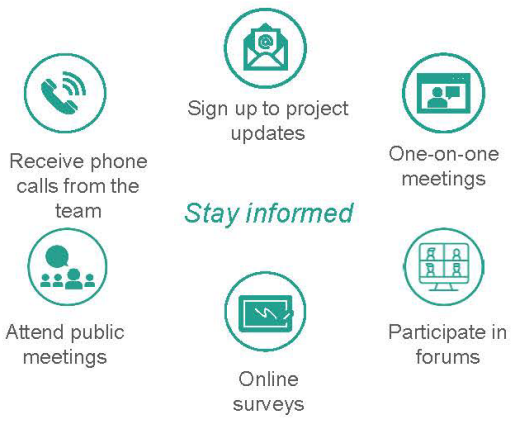
Land use

We will develop strategies to reduce impacts on the land and plan to graze sheep within the solar farm, like at Bomen Solar Farm. Fencing and water infrastructure will allow for the rotation of stock across the site and to maximise productivity.

Planning process – there is time to have your say

Staying informed

A range of options is available for you to receive project information and ask the Spark Renewables team questions.



Virtual community meetings

Due to the challenges of COVID-19, we understand it is not always safe or comfortable for everyone to join in-person community meetings. We would like to invite you to either a lunch-time or after-work virtual community meeting via Zoom. The format will be in a presentation followed by an open Q&A forum. The meetings will take place on:

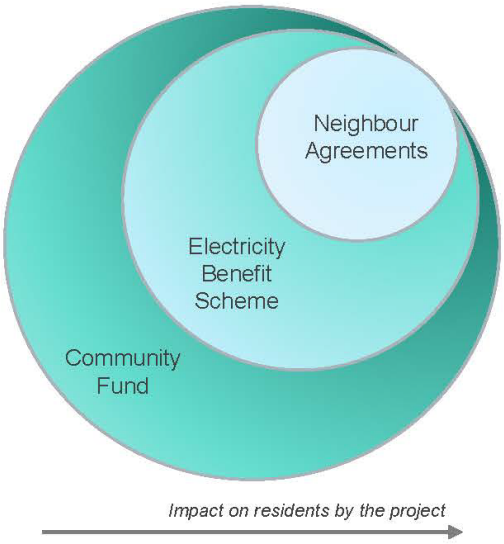
TUESDAY, 22 FEBRUARY 2022 at

- **12.30-1.45 PM**
- **6-7.15 PM**

Scan the QR code to register and receive details on how to participate:

Community benefit sharing

Long-term, distributed benefits for hosting the Mates Gully Solar Farm would be offered to the community in accordance with the level of impact on residents. These include an electricity benefit scheme, a large community fund, and neigbour agreements. We look forward to discussing ideas on benefit sharing with community members to ensure that the scheme has meaningful benefits for this area.



Indicative development timeline

Bomen Solar Farm (near Wagga Wagga)

MATES GULLY SOLAR FARM PROJECT OVERVIEW	
Project scope: 160MW solar generation & 100MW firm energy (4 hours)	
Site selection:	• Excellent solar resource with one of the highest irradiance areas in the state. • Connection to the existing 132kV TransGrid transmission lines that cross the site.
Socio-economic and environmental impacts	
Direct benefits:	• An electricity benefit scheme and community fund available to all residents. • Individual neighbour agreements. • Prioritise procurement of goods and services from nearby townships and Aboriginal-owned businesses.
Employment:	• Estimated 200 jobs across the construction and 3-5 operations and maintenance jobs. • Training, apprenticeship and employment opportunities. • Increasing First Nations income and employment opportunities – aligned with 20% long-term goal.
Land use:	• Solar farm land available to be grazed by sheep and other agricultural activities. • The land to be restored at the end life of the project. • Disturbance of native vegetation and species habitat avoided wherever possible.
Power:	• Potential to power around 90,000 Australian homes per year. • Offset the emissions of more than 300,000 tonnes of carbon dioxide per year.

Who is Spark Renewables?

Spark Renewables is a developer and long-term owner and operator of renewable energy generation assets. Our operational portfolio comprises the 100MW Bomen Solar Farm near Wagga Wagga which commenced operations in 2020. Our development portfolio includes wind, solar and storage projects in the National Electricity Market.

Spark Renewables is owned by the Spark Infrastructure Group – an owner of leading essential energy infrastructure, including generation, transmission and distribution infrastructure across Australia.

Spark Renewables is a member of the Clean Energy Council (CEC) and a signatory to the CEC's Best Practice Charter for Renewable Energy Developments.

Spark Renewables is committed to delivering diverse benefits to the community. This includes giving training and employment opportunities to local men and women and prioritising local procurement of goods and services. Spark Renewables has a particular focus on engaging Aboriginal people and businesses to support the construction and operation of the Project and intends to set targets to measure its performance against this commitment.

For questions, feedback or to sign up for future project updates either via newsletters, online forums or one-on-one calls, please register at sparkrenewables.com or call us 1300 271 419

5.1 Consultation session launch

The Project website and its first Community Newsletter were published in February 2022, and a public media announcement was made on 8 February 2022. Information in the first Community Newsletter included an introduction to the proposed Project site map, footprint of Project infrastructure, options for land use, potential assessment studies to be undertaken as part of the Environmental Impact Assessment, and information about options to be informed about the Project, including the details of the virtual community sessions.

We hosted our first two community consultation sessions on 22 February 2022 virtually via Zoom due to COVID-19 restrictions and safety concerns, and launched the Social Impact Assessment survey shortly after. A Presentation was devised for the meeting, giving an overview of the Project and the planning process. The Presentation was made available on the Project website.

Community notification of the proposed Project and community sessions was achieved through a range of mediums. This included:

- Distribution of the media release to local journalists
- Community Newsletters were delivered to residences with letterboxes within a 5km radius of the proposed site, and emailed to residences (who's details were known) and interested stakeholders via the Stakeholder Database
- Calls made to those residences whose phone numbers were publicly available
- A website pop-up activated containing the session information
- Personalised notes sent to stakeholders who have interest in the Project (e.g., federal and state ministers, Aboriginal community representatives, AEMO, DPE).

Classified ads were included in The Wagga Daily Advertiser and announcements run on the local radio station:

- Classified advertisements placed in The Wagga Daily Advertiser (10th and 16th of February 2022)
- 18 radio announcements on Triple AAA FM between 11th through to the 16th of February 2022, 3 times a day.

Attendees across both sessions included:

- 7 Spark Renewables employees
- 2 NGH consultants
- 1 Progressive Agriculture consultant
- 18 community attendees, including representatives of the NSW DPI and NSW Farmers.

5.2 Feedback during development of the Scoping Report

Feedback was received through multiple channels during the scoping phase, including over the phone, email, surveys, and during the virtual consultation sessions. Many community concerns were general in nature, regarding questions of the safety and suitability of renewables in rural areas. There was partiular concern relating to the risk management of contamination from solar farms and the responsible sourcing practices and processes in place to prevent modern slavery in manufacturing of solar panels.

Another prominent issue discussed during the consultation sessions was the concern over fire safety management of solar farms and battery units in rural areas. There was need to understand how much research is there around risk management, in particular of battery systems, and whether the Project site would be accessible to Rural Fire Service during an emergency.

Spark Renewables has had numerous communications with a local Wiradjuri knowledge-holder over the phone, email, courtesy notifications, and at the virtual community meeting. The important message recevied was that early consultation and involvement is an essential prerequisite to community support for the Project and avoiding costly mistakes down the track. Spark Renewables is committed to engaging diversely and with any stakeholder with interest or potential impact from the project.

Following the initial virtual consultation session, a link to an online Social Impact Assessment Survey (Figure 6) was shared with all the meeting participants as well as on the Project website. These concerns have been addressed in response lettters, as well as the online FAQs.

Figure 6 Social Impact Assessment Survey

Mates Gully Solar Farm - Community Values Questionnaire

1. **In what ways are you involved in the local community proximal to the proposed Mates Gully Solar Farm?**

- ◯ I live close by
- ◯ I attend school or work locally
- ◯ I am a member of a local club or community organisation
- ◯ I am a near neighbour to the proposed development
- ◯ I own a business in the area

Other

2. **How do you feel about renewable energy, generally?**

- ◯ Excellent
- ◯ Very good
- ◯ Good
- ◯ Bad
- ◯ Very Bad
- ◯ Not sure

3. **What aspects about the proposed project would you consider to be most beneficial?**

- ☐ Employment opportunities
- ☐ Investment in the local community
- ☐ Road upgrades / better access to Rural Fire Services
- ☐ Land use diversification
- ☐ Community sponsorships
- ☐ Access to cheaper electricity
- ☐ Partnerships with Local Aboriginal Land Councils
- ☐ Increased tourism
- ☐ Clean energy
- ☐ Other (please specify)

4. **What aspects of the proposed project would you consider to be your main concerns?**

- ☐ Visual
- ☐ Traffic and road safety
- ☐ Potential impacts on flora and fauna
- ☐ Increased workforce in the area
- ☐ Land use
- ☐ Water
- ☐ Noise
- ☐ Fire
- ☐ No Concerns
- ☐ Decommissioning
- ☐ Size and scale
- ☐ Waste management
- ☐ Responsible sourcing of materials
- ☐ Other (please specify)

5. **What aspects do you value most in the area?**

- ◯ Landscape
- ◯ Community / family
- ◯ Cultural Heritage
- ◯ Farming
- ◯ Work opportunities
- ◯ Native flora & fauna
- ◯ Local History
- ◯ Other (please specify)

6. **What landscape features would you consider as having the most scenic value in the area?** (i.e. creeks, native bushland, grazing land etc)

7. **What is your overall attitude towards the Mates Gully Solar Farm?**

- ◯ Supportive
- ◯ Neutral
- ◯ Opposing

8. **Would you like to be involved in the project?**

- ☐ I would like to receive newsletters and updates (via phone and/or email)
- ☐ I would like to offer my services or business during construction
- ☐ I would like to provide local knowledge

9. **What kind of benefits should the project provide to the community?**

- ◯ Community fund distributed to neighbours closest to the project
- ◯ Community fund that would reach wider community, such as Aboriginal community groups, farmers, youth, vulnerable groups.
- ◯ Discounted electricity options
- ◯ Improving local amenities and facilities
- ◯ Environmental revegetation programs
- ◯ Your suggestion

10. **Contact Details** (Optional)

Name:	
Telephone:	
Email:	
Address:	

11. **Do you have any other comments or feedback you would like to share?**

6. Future engagement

6.1 Engagement during development of the EIS

Issues raised during engagement will inform the environmental assessment and the preparation of the EIS.

Spark Renewables will continue early-stage engagement with the community, through information sessions and collection of feedback, to develop a community benefit sharing scheme, taking into account the level of impact on residents.

Other communication and stakeholder engagement activities during the preparation of the EIS would include:

- Community Newsletters including key information, options for receiving information and providing feedback to be distributed electronically and via letterbox dropping or unaddressed mail
- Media releases, interviews and paid advertising in radio and local newspapers to share information about the Project and address key concerns raised by the community members
- Open community drop-in sessions (face-to-face, phone, virtual) with expert presentations and Q&A to stakeholder groups using visual aids such as presentations, posters and booklets
- Project webpage kept up-to-date with news, announcements and maps and communications materials
- Project-specific Social Impact Assessment survey that provides an opportunity to submit feedback anonymously and/or individually
- Ongoing responsiveness to the Project phone line and email inbox
- Ongoing one-on-one consultation with landowners and neighbours within the Project site
- Briefings and presentations to Wagga Wagga City Council and state and federal MPs
- Meetings with other stakeholders and government agencies, as required
- Ongoing responsiveness to the Project phone line and email inbox.

Table 7 Delivery plan from receipt of SEARs to lodgement of the EIS

Activity/tool	Purpose	Timing	Stakeholders
SEARs received	To confirm the requirements for the environmental assessment of the solar farm and BESS (or dc-coupled energy storage)	Q2 2022	Project team DPE
Update the CEMS	As required by the SEARs or based on community feedback to date	Q3 2022	Project team
Briefing letters Community Newsletter	To advise key stakeholders about the SEARs upcoming consultation opportunities and offer a meeting	Q3 2022	Community & interest groups Wagga Wagga council staff Federal MP State MP
Meetings (face-to-face, phone or virtual) Presentation	To discuss SEARs and upcoming consultation opportunities	Q3 2022	Community & interest groups Wagga Wagga council staff Federal MP State MP
Community newsletter Website Advertising	To promote the community workshops	Q3 2022 At least 28 days	Local government Community & interest groups Businesses Media
Community workshops/meetings	To provide an opportunity to provide input into the preparation of EIS and contribute ideas for the Community Benefit Scheme; To provide an opportunity for people to speak informally to the Project team	Q3 2022	Community Traditional Owners Businesses
Community Newsletter Newspaper and radio advertising/media interviews Website Notice board announcements Key community group distribution lists	To provide the community with a Project update	Q3 2022	All
Expert presentations	To present the draft findings of EIS to the community with Q&A	Q3 2022	Community & interest groups Traditional Owners Businesses Local government
Lodge EIS	To provide a comprehensive environmental assessment of the solar farm and BESS (or dc-coupled storage)	Q4 2022	DPE
Prepare EIS summary document	To provide an accessible, plain English summary document of community consumption during exhibition	Q1 2023	Project team

6.2 Engagement during exhibition of the EIS

This engagement would build on the communication and stakeholder relationships formed during the Scoping and EIS preparation phases and would continue to provide information about the Project and seek feedback from the community and stakeholders on the impacts and proposed mitigation measures in the EIS.

The EIS will be placed on public exhibition for a period of at least 28 days, or as per any requirements outlined in the SEARs, and may be extended on request and with the agreement of Spark Renewables.

Letterbox drops, drop-in sessions, targeted stakeholder briefings and advertising will be undertaken during this period to provide opportunities for the community and other stakeholders to ask questions of the Project team and review Project documents.

During the exhibition periods, any stakeholder may make a written submission on the EIS and lodge this with DPE through the Major Projects website.

Table 8 Delivery plan for public exhibition of the EIS

Activity/tool	Purpose	Timing	Stakeholders
Community Newsletter Media release Website updates Newspaper and radio advertising Online surveys Phone Posters/Booklets	To advise the community about public exhibition, opportunities to speak to the Project team and how to make a submission	First week of public exhibition	Community Traditional Owners Media Businesses
Briefing letters Media release Community Newsletter	To advise key stakeholders about public exhibition process, consultation opportunities and offer a meeting	First week of public exhibition	Council Federal MP State MP Industry (eg AEMO)
Letterbox drop	To advise residents about public exhibition, opportunities to speak to the Project team and how to make a submission	First week of public exhibition	Landowners, neighbours and distribution area
Meetings Presentation (verbal/slides) Option of virtual meeting	To present an overview of the EIS to key stakeholders	As scheduled	Council Federal MP State MP
Drop-in sessions (number to vary as required)	To provide an opportunity for residents to speak to the Project team about the EIS, view information, ask questions and find out how to make a formal submission	Third week of public exhibition	Neighbours Community Businesses Media Local government
Presentations, by request	To present an overview of the EIS, answer questions and inform groups how to make a formal submission	As scheduled	Community, Traditional Owners, and interest groups Council
Submissions close	To collate submissions for response	After 28 days or per agreed exhibition period	All

6.3 Engagement following exhibition of the EIS

Following each exhibition period, Spark Renewables will respond to submissions received during exhibition of the EIS. Spark Renewables may undertake further engagement to respond to issues raised. If this process extends over a long period of time, Spark Renewables will provide regular updates on the status of the Project. This includes briefing notes and the offer of meetings with councils, state and federal MPs and other stakeholders.

Subject to obtaining approvals, Spark Renewables will continue engagement with the stakeholders and the community during the construction phase. Spark Renewables will develop and lead a construction community engagement program.

The construction program will respond to community and stakeholder expectations on ongoing involvement. Spark Renewables will continue to be the single point of contact about the Project for all stages of the development.

Once the Project is operational, Spark Renewables will continue to maintain a high level of engagement with the community, and regular updates to the Project website and in local media.

7. Resources

This CEMS has been prepared in consideration of the following guidelines and references:

- Large-scale solar energy guideline: For State Significant Development, December 2018, NSW Department of Planning and Environment
- Undertaking Engagement Guide, 2020, NSW Department of Industry, Planning and Environment
- Community Guide to EIA 2019. NSW Department of Industry, Planning and Environment
- Australian Guide to Agrisolar for Large-Scale Solar, 2021, Clean Energy Council
- A Guide to Benefit Sharing Options for Renewable Energy Projects, 2019 Clean Energy Council.

Containing a community profile and a socio-economic overview of the area, the CEMS establishes detailed consultation strategies specific to the needs of each stakeholder group, as well as associated risk analyses and mitigation measures.

The CEMS will be maintained and revised to ensure consultation during the development of the EIS remains consistent with the:

- State Significant Development Guidelines, 2021, NSW Department of Industry, Planning and Environment
- Social Impact Assessment Guideline, 2021, NSW Department of Industry, Planning and Environment
- Technical Supplement: Social Impact Assessment Guideline for State Significant Projects, 2021, NSW Department of Industry, Planning and Environment.

Appendix E Heritage (Aboriginal) sensitivity advice

Reference: 21116
13 October 2021

John Zammit
Spark Renewables
19-21 South Steyne Road
Manly NSW 2095

Dear John,

RE: HERITAGE SENSITIVITY ADVICE FOR MATES GULLY SOLAR FARM

Austral Archaeology Pty Ltd (Austral) has been engaged by Spark Renewables to provide Heritage Advice for the proposed Mates Gully Solar Farm located near Borambola in the eastern Riverina of New South Wales (NSW) [the study area] (Figure 1). This advice is intended to assist Spark Renewables in understanding the Aboriginal and non-Aboriginal heritage sensitivity and constraints which may apply to the study area. The study area is ~450 hectares in area (Figure 2).

The project is currently in the early stages of planning and this advice provides a preliminary overview of the Aboriginal and historical heritage constraints for the project. This brief report outlines the desktop review of previous major archaeological studies and has created a predictive model for the study area based on existing Aboriginal Heritage Information Management System (AHIMS) records of Aboriginal heritage sites in the local area. A brief review of the historical events relating to the property was also completed.

The scope of this heritage advice includes:

- undertaking a search of the AHIMS database to determine whether previously recorded sites are located within or near the study area;
- mapping known heritage sites and providing a description of any previously recorded sites;
- identifying Aboriginal parties which would have a potential interest in the project;
- searching non-Aboriginal heritage databases and registers;
- briefly discussing the findings and the risk associated with constructing renewable energy infrastructure; and,
- providing recommendations for further archaeological investigation.

Section 87 of the *National Parks and Wildlife Act 1974* (NPW Act) makes it a strict liability offence to knowingly or unknowingly harm Aboriginal objects or declared Aboriginal places without an Aboriginal Heritage Impact Permit (AHIP), or in the case of State Significant Infrastructure (SSD), an approved Environmental Impact Statement (EIS). Harm is defined under the NPW Act as “any act or omission that destroys, defaces or damages the object or place or in relation to an object, moves the object from the land on which it had been situated”.

Historic heritage is protected under Section 136 of the *NSW Heritage Act 1977* (Heritage Act), which gives the Minister the power to order work to cease if it may cause harm to a heritage item, or Section 139 of the Heritage Act, which prevents the undertaking of any works which may result in archaeological material being discovered or harmed except where the proponent has obtained a permit under Section 140 of the Heritage Act or, in the case of SSD, an approved EIS.

SEARCH THE ABORIGINAL HERITAGE INFORMATION MANAGEMENT SYSTEM (AHIMS) DATABASE

An extensive search of the AHIMS database was conducted on 23 August 2021 (Client service ID: 615847). The search identified 95 Aboriginal archaeological sites within a 20-kilometre search area centred on the proposed study area (Figure 3). One of these registered sites, a scar tree, is located on the northern boundary of the study area (AHIMS #56-2-0217). The mapping coordinates recorded for these sites were checked for consistency with their descriptions and location on maps from Aboriginal heritage reports where available. These descriptions and maps were relied upon where notable discrepancies occurred.

Spatial information for this report is displayed using the GDA94 Datum. Where AHIMS site records were provided on a different datum, they were converted using standard functions in QGIS software.

Table 1 Individual sites identified within 20 kilometres of the study area.

Site type	Occurrence	Percentage (%)
Modified Tree (Carved or Scarred)	79	83
Artefact	10	11
Ochre Quarry	2	2
Potential Archaeological Deposits (PADs)	2	2
Aboriginal Resource and Gathering	1	1
Hearth	1	1
TOTAL	**95**	**100%**

SEARCHES OF NON-ABORIGINAL HERITAGE REGISTERS AND DATABASES

Austral undertook a review of the State Heritage Inventory (SHI), which includes the State Heritage Register (SHR) and Local Environmental Plan (LEP) Schedule 5 listings. There is one site located on the SHR and on the Wagga Wagga Local Environmental Plan 2010.

- Tarra Wingee and Outbuildings

Austral has completed a Preliminary Heritage Assessment (PHA) with the aim of determining the significance of this listing.

PREVIOUS ARCHAEOLOGICAL ASSESSMENTS IN THE REGION

A review of major studies and archaeological assessments in proximity to the study area has been undertaken with the aim of identifying trends in the location of archaeological sites within the local region. This includes a brief assessment of ethnographic information, soils, geology, landform, disturbance and resource information pertinent to the study area. The outcome of this review is outlined in Table 3.

Table 2 Archaeological studies undertaken in the vicinity of the study area.

Author	Year	Details
L'Ostre-Brown	1994	Undertook a 31.5km archaeological survey from East Wagga through Ladysmith, Big Springs and to Book Book as part of an assessment for a Telecom fibre optics cable. Background research, and correspondence with the regional archaeologist, identified two areas of archaeological potential along the proposed route; these included Kyeamba Creek and Turkey Flat where it crosses Kyeamba Creek. The field survey did not locate any heritage sites along the proposed fibre optic route.
Shawcross	1998	Completed an archaeological assessment of the Telstra proposed fibre optic cable between Gundagai and Borambola. Shawcross did not find any archaeological material along the proposed route although he does comment that he 'remains surprised at the lack of archaeological finds' however, he goes on to explain that the lack of evidence may be attributed to the micro-landscape. Shawcross theorises that the creeks only penetrate a short way into the dissected country and the ridges are isolated features that do not offer a continuous, easy route to the plateau.' (Shawcross 1998:4).
SMEC	1998	SMEC completed an archaeological assessment for the proposed State Highway No 2 – Hume Highway Truck Changeover Facility at Tarcutta. Two small study areas were assessed for archaeological sites or potential and it was determined that both areas had neither sites, nor potential for sites. The lack of potential is attributed to both the location in the landscape and prior disturbance.
Kelleher and Nightingale Consultants	2007	Completed an archaeological assessment which included five separate sections of the proposed Hume Highway upgrade. The sections relevant to this study area are Sturt Highway to Tarcutta and Kyeamba Hill which totals 110km of proposed highway upgrade. The archaeological survey for the Sturt Highway to Tarcutta portion of the proposed upgrade identified five heritage sites including three scarred trees and two isolated finds. All the scarred trees recorded during the survey were located on hillslope landforms. Two flakes created on fine grain siliceous material were located on the floodplain on the eastern side of the Hume Highway. Three areas of archaeological potential were also located during the survey. The Kyeamba Hill portion identified 15 Aboriginal heritage sites and nine area of archaeological potential. The sites included 10 scarred trees, two artefact scatters and three isolated finds. All of the sites were located on lower slope landforms. The dominant raw material type in these sites was quartz.
Kelleher and Nightingale Consultants	2009	Undertook an archaeological assessment of the proposed Tarcutta bypass which was proposed to start approximately 7km from the north of Tarcutta to re-join the Hume highway just south of Humula Road. An interchange was proposed just north of the Mates Gully Road intersection. The assessment identified areas just north of Tarcutta and along Tarcutta creek south to the intersection of Mates Gully Road where gendered ceremonial sites were used for teaching and traditional business. These sites are ranked as having very high and high cultural significance. The archaeological assessment undertaken for the proposed bypass identified 15 Aboriginal heritage sites including scarred trees and artefact scatters. Two PADs were also located, and later through test excavation, determined to be artefact scatter sites. The artefact scatters were located in areas of high visibility, especially where erosion was occurring. The dominant raw material type was quartz comprising 97% of the artefacts. The scarred trees were generally located on hillslopes.
OzArk	2014	Completed a due diligence assessment for the proposed NBN facility at Bomen near Wagga Wagga. The assessment was completed as a desktop only, as OzArk has completed numerous other surveys in the vicinity of the study area. The desktop determined there would be no impact to Aboriginal heritage within the study area. The study area is located adjacent to AHIMS site # 56-1-0043 (East Bomen 1) which is a basalt dominated artefact scatter.

Author	Year	Details
OzArk	2018	Completed an Aboriginal Cultural Heritage Assessment (ACHA) at the proposed Forest Hill Pump Station. The assessment did not identify any new sites, however, did relocate five previously recorded sites within the vicinity of the study area. The sites were considered to have low archaeological significance, although it was recommended that they be protected from harm during the construction. All sites were located on floodplain slope.
OzArk	2019	Was engaged by Wagga Wagga City Council to complete an ACHA for a proposed cycle path within Pomingalarna Park. The assessment identified five heritage sites including ochre, scarred tree and a cultural area. The cultural area is restricted so minimal details are publicly available. Sites were generally located on slopes.

Table 3 Overview of landscape features

Information	Details
Ethnographic	The study area is located in the south-east region of the Wiradjuri language group. The Wiradjuri language group is the largest in NSW and extends across the central west and south-central west of the state. The language group consists of one single basic language with various dialects throughout the region. During previous assessment work in the area, Austral has identified James Ingram, Mark Saddler and Peter Ingram as possible interested parties in the local area. There are no Native Title claims or determinations covering the study area.
Landscape	The study area is situated within the South Western Slopes Bioregion (Eardley 1999) which consists of foothills and ranges comprising the western fall of the Great Dividing Range. The study area is located predominantly on the Abercrombie geological formation which comprises brown and buff to grey thinly to thickly bedded fine to course grained mica-quartz sandstone interbedded with laminated siltstone and mudstone. Discrete pockets of chert occur within the formation (Thomas, O. and Pogson, D.J. 2012). Soil landscapes within the study area consist of the Murrumbidgee-Tarcutta Channels and Floodplains and the Ardah Hills and Ranges. The Murrumbidgee-Tarcutta Channels and floodplains are characterised by channels, floodplain and terraces of Murrumbidgee tributaries on Quaternary alluvium. The Ardah Hills and Ranges consist of rolling hills, low ranges and peaks on Ordovician quartzone greywacke, slate, phyllite and schist with a general elevation of 250 to 720m and a local relief of 200m (Mitchell 2002:95) The Murrumbidgee River is the major water source for the region, however, closer permanent water is available from Tarcutta Creek, a major tributary of the Murrumbidgee. Mates Creek and Coreinbob Creek border the study area, both being substantial 3rd order creeks. The junction of these three creeks just north of the study area indicates the landscape would have had constant access to fresh water and sustained substantial resources making it an optimal area for occupation. Austral has considered all landscape features including current and prior waterways (Figures 4 and 5).
Disturbance	In developing the predictive model, Austral reviewed the ground surface disturbance of the study area. Historical aerials from the 1980s onwards were reviewed, however these do not indicate any major changes to the land; for instance, there is no evidence of major infrastructure. It is therefore likely that the study area underwent vegetation clearing prior to 1980.

ABORIGINAL HERITAGE PREDICTIVE MODEL

Based upon the results of these major background studies and an analysis of previously recorded sites in the local region, Austral has been able to develop a predictive model relating to the type and character of Aboriginal cultural heritage sites that are likely to exist in the study area and where they are more likely to be located. The predictive model indicates that:

- The most common site types in the region include modified trees and artefacts (isolated or scattered).
- Less common sites which could also occur include Potential Archaeological Deposits (PADs).
- The ochre quarry north of the study area is an outlier in the model and it is not expected that another would occur in the area.
- It is unlikely that art sites, grinding grooves, stone quarries or stone arrangements are present in the study area due to historic disturbance.
- Aboriginal heritage sites are most likely to occur between 100 metres from water. However, the site type has a further impact on this distance:
  - Artefact sites are most likely to occur within 200 metres from water.
  - Modified trees are most likely to occur within 100 metres from water.
- Most heritage sites will occur on the Murrumbidgee- Tarcutta Channels and Floodplains soil landscape.

Figure 7 visualises the sensitive areas based on the predictive model. Areas of high (red) sensitivity have more than one landscape feature which would indicate the presence of Aboriginal heritage sites whereas areas of moderate (pink) sensitivity have good access to current or past water sources. Areas of Moderate/High are located where significant landscape features are found; however, aerials indicate these locations have been subject to significant disturbance. Areas of high and moderate sensitivity should be targeted for archaeological survey during the Aboriginal Cultural Heritage Assessment.

A statistical analysis of the AHIMS results is attached as a digital appendix to this report.

HISTORICAL HERITAGE VALUES

The study area forms part of the numerous blocks of land that were allocated to pastoral stations which were established following European settlement in the area from the 1830s onward. The Tarcullah run, later renamed Borambola, was taken up in the 1830s by Colonial Secretary Alexander Macleay and his son George Macleay. In 1851, Borambola was purchased by John Gordon, who had worked for Macleay as a manager, and it was at this time the old Borambola homestead was built. The more recent Borambola homestead was built in 1878 whilst the property was under the ownership of John Donnelly (Austral 2021).

In 1910, the Borambola run was subdivided, with the study area forming parts of portions 17, 29, 38, 39, 40, 42, 43 and 49. Tarra Wingee and outbuildings is located on portion 43, which was purchased in 1912 by Alfred Thomas White, who also purchased block 29. Tarra Wingee homestead was most likely built by White. This assumption has been made on the basis that White represents the first confirmed occupation of this part of the study area, however it was not possible to confirm this at present. The homestead is a pise build with a hip roof and bullnose veranda (Austral 2021).

Also present within the study area, on block 42, is the Borambola railway station and a railway line which connected Wagga Wagga to Tumbarumba. The section of the railroad between Wagga Wagga and Humula, including Block 42's station and railway line, was officially opened in 1917, with the remaining railway line to Tumbarumba opening in 1921 (The Sun, 10 March 1921, pg3). The railway was closed in 1975 and only the goods shed remains.

The Preliminary Historic Heritage Assessment (Austral 2021) confirms the likelihood of historical archaeological remains being located within the study area are high for archaeological remains relating to: the original Borambola run, the train line and station and the Tarra Wingee homestead and outbuildings.

RISK ASSESSMENT

Ground impacts associated with the construction of solar farms include clearing of vegetation and potential ground levelling. Depending on the method of construction, racking may be installed into the ground and the solar panels placed onto the racking. Additionally, vehicle tracks, transmission lines and compounds may be constructed to facilitate the operation of the solar and wind farm.

Due to the nature of solar farms, impacts to Aboriginal and non-Aboriginal heritage sites can often be avoided. The predictive model indicates Aboriginal heritage sites are most likely to occur in proximity to current or past waterways; avoidance of these features, if possible, could reduce impacts to Aboriginal heritage sites. Table 4 outlines the potential levels of risk to heritage sites. The risks have been attributed values based on the average size of each heritage site and potential location within the landscape and the potential to avoid impact by relocating the infrastructure.

Table 4 Potential risk to heritage sites.

Site type	Solar	Ancillary Activities
Artefact Scatter	Moderate	Moderate
Aboriginal Resource and Gathering	Low	Low
Burials	Low	Low
Hearths	Moderate	Moderate
Modified Trees	Moderate	Moderate
Non-Aboriginal heritage	Moderate	Moderate
PADs	High	High
Midden	Low	Low
Fish Trap	Low	Low
Ochre Quarry	Low	Low

NEXT STEPS AND FURTHER INVESTIGATION

The register searches, preliminary research and sensitivity mapping undertaken for this assessment will meet the requirements of the Preliminary Environmental Assessment and Scoping Report. This information should be included in the documents.

Based on our understanding of the heritage potential within the study area it is recommended that:

1. As the predictive model and background research determine it is likely for Aboriginal heritage sites to be present within the study area, an Aboriginal Cultural Heritage Assessment (ACHA) should be undertaken to investigate the potential impacts to Aboriginal cultural heritage; this should be undertaken in accordance with the Code of Practice for the Archaeological Investigation of Aboriginal objects in NSW (DECCW 2010).
2. Consultation with the local Aboriginal community, in accordance with the *Aboriginal Cultural Heritage Consultation Requirements for proponents* (DECCW 2010), should be undertaken as part of the ACHA. Early commencement of consultation is recommended as it allows the Traditional Owners and custodians of the land to have input into the early stages of the project.

3. A Statement of Heritage Impact (SoHI) should be prepared in respect of managing potential impacts to the non-Aboriginal heritage values of the site, particularly in relation to Tarra Wingee and Outbuildings and the railway line intersecting the study area.

Please note that recently issued Standard Secretary's Environmental Assessment Requirements (SEARS) require an ACHA with Aboriginal community consultation as a minimum EIS requirement for Aboriginal heritage.

If you have any questions regarding the advice within this letter, please do not hesitate to contact me on the details below.

Yours sincerely,

Amanda Hansford

Director

Austral Archaeology

M: 0429 019 106

E: amandah@australarch.com.au

1. REFERENCES

DECCW 2010a Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales.

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Kelleher Nightingale Consulting Pty Ltd. 2007 Hume Highway Duplication Project. Aboriginal Heritage Information for the Environmental Assessment. Prepared for the Roads and Traffic Authority of NSW.

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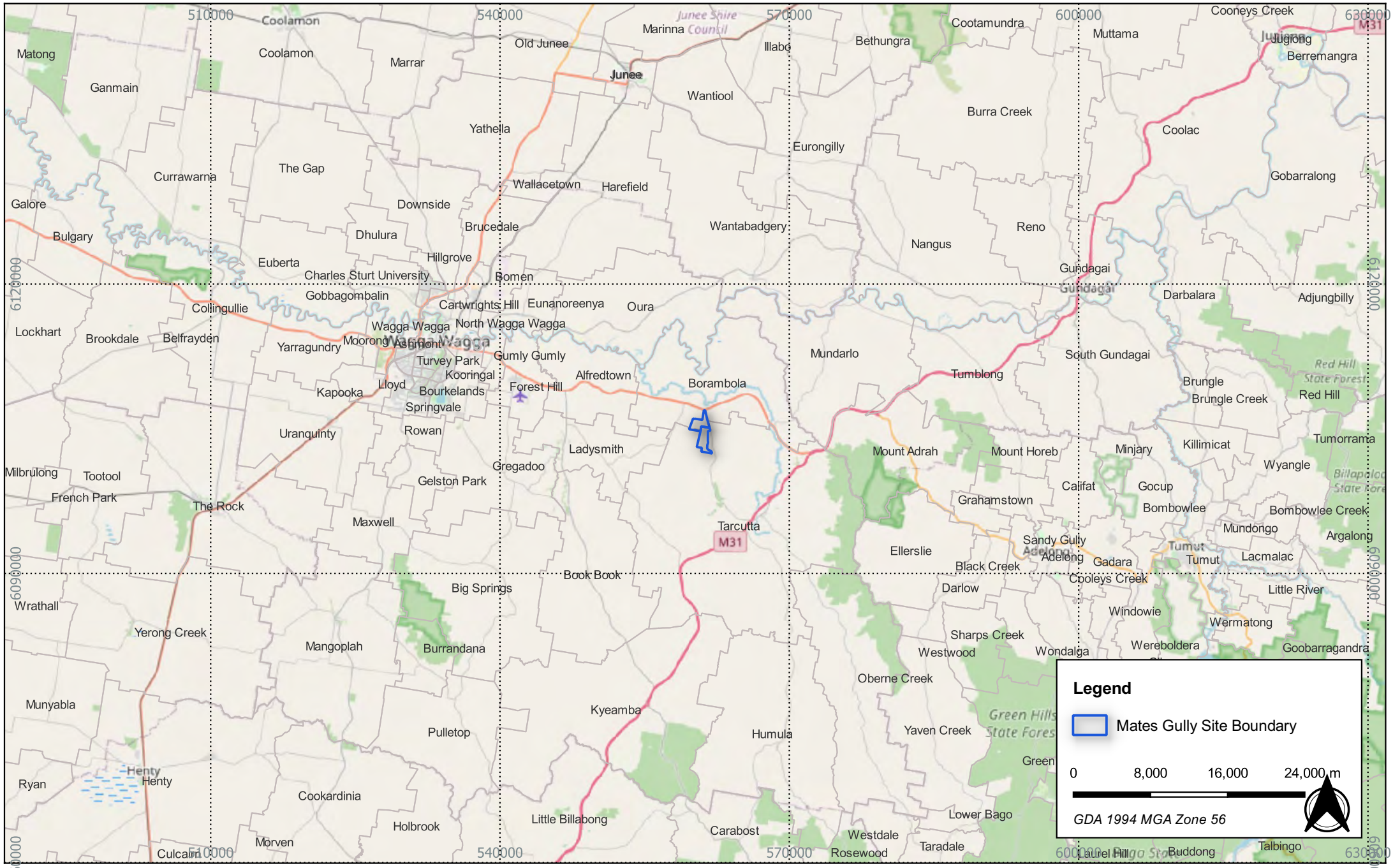

Figure 1 Location of the study area

21116 - Mates Gully Solar Farm - Strategic Advice

Source: OSM

Drawn by: WA Date: 2021-09-09

AUSTRAL ARCHAEOLOGY

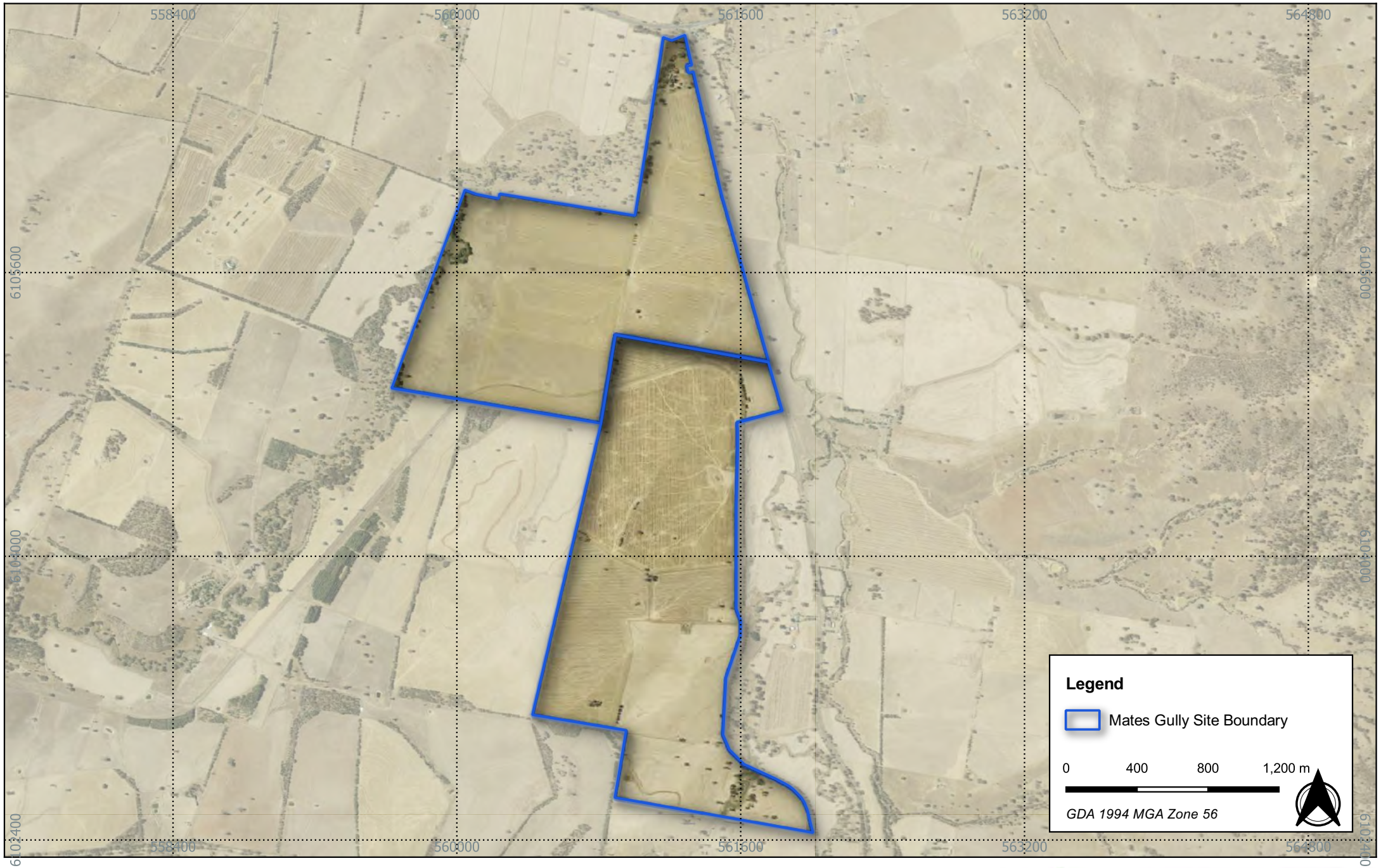

Figure 2 Aerial imagery of the study area

21116 - Mates Gully Solar Farm - Strategic Advice

Source: NSW LPI Aerial

Drawn by: WA Date: 2021-09-09

AUSTRAL ARCHAEOLOGY

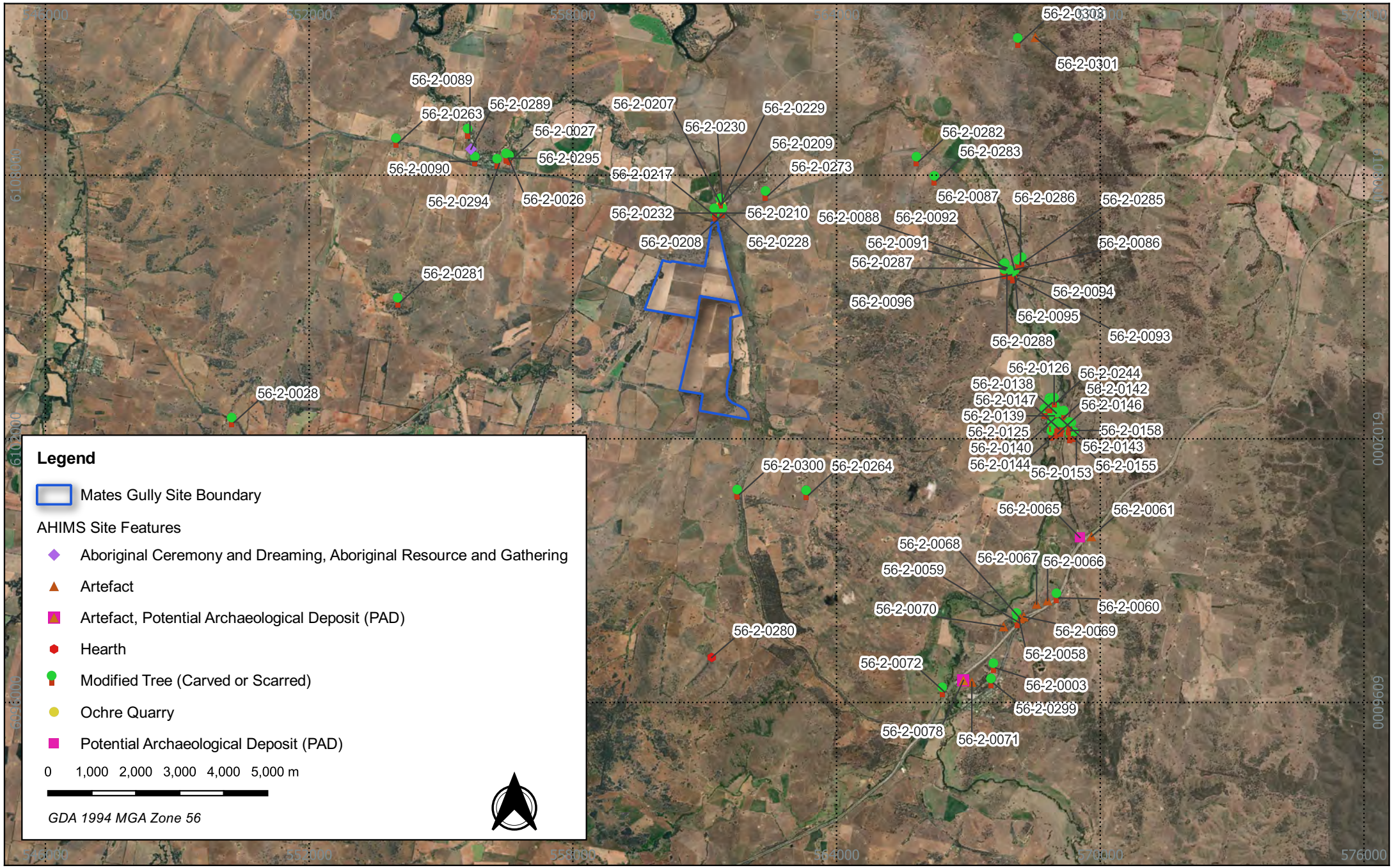

Figure 3 AHIMS site locations in relation to the study area

21116 - Mates Gully Solar Farm - Strategic Advice

Source: NSW LPI Aerial, AHIMS *Drawn by: WA Date: 2021-09-09*

AUSTRAL ARCHAEOLOGY

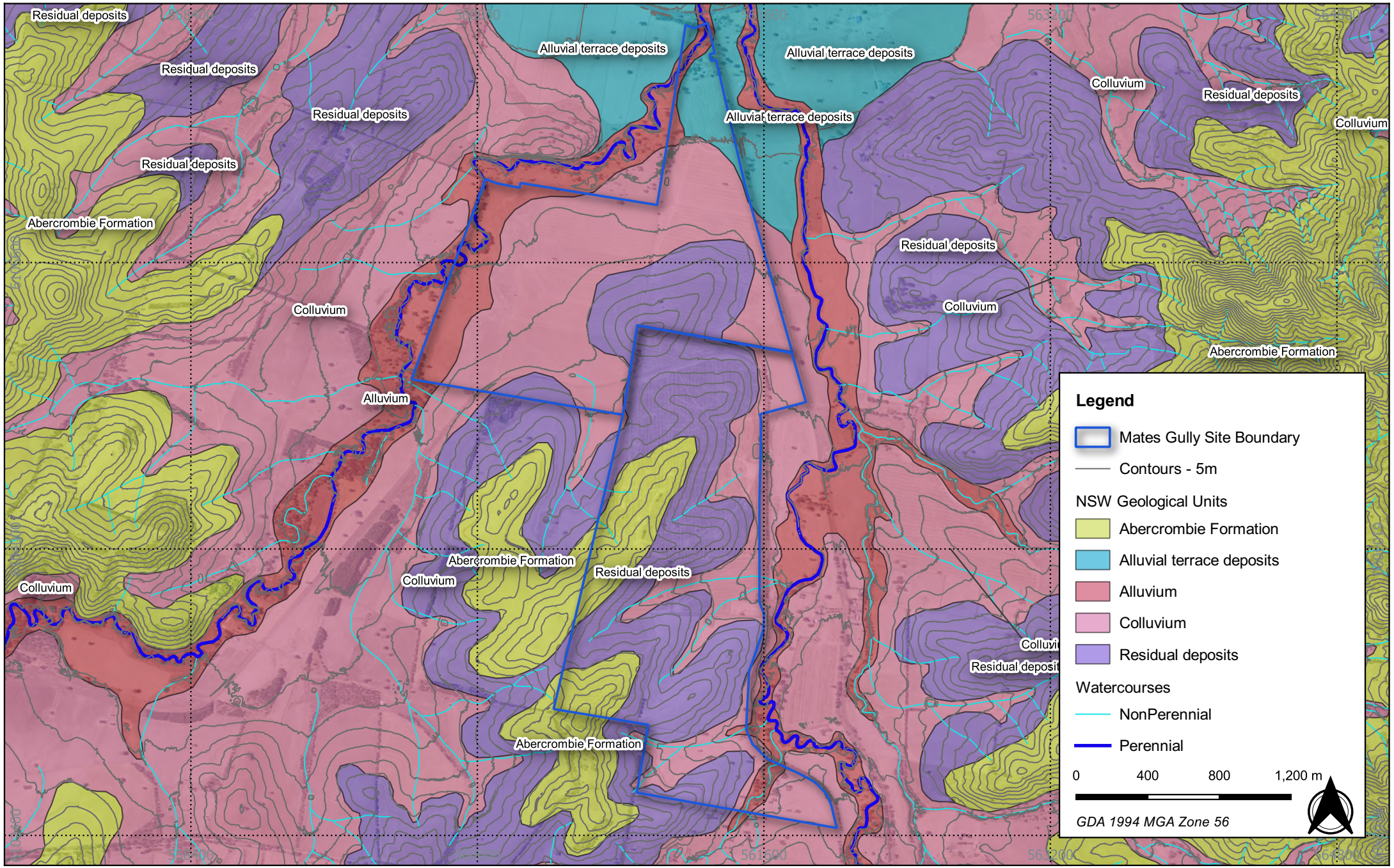

Figure 4 Geological units related to the study area

21116 - Mates Gully Solar Farm - Strategic Advice

Source: NSW LPI Aerial, NSW Seamless Geology, Geoscience Australia

Drawn by: WA Date: 2021-09-09

AUSTRAL ARCHAEOLOGY

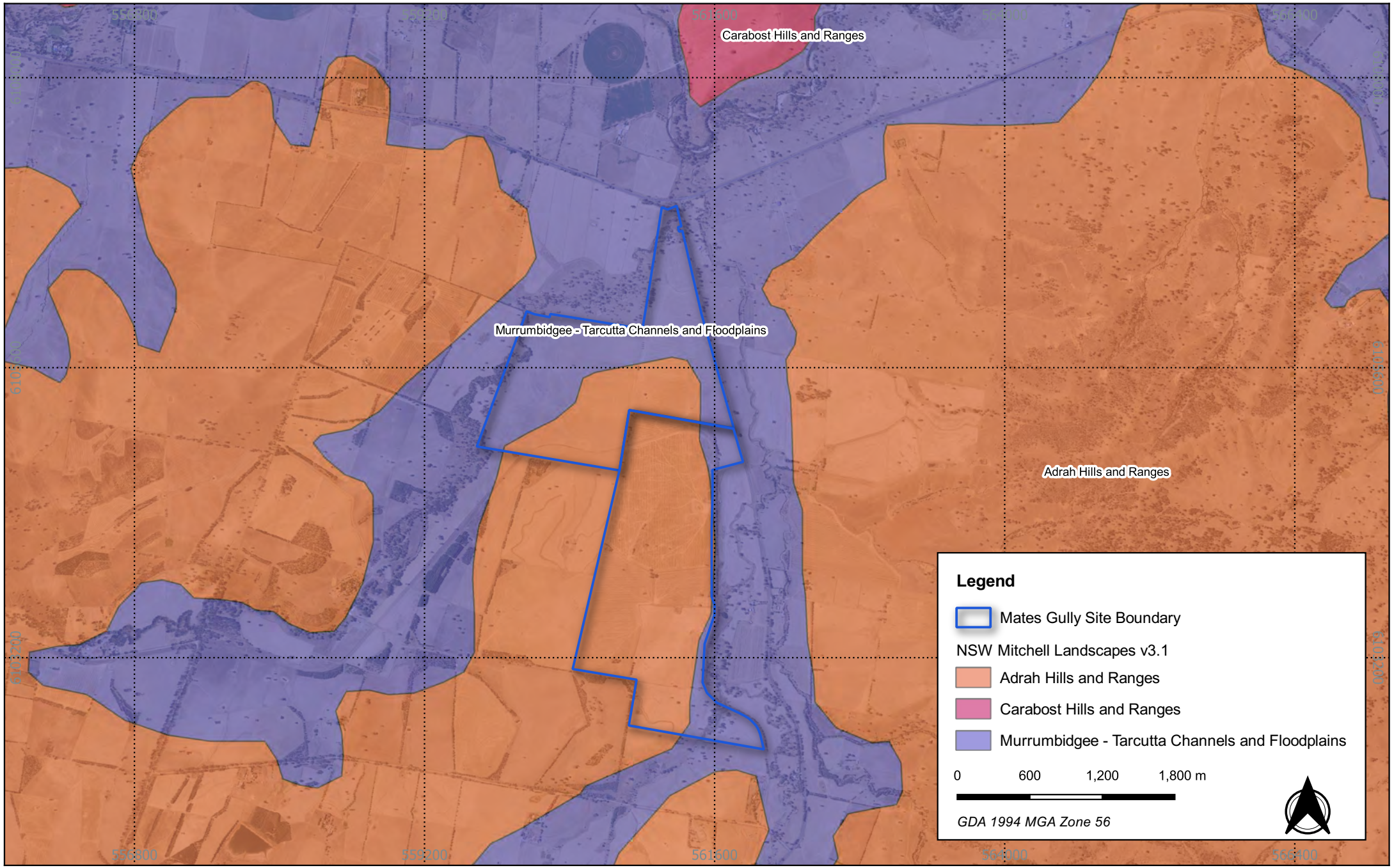

Figure 5 Mitchell Landscapes related to the study area

21116 - Mates Gully Solar Farm - Strategic Advice

Source: NSW LPI Aerial, NSW Mitchell Landscapes *Drawn by: WA Date: 2021-09-09*

AUSTRAL ARCHAEOLOGY

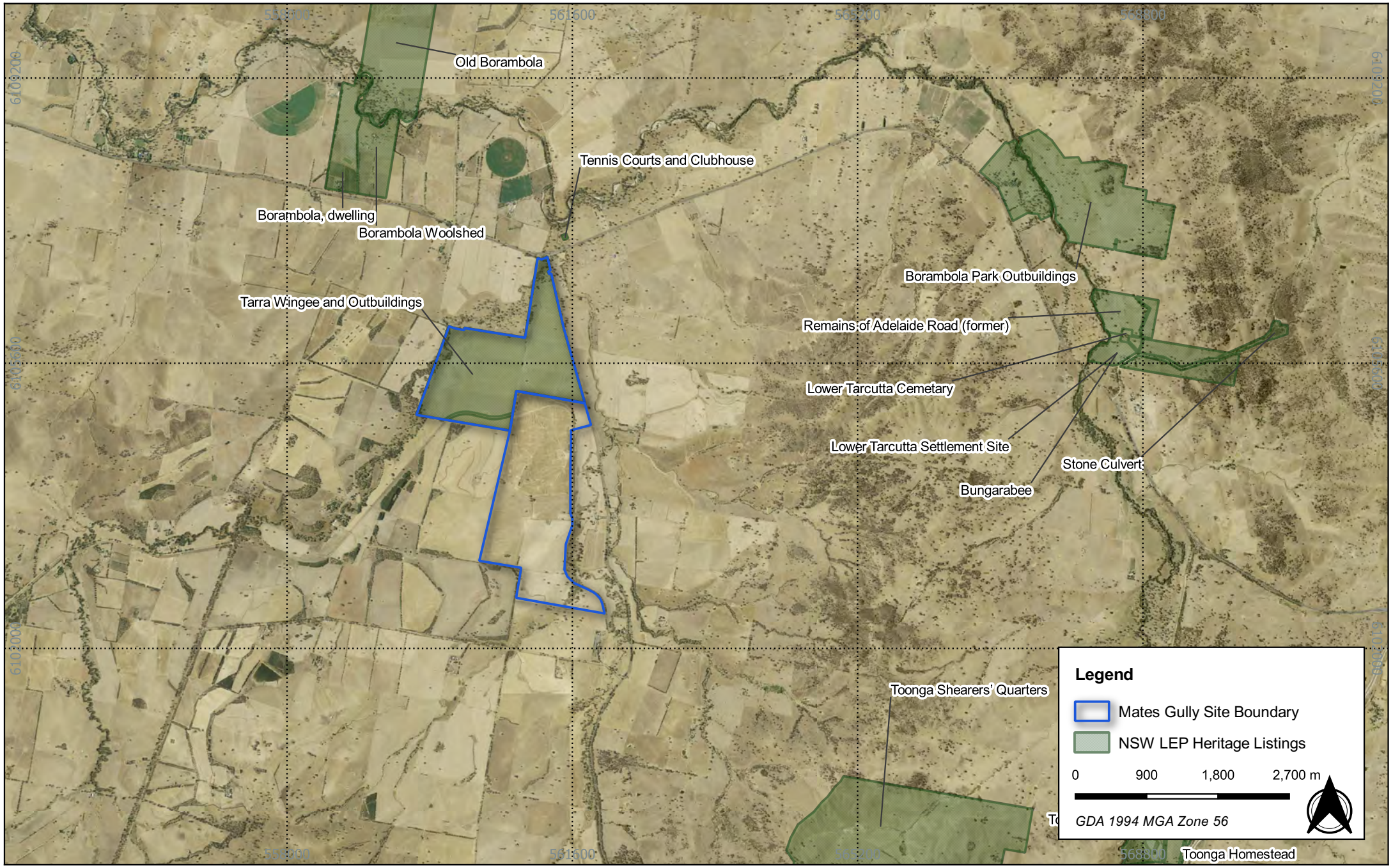

Figure 6 Historical heritage associated with the study area

21116 - Mates Gully Solar Farm - Strategic Advice

Source: NSW LPi Aerial

Drawn by: WA Date: 2021-09-09

AUSTRAL ARCHAEOLOGY

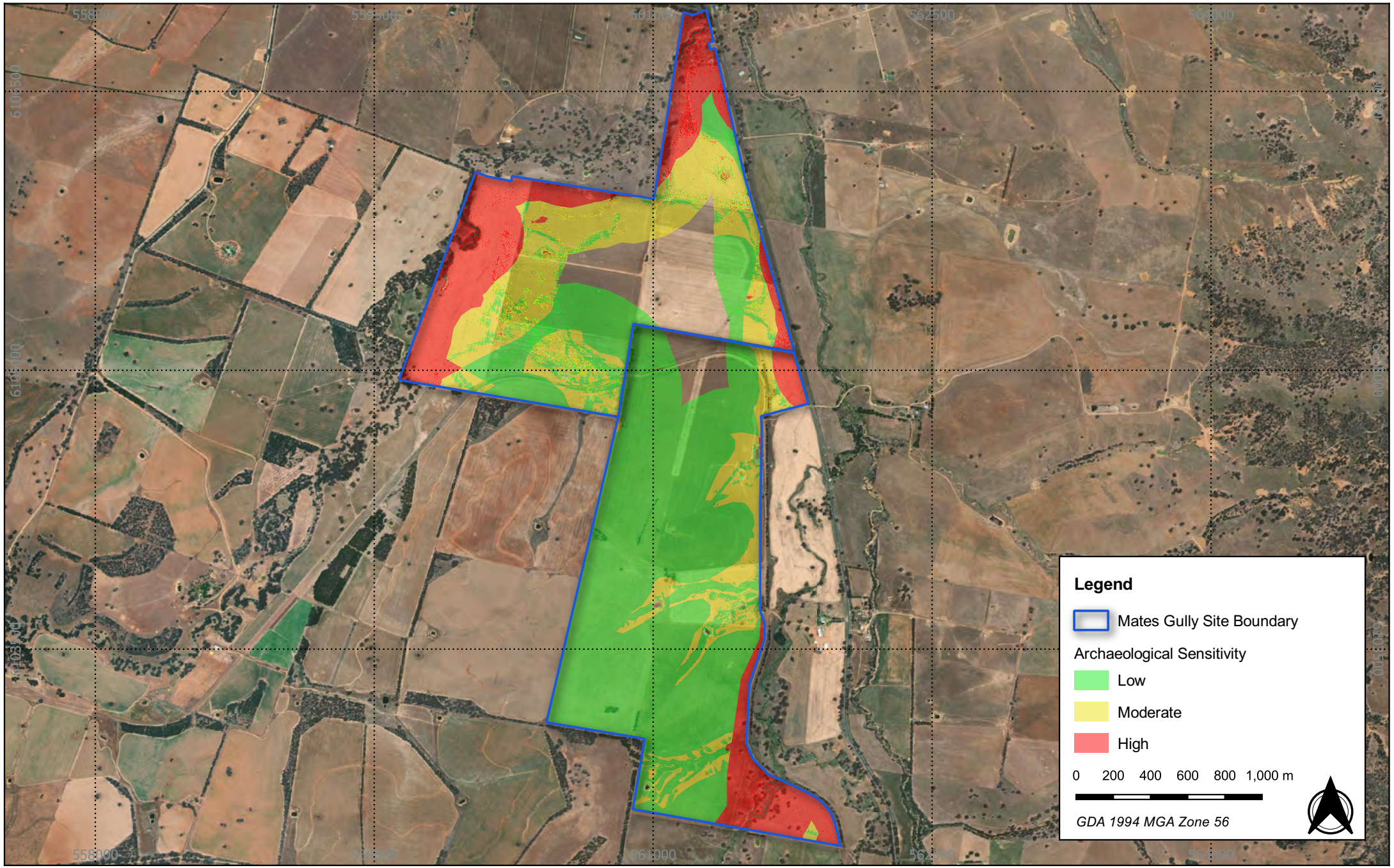

Figure 7 Aboriginal heritage sensitivity in the study area

21116 - Mates Gully Solar Farm - Strategic Advice

Source: NSW LPI Aerial

Drawn by: WA Date: 2021-10-12

AUSTRAL ARCHAEOLOGY

Appendix F Preliminary historical heritage assessment

Reference: 21116
13 October 2021

John Zammit
Spark Renewables
19-21 South Steyne Road
Manly NSW 2095

Dear John,

RE: PRELIMINARY HISTORICAL HERITAGE ASSESSMENT FOR MATES GULLY SOLAR FARM, BORAMBOLA, NEW SOUTH WALES

Austral Archaeology Pty Ltd (Austral) has been engaged by Spark Renewables to provide a Preliminary Historical Heritage Assessment (PHHA) in advance of a planned development for a Solar farm at 1069 and 1377 Mates Gully Road, Borambola, New South Wales (NSW) [the study area]. The study area consists of the entirety of Lot 2, DP1088773 and Lot 2, DP169567 (Figure 1 and Figure 2), with the cadastral information of the lots surrounding the study area shown in Figure 3.

The proposed impacts from the project relate to the development of a solar farm, including associated infrastructure and works such as an access track at the rail crossing, laydown areas and temporary facilities. The development will consist of the clearing of vegetation and potential ground levelling. Depending on the method of construction, racking may be installed into the ground and the solar panels placed onto the racking. Additionally, vehicle tracks, transmission lines and compounds may be constructed to facilitate the operation of the solar farm.

This PHHA will focus on identifying locations within the study area where historical heritage values or archaeological material may be present which will be impacted by any future proposed works. Alterations that may have subsurface impacts include:

- Vegetation removal
- Ground surface clearing
- Ground surface levelling
- The installation of an access track across the railway line.
- Installing solar panels, with racking impacting the ground surface
- The installation of a 132kV project substation
- The development of access tracks to the solar panels
- The construction of permanent laydown and temporary facilities.

These works also have the potential to impact archaeological deposits such as yard surfaces, latrines and rubbish pits associated with the homestead in the northern portion of the study area.

1. UNDERSTANDING OF THE PROJECT REQUIREMENTS

Austral understands that the project will be assessed under Part 4 of the *Environmental Planning and Assessment Act 1979*. As such, this PHHA has been undertaken to determine whether any historical heritage values are likely to be present within the study area which may be impacted as part of the planning proposal. The study area contains a local heritage item that is listed in the *Wagga Wagga Local Environmental Plan 2010* (Wagga Wagga LEP), and which is shown in Figure 4.

In order to understand the historical and archaeological potential within the study area, this report provides an assessment of the potential historical resource through a review of documentary sources. The historical research that forms the basis of this assessment included an inspection of title documents, Crown plans and historical aerial images available through NSW Department of Lands. Research was also undertaken through the National Library of Australia, NSW State Library and NSW State Archives. This process has quantified the nature, extent and significance of any historical heritage values that may be present within the study area. In particular, whether any relics may be present that may require approvals under Section 140 under the *NSW Heritage Act 1977* as part of the proposed development.

The report is underpinned by the philosophy of the International Council on Monuments and Sites (ICOMOS) and the *Burra Charter: Australia ICOMOS Charter for Places of Cultural Significance, 2013* (Burra Charter), the practices and guidelines of Heritage NSW and the requirements of the Wagga Wagga LEP and the *Wagga Wagga Development Control Plan 2010*.

2. STATUTORY CONTEXT

The study area is listed on Part 1 of Schedule 5 of the Wagga Wagga LEP as 'Tarra Wingee and Outbuildings' (item no. I11), which is physically located in the northern section of the study area between Coreinbob Creek and Mates Gully Road. No part of the study area is recorded on the NSW State Heritage Register (SHR).

Part 5.10 of the Wagga Wagga LEP deals with heritage conservation, and subsections (2) and (3) determine whether development consent needs to be granted by Wagga Wagga City Council before any activities occurring which may impact cultural heritage.

Part B of the Wagga Wagga DCP outlines design controls to be implemented when dealing with heritage items in general. Section 3.2.4 details requirements for the development in the vicinity of a heritage item as relevant to this project. Section 3.2.4 includes the following development controls:

1) Alterations and additions to the buildings and structure, and new development are to be designed to respect and compliment the heritage item in terms of building envelope, proportions, materials, colours, finishes and building street alignment.
2) Development in the vicinity of a heritage item is to minimise the impact on the setting of the item by:
    a) Providing an adequate area around the heritage item to allow its interpretation.
    b) Retaining original or significant landscaping associated with the heritage item.
    c) Protecting and allowing the interpretation of archaeological features associated with the heritage item.
    d) Retaining and respecting significant views to and from the heritage item.

3. HISTORICAL CONTEXT

The following historical background is designed to contextualise a site-specific history which will aid in the understanding of the heritage values of the study area. This work will provide a useful and concise summary of the history of the study area. It is to be noted that the following history is preliminary in nature and only serves to demonstrate a brief overview of the site development. Further research may be needed in the event that a full impact assessment is required.

PRE-EUROPEAN OCCUPATION

The study area is located on the border of the Wiradjuri language group and the Baraba-Baraba language group. Tindale (1974) defined the boundary between the Wiradjuri and the Baraba-Baraba as running from Gunbower in the south-east through Conargo to Coleambally in the north, west to Eurolie and south-west to Kerang (Tindale 1974, pp.191–2, 201).

Prior to European settlement in the Wagga Wagga area, woodland and forest habitats would have been present around the Murrumbidgee basin, which would have provided numerous resources for Aboriginal people (OzArk Environment & Heritage 2014, p.16). In this area, Aboriginal people would have utilised the flats to hunt mammals such as kangaroo, possum, emu and birds, and used the river and creeks to spear fish and to collect shellfish. Flora, such as the kurrajong and daisy yams, was also an essential food resource, forming 80% of Aboriginal people's diet, but was also used for medicine, weapons, shelters, burials and ceremonial activities (Go Green Services & The Community of Wagga Wagga 2002, p.28).

Following the arrival of the First Fleet, European disease such as smallpox and influenza often preceded European arrival in an area, and within 2 years population numbers were significantly reduced, changing the social structure of Aboriginal groups (McDonald 2008, p.16). In addition, conflicts occurred between the pastoralists and Aboriginal people regarding access to water and the killing of stock which resulted in massacres of the local Aboriginal people (OzArk Environment & Heritage 2014, p.17).

By the 1900s, it is believed that there were as little as 20 Aboriginal people in the Wagga Wagga area as a result of the conflicts and forced removals (OzArk Environment & Heritage 2014, p.17, Go Green Services & The Community of Wagga Wagga 2002, p.105). Today, the Aboriginal history of the Wagga Wagga area is documented predominantly from firsthand accounts from early Colonial settlers and the archaeological record.

INITIAL SETTLEMENT AND SUBDIVISION OF WAGGA WAGGA

Hamilton Hume and William Hovel were the first Europeans to travel into the wider Wagga Wagga region, as part of their 1824 to 1825 expedition to identify an overland route, from Appin, near Sydney, to Corio Bay, near Melbourne, and grazing land for the Colony (Hovell & Hume 2012). Returning to Sydney, they spoke highly of the arable land they saw along the way, which promoted squatters moving to the area.

Shortly after, in 1829 and 1830, Captain Charles Sturt and his exploration party consisting of George Macleay, 3 soldiers and 9 convicts, were the first Europeans to travel directly onto the land that would later become Wagga Wagga during their expedition into the interior of southern Australia (Sturt 1833). At this time, one of the 9 convicts that accompanied Sturt remained behind to became the first European person to settle in the Wagga Wagga region (NGH Environmental 2013, p.17).

Prior to the introduction of the *Squatting Act 1836*, there were many places across NSW, and across Australia, where land was illegally claimed (Longfield 2011, p.5). This occurred in the Wagga Wagga region, where several convicts, and children of convicts, moved to the area, taking up large runs along Murrumbidgee River (Bisman 2007, p.6). Two of these runs were the Eunonyhareenhya run, squatted by Charles Tompson, and the Wogga Wogga run, squatted by former convict George Best, which would later be the name for the township when it was established in 1849 (NGH Environmental 2013, p.6, Bisman 2007, p.6).

BORAMBOLA RUN 1830-1870

The Tarcullah run, which would later be renamed the Borambola run, was taken up in the 1830s by Colonial Secretary Alexander Macleay and his son, George Macleay, who had accompanied Captain Charles Sturt on his 1829 to 1830 expedition down the Murrumbidgee River (Sturt 1833; *Riverina Weekender*, January 10 2009, pg 20). Although they did not reside on the property, the Macleays had managers and workers that looked after their landholdings across the region, including the runs of Pullitop, Toganmain and Borambola, which was classed as the 'head station' (*The Gundagai Independent and Pastoral, Agricultural and Mining Advocate* [TGIPAMA], 10 April 1916, pg 4).

In 1848, a directive was made to issue formal leases of several runs on Crown land in the area; at this time Alexander and George Macleay were listed as leasing run number 116, known as Borambola (Tarcuttah), which included 50,000 acres (20,234 hectares), and run number 117, known as Pullitop (45,000 acres) (*New South Wales Government Gazette*, 30 September 1848, pg 1368).

The Macleays transferred their properties in 1851, with Pullitop purchased by John Cox and John Keane and Borambola by John Gordon, who had worked for Macleay as a manager (NSW Government Gazette, 30 September 1853, pg 169; *TGIPAMA*, 10 April, 1916, pg 4). At this time, the Old Borambola homestead was built (*Riverina Weekender,* January 10 2009, pg 20). This homestead consisted of a stone rubble homestead faced with mud and stucco that was scored to resemble ashlar, and designed in a rural colonial architecture style located on the northern side of the Tarcutta Creek [Figure 5] (State Heritage Inventory 'Old Borambola' Item no I16). This is outside of the present study area.

In 1860, Gordon began selling off parts of the Borambola property, with pre-emptive rights given to John Donnelly (NSW Department of Lands, Vol.411 Fol.135; NSW Department of Lands Vol. 129-Fol 117). Over the next 15 years, Donnelly purchased additional portions which were originally part of the Borambola Run. In 1878, Donnelly commissioned Charles Hardy to build an additional homestead on the property, south of the old Borambola homestead and Tarcutta Creek, where the Borambola winery is now located (*The Albury Banner and Wodonga Express*, 17 February 1866, pg 2; *TGIPAMA*, 10 April 1916; NSW Department of Lands, Vol. 53-Fol. 135). This is also outside of the study area.

Donnelly died on 13 March 1878, leaving his Gumly Gumly station to his wife and family, and Borambola station to his sons' Patrick Joseph Bedee Donnelly, Michael Austin Donnelly and Edward Wilfred Donnelly (NSW Department of Lands, Vol. 669 Fol. 42).

A woolshed was built outside the study area on the larger Borambola property in 1895, but after years of drought, the Donnelly family were forced into bankruptcy and in the same year and Goldsbrough and Mort Co. Ltd assumed control of parts of the run, with JA Gunn serving as manager running the estate until he retired in 1905 (*Riverina Weekender,* January 10 2009, pg 20).

Later Use, Tarra Wingee 1900—Present

In 1910, the Borambola run was subdivided, with the study area forming parts of portions 17, 29, 38, 39, 40, 42, 43 and 49 (Figure 6). Goldsbrough and Mort Co. Ltd maintained control of block 43 until 1912, when Alfred Thomas White purchased blocks 29 and 43 (NSW Department of Lands Vol. 2215 Fol. 157). While it was previously understood that Tarra Wingee and its outbuildings were erected around the turn of the century, in an architectural style associated with the Late Victorian period [1870-1900] (NGH Environmental 2013), it is most likely that the buildings were constructed by White upon his purchase of the land although it has not been possible to confirm this at present. This assumption is made on the basis that White represents the first confirmed occupation of this part of the study area. The homestead was built in either rendered brick or pise, with a hip roof and encircling bullnose veranda (NGH Environmental 2013).

Block 42 was purchased by The Scottish Australian Investment Company Limited, and in 1917 parts of that land were acquired by the NSW Government for construction of a railway line between Wagga Wagga and Tumbarumba, as well as for a new station to be named 'Borambola' (NSW Department of Lands R507191; Government Gazette of NSW, 2 August 1917, pg 4225). The section of the railroad between Wagga Wagga and Humula, including the section which passed through the study area, was officially opened in 1917, with the remaining railway line to Tumbarumba opening in 1921 (The Sun, 10 March 1921, pg3) [Figure 7].

White lived on the property until 9 November 1938, when he died in a tragic accident at the age of 57, leaving the property to his wife, Ellie White (NSW Department of Lands, Vol. 4549 Fol. 100). At the time of his passing, White was described as living at the 'Tarrawingee' property (c.f. *Daily Advertisor,* Friday 11 November 1938, pg. 5). Within the year, the property was leased to Samuel Isaac Brain, who remained there until 1959 when Ellie White then leased the property to James White (NSW Department of Lands, Vol. 4549 Fol. 100). In 1963, a transmission line was erected across the site (NSW Department of Lands, Vol. 4549 Fol. 100) [Figure 8].

In 1975, the Tumbarumba railway line was closed and the goods shed was left as the remaining structure related to the station (NSW HRSI Newsletter, August 2017, pg 4). Subsequently, 24 years later in 1999, Tarra Wigee and its outbuildings were identified in the Wagga Wagga heritage study as a locally significant item (item Number I11) [Figure 9 and Figure 10].

At present, there are 3 main structures and a sheep yard located in the study area, and the remaining land is used for pastoral activities.

4. HISTORICAL LAND USE AND SENSITIVITY MAPPING

An assessment of archaeological potential usually considers the historic sequence of occupation in comparison to the structures which are currently extant, as well as the impact that the more recent constructions and works would have had on the earlier occupation phases and, as such, the likely intactness of the archaeological resource. This, in turn, is tied in with the extent to which a site may contribute knowledge not available from other sources to current themes in historical archaeology and related disciplines.

Regarding the assessment of the study area, the archaeological potential depends upon the anticipated likelihood for the survival of buried structural fabric and cultural deposits as well as an estimation of archaeological integrity. Structural fabric refers to what is generally regarded as building or civil engineering remnants. Cultural deposits refer to archaeological deposits, i.e., deposited sediments containing artefacts etc.

Having analysed the historical evidence in the previous chapters, the following section presents a summary of the potential for a physical archaeological resource to be present in the study area, that is, its archaeological sensitivity/potential. As a rule, archaeology sites first redeveloped in either the 19th or early 20th century can also retain evidence of occupation from earlier periods. It is also very common that such evidence can be recovered even when sites have been redeveloped or disturbed by modern construction activity. Based on the detailed background history, the following general predictive statements can be made:

- There is **high** potential for archaeological remains to be present which relate to the use of the study area as part of the Borambola run, which will be associated with sheep and other agricultural pursuits. This is most likely to be present in the form of dams, and remains of holding pens and fence lines.
- There is **high** potential for archaeological remains to be present which relate to the train line and associated infrastructure such as the station which was constructed within the study area.
- There is **high** potential for archaeological remains to be present which relate to the Tarra Wingee Homestead and outbuildings, this may include rubbish collection areas.

Sensitivity Mapping

The results of previous sections are depicted in an archaeological sensitivity map (Figure 11). This map shows the degree of predicted historical archaeological potential with the study area following site development. The map forms the basis for the conclusions and management recommendations outlined in this assessment. However, one key point to note is that potential does not equal significance, and areas of even moderate archaeological potential may not contain archaeological material which is considered significant.

5. SIGNIFICANCE ASSESSMENT

An assessment of cultural significance seeks to establish the importance that a place has to the community. The concept of cultural significance is intrinsically tied to the fabric of the place, its history, setting and its relationship to other items in its surrounds and the response it evokes from the community.

The assessment of cultural significance with respect to archaeological sites can present difficulties because the nature and extent of the "relics" are often indeterminate and value judgements therefore need to be made on the basis of potential attributes. The element of judgement can be greatly reduced by historical or other research, as has been completed for the current study. Archaeological deposits and features provide important evidence of the history and settlement of NSW. These heritage items may include deposits containing material culture (artefacts) that can be analysed to yield information regarding early urban development that is unavailable from other sources. Archaeological investigations can reveal much about technology, industry, past economic and social conditions and people's lives. Sites that contain these elements therefore have scientific value that may be of considerable significance when analysed in association with documentary evidence. It is through this potential to reveal information about the past use of a place that archaeological sites have heritage significance.

BASIS FOR ASSESSMENT

The Burra Charter of Australia ICOMOS was formulated in 1979 (revised 2013), based largely on the Venice Charter (for International Heritage) of 1966. The Burra Charter is the standard adopted by most heritage practitioners in Australia. The Charter divides significance into four categories for the purpose of assessment. They are: Aesthetic, Historical, Scientific/Technical, and Social significance.

The Heritage Council of NSW has established a set of seven criteria to be used in assessing cultural heritage significance in NSW, and specific guidelines have been produced to assist archaeologists in assessing significance for subsurface deposits. These are published in the Heritage Council's *Assessing Significance for Historical Archaeological Sites and 'Relics'* (2009). The Heritage Council's criteria incorporate those of the Burra Charter, but are expanded to include rarity, representative value, and associative value.

In order to determine the significance of a historical site, the Heritage Council have determined that the following seven criteria are to be considered (Heritage Council of New South Wales 2009, p.3):

- Criterion (a): an item is important in the course, or pattern, of NSW's cultural or natural history (or 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 local area);
- Criterion (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);
- Criterion (d): an item has strong or special association with a particular community or cultural group in NSW for social, cultural or spiritual reasons (or the local area);
- Criterion (e): an item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the local area);
- Criterion (f): an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history (or the local area); and
- Criterion (g): an item is important in demonstrating the principal characteristics of a class of NSW's cultural or natural places or cultural or natural environments (or the local area).

These criteria were designed for use on known or built heritage items, where above ground heritage is both tangible and easily identified. As the nature of archaeology is that it is invisible until disturbed, the presence and attributes of archaeological material must be assumed based on the recorded levels of disturbance, known site history and the creation of predictive statements. Ultimately, the actual presence of archaeological material can only ever be framed in terms of the potential for it to be present.

Heritage NSW has assisted archaeologists by creating questions which are framed around the main NSW Heritage Criteria, and which can be used to assess the relative importance of any archaeology which is likely to be present. The questions to be asked of an archaeological deposit differ from the main criteria, but can be seen to be referential to them, in order to create a suitable.

LEVELS OF SIGNIFICANCE

The Heritage Act allows for the protection of heritage items of State or local significance. The levels of significance can be defined as:

- Items of State significance are of special interest in a State context. They form an irreplaceable part of the environmental heritage of NSW and must have some connection of association to the State.
- Items of local significance are of special interest to an LGA. They are important to the local community and often form an important part of the local identity. Collectively, such items reflect the cultural or natural history of the given area.

ARCHAEOLOGICAL SIGNIFICANCE ASSESSMENT

The following section addresses the significance of the potential archaeological resource in accordance with the criteria adopted in the Heritage Council's significance guidelines for archaeological deposits (Heritage Council of New South Wales 2009, pp.11–13), using selected questions from the guidelines.

Archaeological Research Potential (current NSW Heritage Criterion e)

The study area is expected to contain information relating to the historical (i.e. the occupation history of the site) and archaeological contexts (i.e. function and location of buildings and structures) for the site. The potential archaeological material is expected to be related to the use of the study area as part of the Borambola run through to the construction and use of the railway alignment and Tarra Wingee and Outbuildings. The known archaeological remains on the site will be associated with the Tarra Wingee and outbuildings, as well as the railway line and associated infrastructure such as the station. Additional features that may be uncovered include wells, paved surfaces, additional outbuildings or structures, or evidence of farm fences, dams, postholes and holding pens relating to both the Borambola run and to the Tarra Wingee farm. Evidence may also be found relating to food production and waste such as disturbed soil layers, rubbish deposits and refuse deposits.

In summary, the archaeological research potential of the site is significant to the local area, with the opportunity to shed light on poorly understood elements of the occupational history of the Borambola area. The study area therefore satisfies NSW Heritage Criterion (e) at a local level in this regard.

Association with a Person or Community (NSW Heritage Criterion a, b & d)

The Borambola run holds strong ties to Alexander Macleay , who held a key position in the Government, and John Donnelly, who was one of the earliest settlers in the area and who eventually amassed substantial land holdings. The study area is also associated with Alfred White, who appears to have constructed the Tarra Wingee homestead and, although there is documentary evidence relating to his life and more significantly, his accidental death, he is not considered of significance in his own regard.

In summary, the study area does not contain any known archaeological heritage values that are likely to be associated with a person or community of significance at either the State or local level. The study area therefore does not satisfy NSW Heritage criteria (a), (b) and (d) in this regard.

Aesthetic or Technical Significance (NSW Heritage Criterion c)

There are unlikely to be archaeological remains within the study area which demonstrate specific aesthetic values, although the railway and pise building may embody technical significance.The study area therefore does satisfy NSW Heritage Criteria (c) in this regard.

Ability to demonstrate the past through archaeological remains (NSW Heritage Criteria a, c, f, and g)

The archaeological remains within the study area are likely to relate to the various overlapping phases of occupation, with the study area reflecting a continuation of agricultural pursuits from the Borambola run through to Tarra Wingee, with the farmland bisected by the railway line and station which served to link the rural community to the urban centre of Wagga Wagga. As such, the study area is likely to contain archaeological remains which show a pastoral landscape reflecting the slow transition from large-scale agriculture to more localised, smaller farming practices aided by increasing infrastructure.

The study area therefore meets NSW Heritage Criteria (a), (c), (f) and (g) at the local level in this regard.

BUILT HERITAGE SIGNIFICANCE ASSESSMENT

The assessment has not identified any additional information that alters the significance of items in the vicinity and as a result the heritage values of these items do not require reassessment. The existing statements of significance for those items are summarised in Table 1 presents an assessment of the study area against the 7 Heritage NSW criteria.

Table 1 Assessment of significance

Criteria	Assessment	Level of Significance
A	The study area demonstrates the development of farming communities from large agricultural holdings to smaller farmland and the technology associated with the changes, including the construction of a railway line and station which served to link the rural community to the urban centre of Wagga Wagga.	Local
B	The site does not hold any special association to any specific person or groups of persons.	None
C	The study area has been used consistently as a pastoral property, transitioning from a large scale agricultural run to smaller farming properties with different practices and infrastructure.	Local
D	The study area no strong association with a particular community or cultural group.	None
E	The study area is expected to contain information related to the use of the study area as part of the Borambola run through to the construction and use of the railway alignment and Tarra Wingee and outbuildings. Remains on the site will be associated with the Tarra Wingee and outbuildings and the railway line, as well as the associated infrastructure such as the station. Other features may include wells, paved surfaces, additional outbuildings or structures, or evidence of farm fences, dams, postholes and holding pens	Local
F	The study area shows a pastoral landscape which is typical of the surrounding area, reflecting the slow transition from large-scale agriculture to more localised, smaller farming practices aided by increasing infrastructure.	Local
G	The study area is associated with the various overlapping phases of occupation and the technological changes that occur during these phases. This is related to the change from large scale estates owned by one person to smaller holdings that are held by multiple people.	Local

STATEMENT OF SIGNIFICANCE FOR HERITAGE ITEMS WITHIN THE VICINITY OF THE STUDY AREA

The following section contains statements of significance for the study areas themselves and any heritage items in the study areas and the vicinity of the study areas. These are outlined in the tables below.

Table 2 Statements of significance for study area.

Item	Statement of Significance
Study area	Historical research has identified that the study area was originally part of the larger Tarcuttah (Borambola) run which was one of the earliest cattle stations on the Murrumbidgee River. Following a change of hands, foreclosure of the property, and subsequent subdivision, the wider study area reflects the gradual transition from large pastoral properties to smaller blocks and the technological changes as a result.
Tarra Wingee and outbuildings (BOR01)	Tarra Wingee and outbuildings are a representative example of an aesthetically pleasing and relatively intact late Victorian farmhouse complex.

Item	Statement of Significance
Borambola Station and railway	Borambola Station and the associated railway line are a representative example of changes to properties and infrastructure to connect the rural community to the urban centre of Wagga Wagga.

6. RECOMMENDATIONS

On the basis of the evidence outlined in this assessment it is recommended that:

1) As this PHHA has identified that items of built heritage containing heritage values and areas of archaeological potential are present within the study area, it will be necessary to prepare a full Historical Heritage Assessment (HHA) in the event that the proposed development will impact on any of the items or areas of archaeological potential shown on Figure 11. The HAA will need to include a Statement of Heritage Impact, and full Assessment of Significance.
2) The HHA will require additional research in terms of accessing available online and physical sources of information, particularly in regards to identifying the Tarra Wingee and outbuildings origins.
3) If impacts to heritage items can not be avoided, the HHA will be required to include management recommendations in order to mitigate against potential harm.

Please do not hesitate to contact me on 0429 625 098 if you wish to discuss any aspect of this submission.

Yours sincerely,

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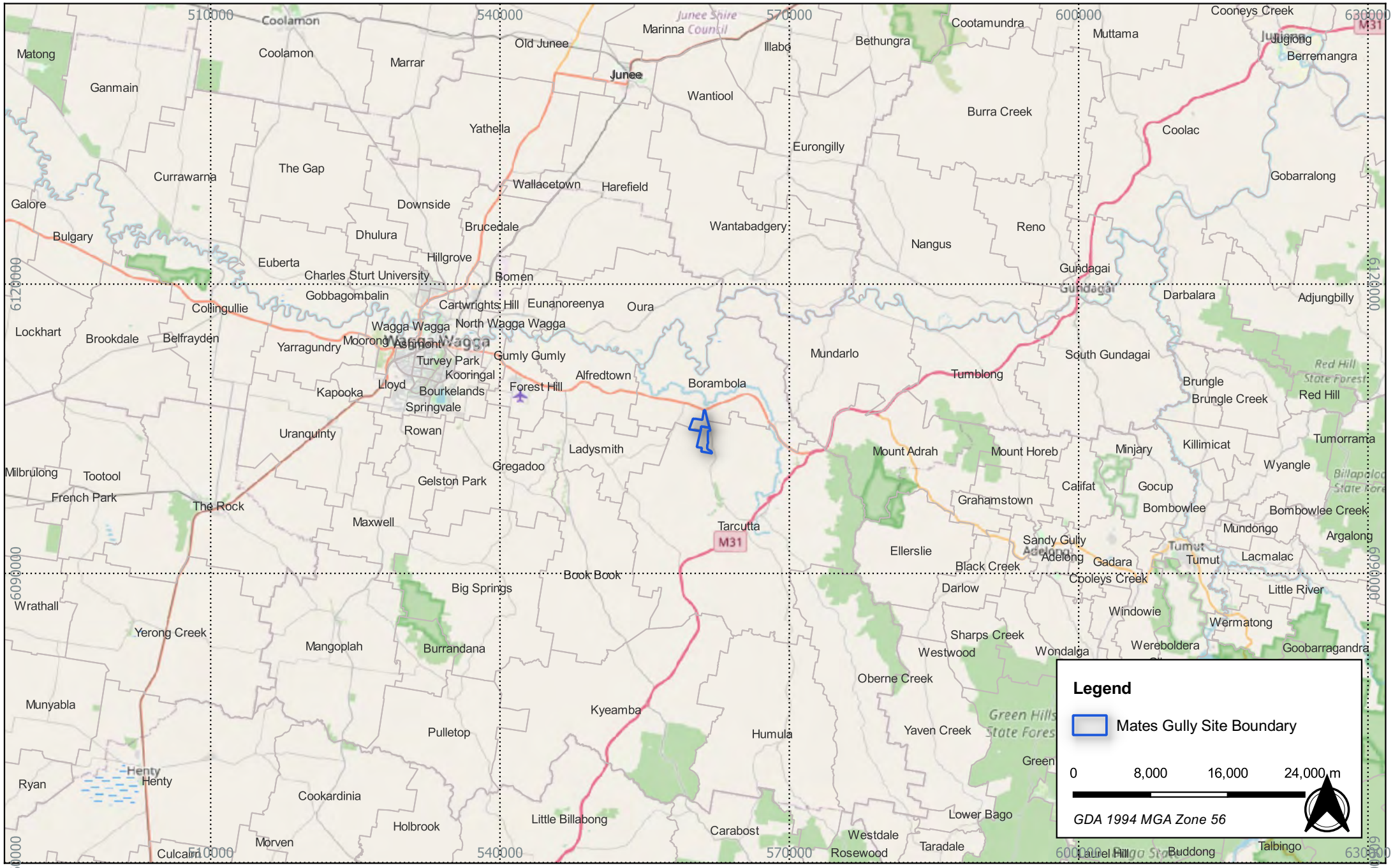

Figure 1 Location of the study area

21116 - Mates Gully Solar Farm - Strategic Advice

Source: OSM

Drawn by: WA Date: 2021-09-09

AUSTRAL ARCHAEOLOGY

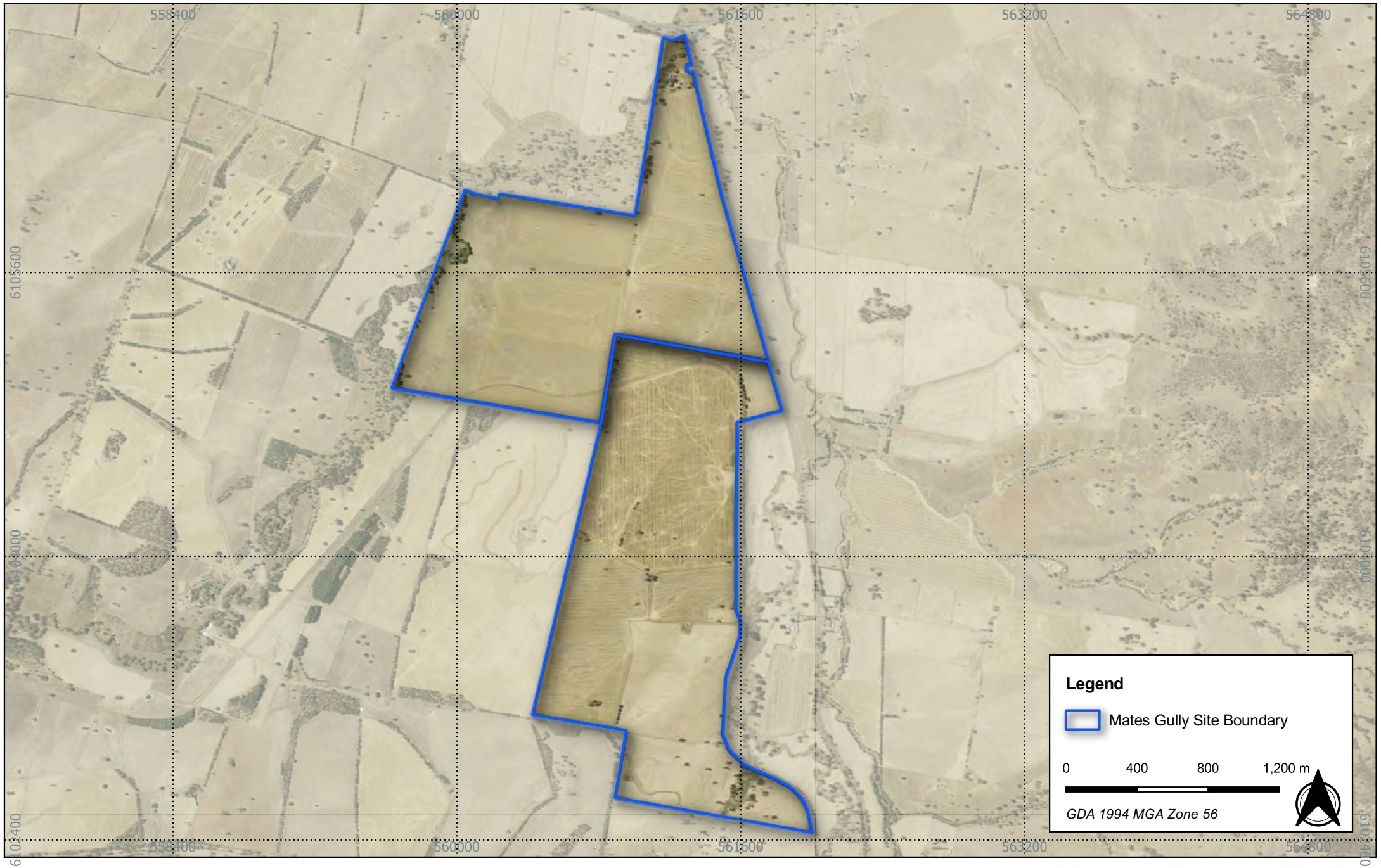

Figure 1.2 Aerial imagery of the study area

21116 - Mates Gully Solar Farm - Strategic Advice

Source: NSW LPI Aerial

Drawn by: WA Date: 2021-09-09

AUSTRAL ARCHAEOLOGY

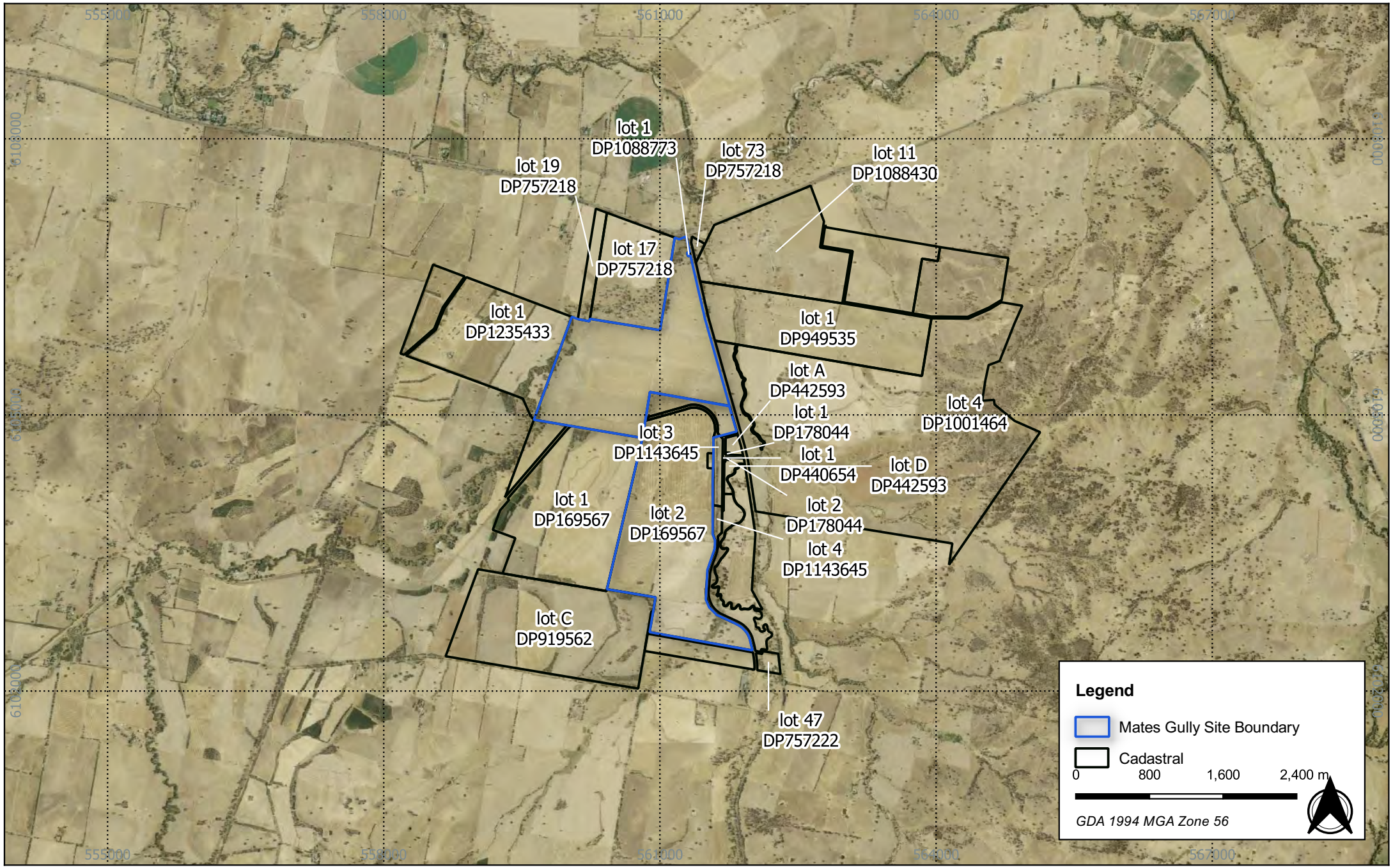

Figure 3 - Cadastral Boundaries of the Study Area

21116 - Mates Gully Solar Farm - PHAA

Source: NSW LPI Aerial

Drawn by: ARH Date: 2021-09-16

AUSTRAL ARCHAEOLOGY

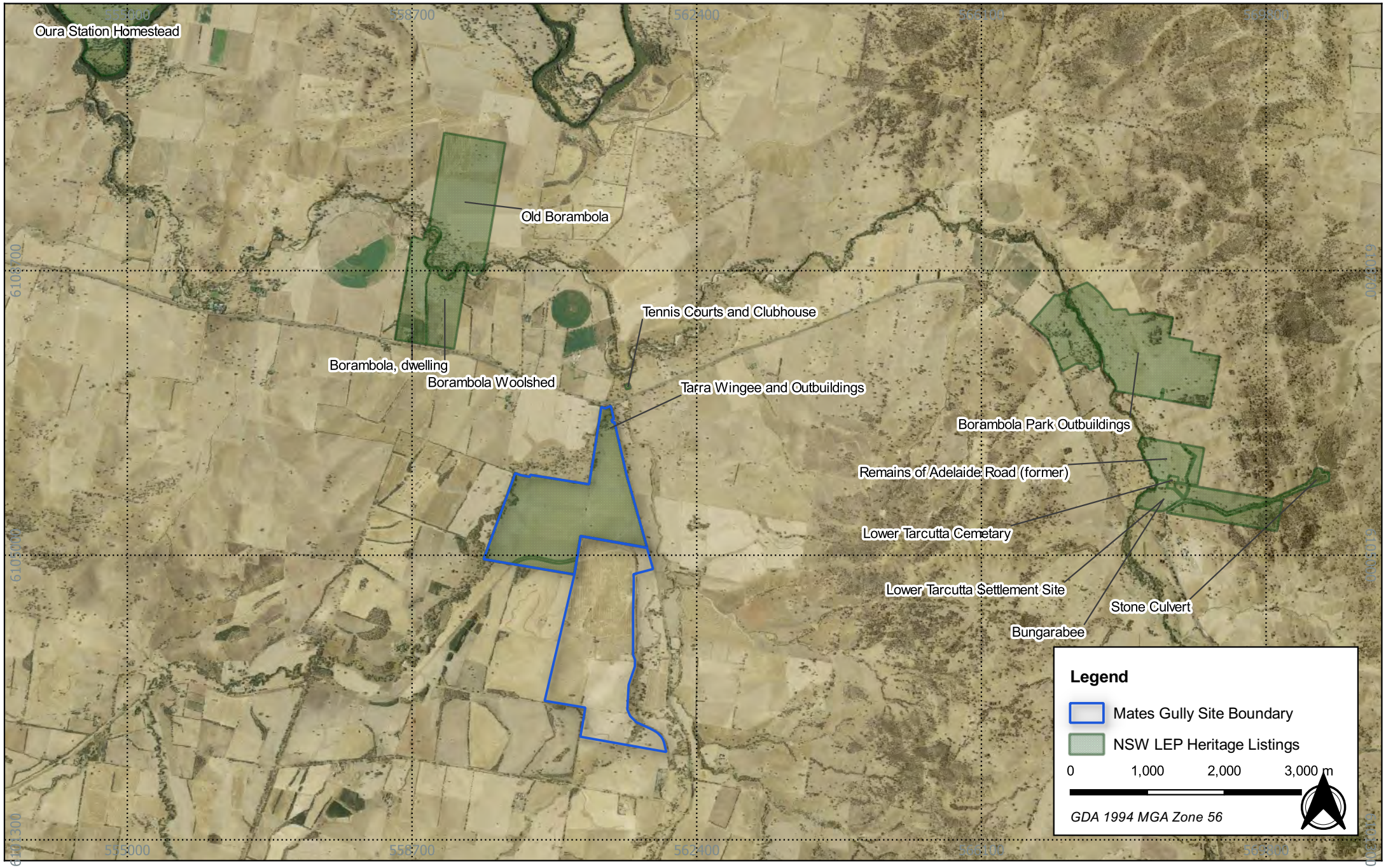

Figure 4 Heritage of the surrounding area

21116 - Mates Gully Solar Farm - PHAA

Source: NSW LPI Aerial

Drawn by: ARH Date: 2021-10-12

AUSTRAL ARCHAEOLOGY

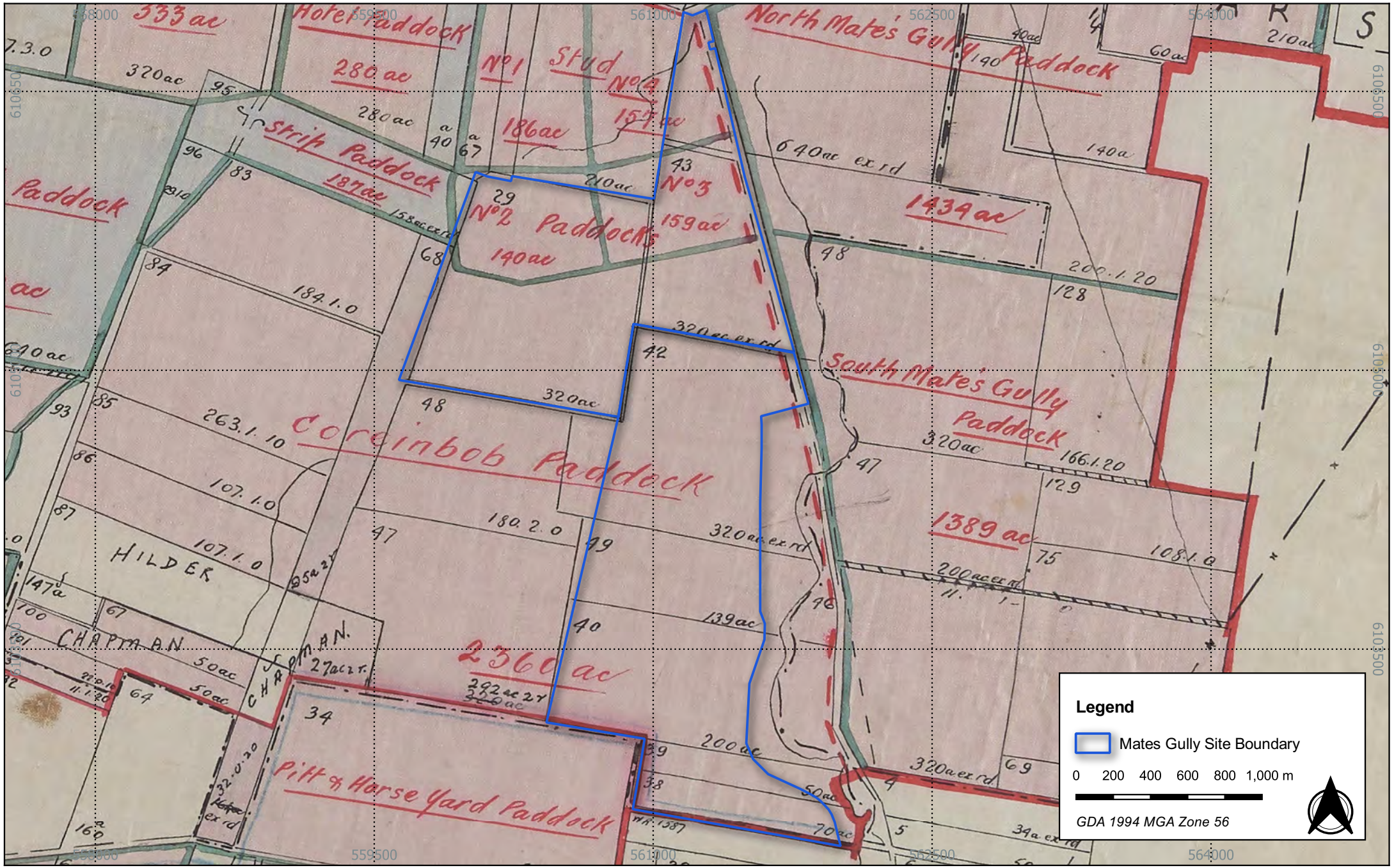

Figure 5 - Borambola Estate Layout

21116 - Mates Gully Solar Farm - Strategic Advice

Source: NSW LPI

Drawn by: WA Date: 2021-09-22

AUSTRAL ARCHAEOLOGY

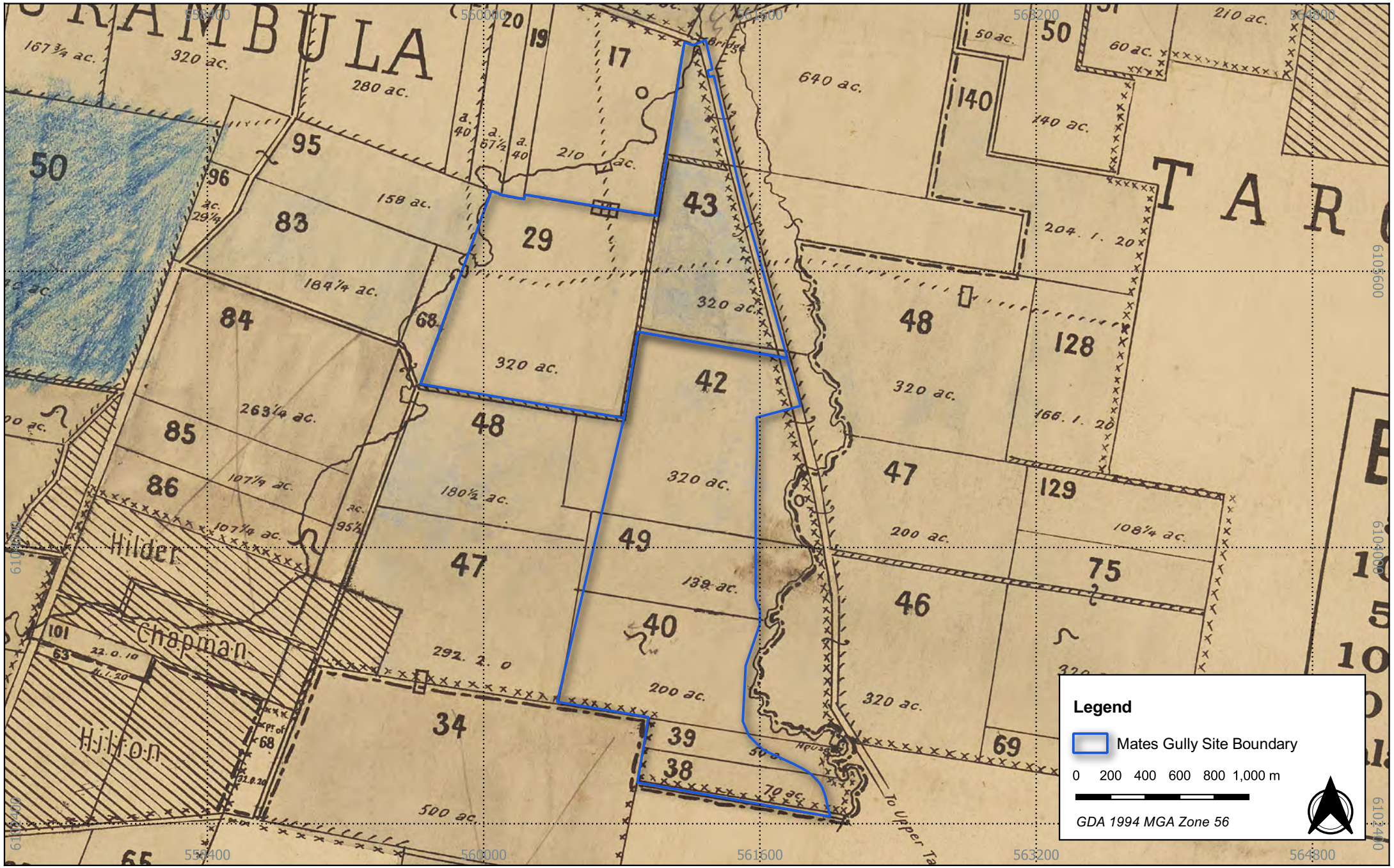

Figure 6 - 1910 Borambola Estate Subdivision

21116 - Mates Gully Solar Farm - Strategic Advice

Source: NSW NLA Map Collection *Drawn by: WA Date: 2021-09-22*

AUSTRAL ARCHAEOLOGY

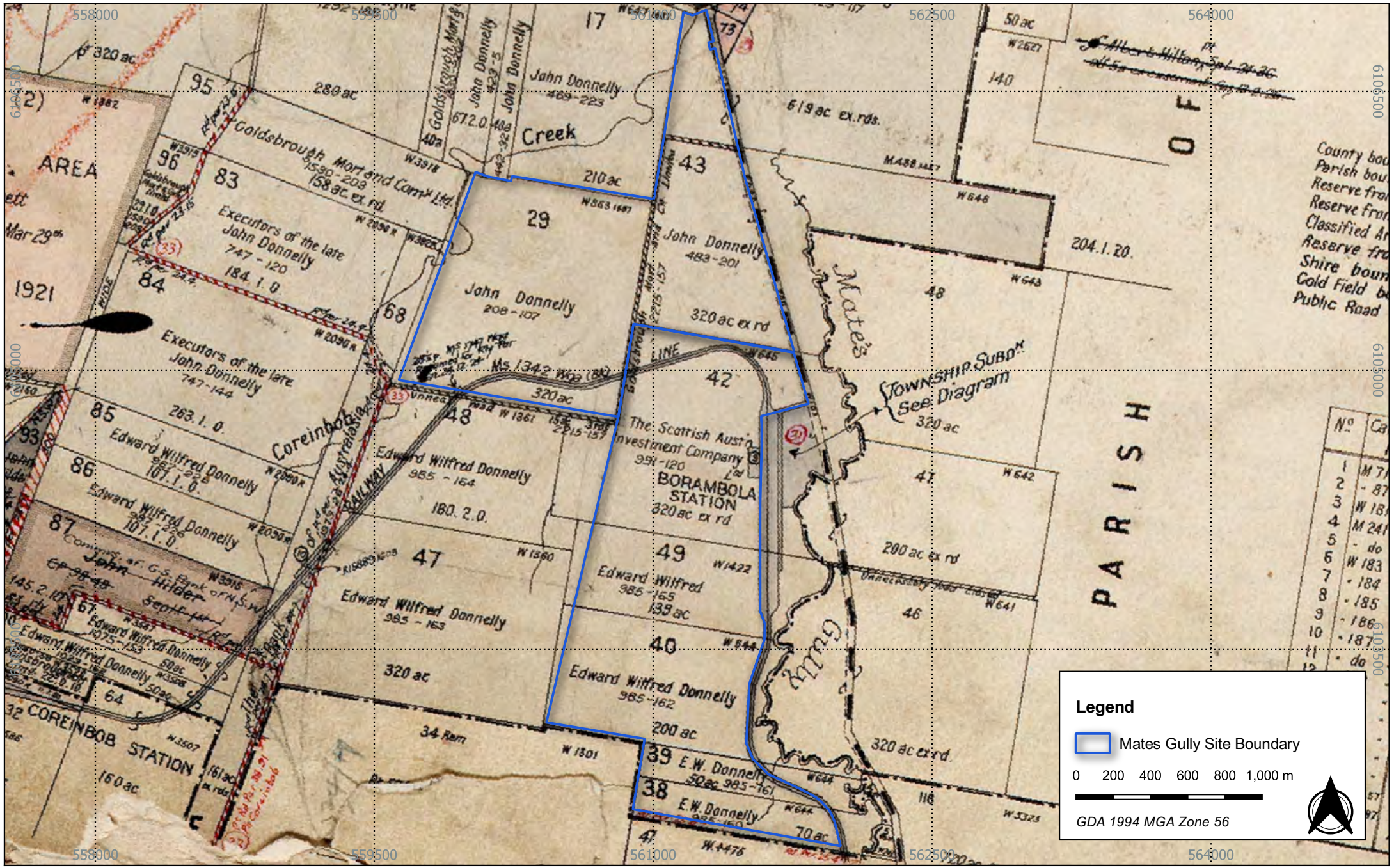

Figure 7 1925 Parish map of Borambula

21116 - Mates Gully Solar Farm - Strategic Advice

Source: NSW HLRV

Drawn by: WA Date: 2021-09-22

AUSTRAL ARCHAEOLOGY

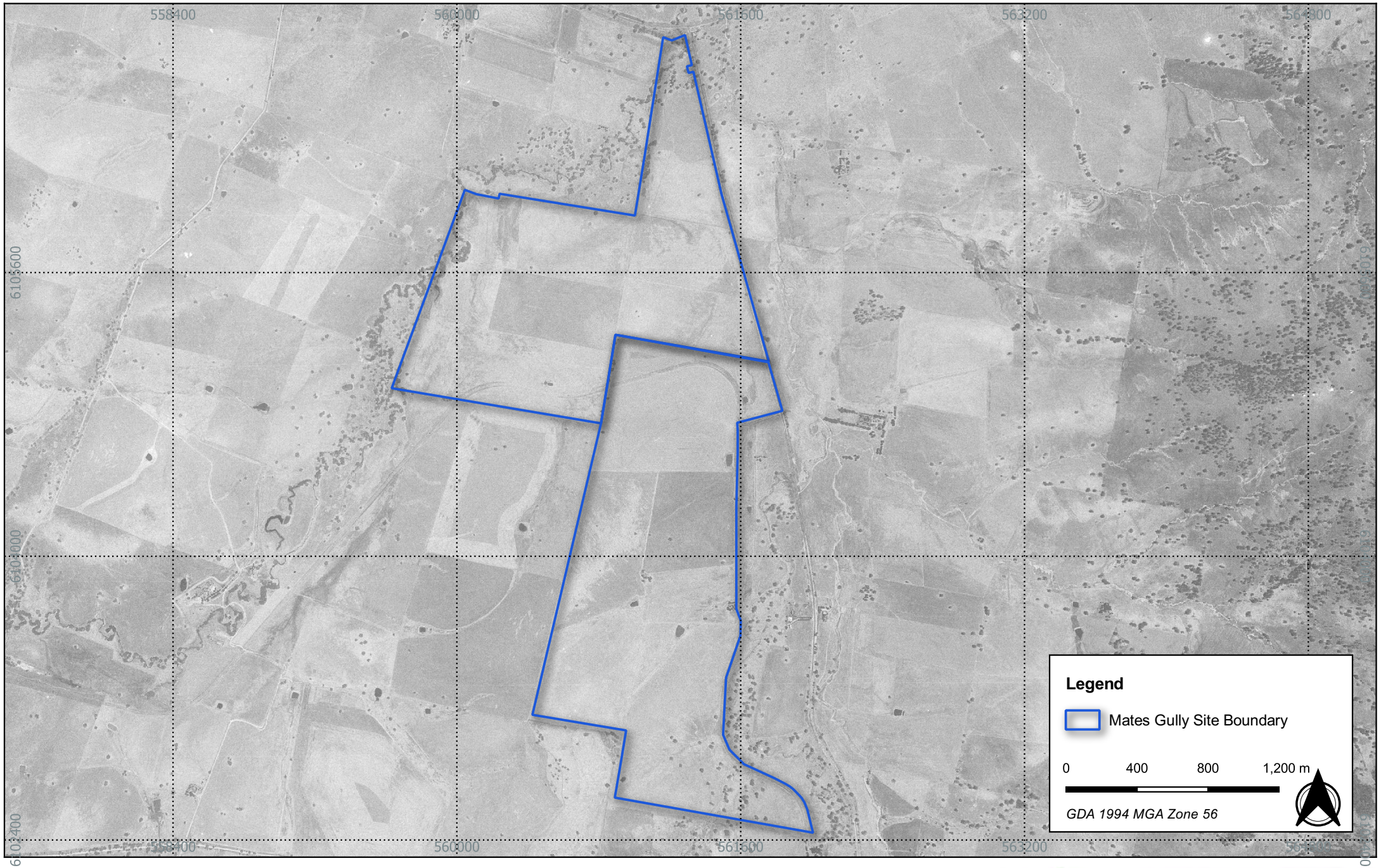

Figure 8 - 1986 Aerial of the Study Area

21116 - Mates Gully Solar Farm - PHAA

Source: NSW Spatial Services

Drawn by: ARH Date: 2021-09-16

AUSTRAL ARCHAEOLOGY

Figure 9 **Tarra Wingee, photograph taken by Peter Freeman 1999**

Figure 10 **Entrance gates to Tarra Wingee, 1999 (Source: Riverina Regional Library 0561224)**

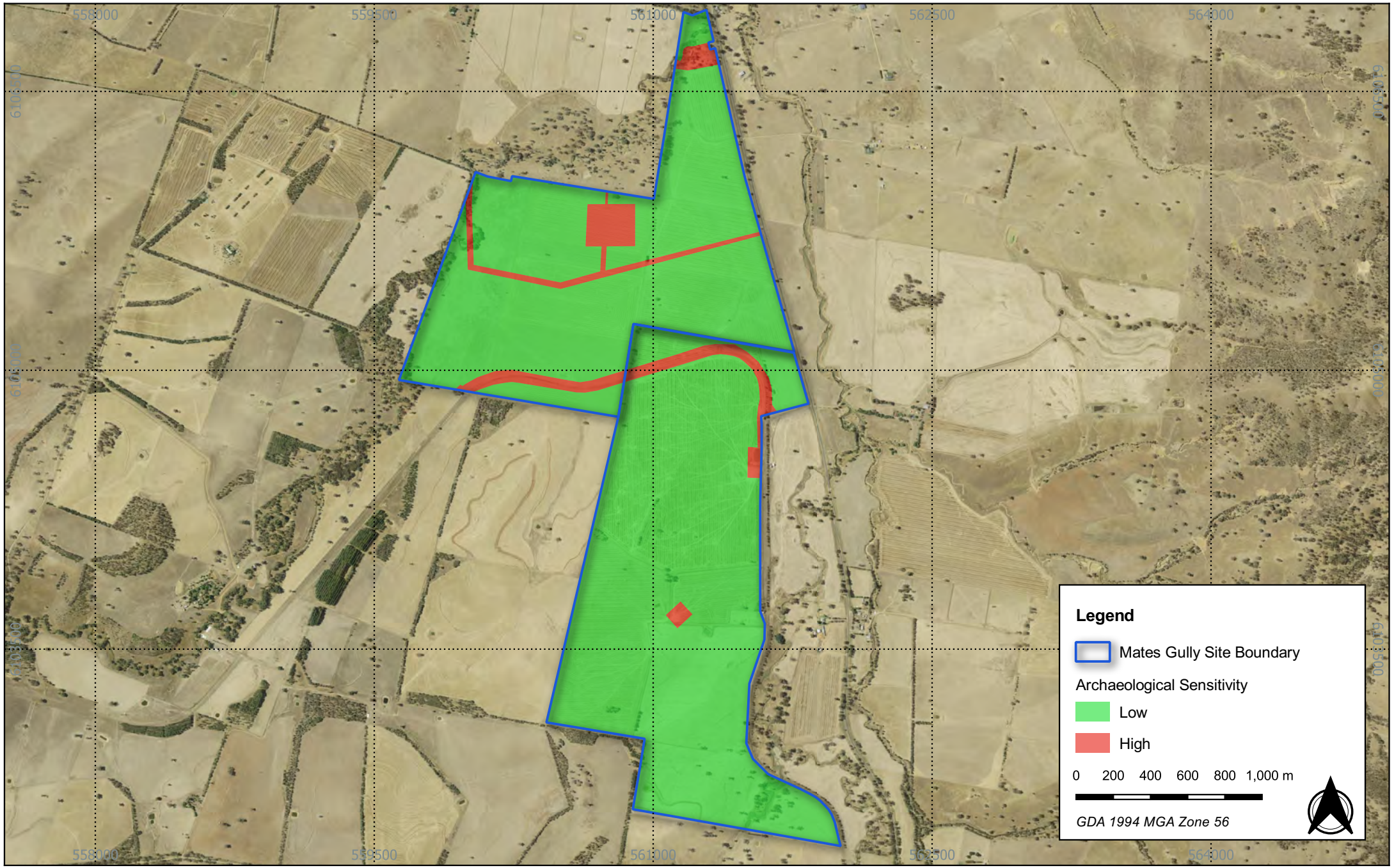

Figure 11 Historic heritage sensitivity in the study area 21116 - Mates Gully Solar Farm - Strategic Advice

Source: NSW LPI Aerial *Drawn by: WA Date: 2021-09-22*

AUSTRAL ARCHAEOLOGY

Appendix G Preliminary social impact scoping worksheet

Preliminary Social Impact Scoping Worksheet

Project name: Mates Gully Solar Farm Social Impact Scoping

Date: 28/01/2022

PROJECT ACTIVITIES	CATEGORIES OF SOCIAL IMPACTS	POTENTIAL IMPACTS ON PEOPLE		PREVIOUS INVESTIGATION OF IMPACT		CUMULATIVE IMPACTS	ELEMENTS OF IMPACTS - Based on preliminary investigation					ASSESSMENT LEVEL FOR EACH IMPACT				PROJECT REFINEMENT	MITIGATION / ENHANCEMENT MEASURES
Which **project activity / activities** could produce social impacts ?	what **social impact categories** could be affected by the project activities	What impacts are likely, and what concerns/aspirations have people expressed about the impact? Summarise how each relevant stakeholder group might experience the impact. NB. Where there are multiple stakeholder groups affected differently by an impact, or more than one impact from the activity, please add an additional row.	Is the impact expected to be **positive** or **negative**	Has this impact previously been investigated (on this or other projects)?	If "yes - this project," briefly describe the previous investigation. If "yes - other project," identify the other project and investigation	Will this impact combine with others from this project (think about when and where), and/or with impacts from other projects (cumulative)?	If yes, identify which other impacts and/or projects	Will the project activity (without mitigation or enhancement) cause a material social impact in terms of its: You can also consider the various magnitudes of these characteristics **extent** i.e. number of people potentially affected?	**duration** of expected impacts? (i.e. construction vs operational phase)	**intensity** of expected impacts i.e. scale or degree of change?	**sensitivity** or **vulnerability of people** potentially affected?	**level of concern/interest** of people potentially affected?	Level of assessment for each social impact	What methods and data sources will be used to investigate this impact? Secondary data	Primary Data - Consultation	Primary Data - Research	Has the project been refined in response to preliminary impact evaluation or stakeholder feedback?	What **mitigation / enhancement measures** are being considered?
Pre-construction - project conception, assessment and engagement	community	Proposed development projects can be grounds for contestation within local communities which can **negatively impact on community cohesion**. This can affect communities as a whole, and/or different distinct groups within communities. Available evidence (including engagement findings to date) suggests that this could be applicable for this project. Cumulative impacts may also apply.	Negative	Unknown	NA	Yes	Many major projects in and around Wagga Wagga (e.g. Wagga Wagga Special Activation Precinct (SAP), inland rail, other renewable developments).	Unknown	Unknown	Unknown	Unknown	Unknown	Standard	Government and stakeholder data and reports; Newspaper articles; social media; comparative studies.	Targeted interviews; online information sessions	Online survey	No	Recommend to implement robust community engagement as per the **Community Engagement Management Plan**
	health and wellbeing	Development projects can **create stress and anxiety** in people who oppose the project and/or are directly impacted. Available evidence (including engagement findings to date) suggests that this could be applicable for this project. Cumulative impacts may also apply.	Negative	Unknown	NA	Yes	As above.	Unknown	Unknown	Unknown	Unknown	Unknown	Standard	Government and stakeholder data and reports; newspaper articles; social media; comparative studies	Targeted interviews; online information sessions	Online survey	No	Recommend to implement robust community engagement as per the **Community Engagement Management Plan**
	decision-making systems	Perceptions of procedural fairness. Real or perceived lack of inclusion in the planning, assessment and consultation process. Can translate into real or perceived inability to make informed decisions, and/or inability to influence project decisions, including elements of project design. From an initial scan of available information (including review of engagement findings to date), this does not appear to be the case at this stage.	Negative	Unknown	N/A	Yes	As above.	Unknown	Unknown	Unknown	Unknown	Unknown	Minor	Government and stakeholder data and reports; newspaper articles; social media; comparative studies	Targeted interviews; online information sessions	Online survey	No	Recommend to implement robust community engagement as per the **Community Engagement Management Plan**
Construction - project demand for labour, goods and services	livelihoods	**Employment and labour impacts** - During construction, which is expected to take approximately 9 months, the project will directly generate employment, with a construction workforce of 150 people. Construction of this project will lean on the local and regional trades and services sectors. The main contractor during construction will be looking to bring in different skills and suppliers,which will likely include: earthworks and plant operators, labourers, mechanical and electrical engineers, building contractors, heavy vehicle operators, welding and fitting, accomodation, mechanics and maintenance, equipment hire, freight, fencing, and waste management. This may include specific opportunities for local residents, Aboriginal people, young people, apprentices, trainees, including the potential for scholarships. During construction, the project will also create employment and labour opportunities across its supply chains. During operations, the project is expected to employ 3 FTE workers. It needs to be noted that this demand for workers and supplies may place additional demands on other industries and existing development activities going in the region (e.g. Council civil works, housing development and/or other local construction activities). Wagga Wagga is currently experiencing rapid development and related skills shortages.	Positive	Yes - other project	Other local and regional renewable energy projects that are in pre-development stage, e.g., Inland Rail, Freight Hub, Wagga Wagga SAP, road upgrades, Uranguity SF and other renewable energy developments etc.	Yes	Other local and regional renewable energy projects that are in pre-development stage, e.g., Inland Rail, Freight Hub, Wagga Wagga SAP, road upgrades, Uranguity SF and other renewable energy developments etc.	Unknown	No	Unknown	Unknown	Unknown	Detailed	Government and stakeholder economic development data and reports. Comparative studies	Targeted interviews, online informations sessions	Online survey	No	Recommend to develop a **Local Industry Participation Plan**, which will focus on maximising the involvement of local people and businesses in the project. It will include specific focus on people and businesses within the Wagga LGA, and also the wider regional area. It will also consider opportunities for Aboriginal people and businesses, and young people. This will be developed through consultation with the local community and the key local economic development stakeholders. The Local Industry Participation Plan will take into account local labour and supply demands, and consider the potential negative impact of the Project in this context.
	livelihoods	An **increase in economic activity within the local and regional areas** is expected. The project will directly and indirectly (through its supply chains) create demand for goods and services such as accomodation, construction materials, freight and local labour. The increased income and spending of the construction workers and others across the supply chains, will also add to the stimulation of the local economies more broadly.	Positive	Yes - other project	Other local and regional renewable energy projects that are in pre-development stage, e.g., Inland Rail, Freight Hub, Wagga Wagga SAP, road upgrades, Uranguity Solar Farm (SF) and other renewable energy developments.	Yes	Other local and regional renewable energy projects that are in pre-development stage, e.g., Inland Rail, Freight Hub, Wagga Wagga SAP, road upgrades, Uranguity SF and other renewable energy developments	Unknown	No	Unknown	Unknown	Unknown	Detailed	Government and stakeholder economic development data and reports. Comparative studies.	Targeted interviews	Online survey	No	Recommend to develop a **Local Industry Participation Plan**, which will focus on maximising the involvement of local people and businesses in the project. It will include specific focus on people and businesses in Wagga Wagga LGA, and also the wider regional area. It will also consider opportunities for Aboriginal people and businesses, and young people. This will be developed through consultation with the local community and the key local economic development stakeholders. The **Local Procurement Policy** will outline the proponent's commitment to providing local and regional businesses the opportunity to supply goods and services to meet project needs during all phases of the project. This will be developed through consultation with the local community and with key local economic development stakeholders.
Construction - influx of out-of-area construction workers	livelihoods	Even with the development of a Local Industry Participation Plan, it is expected that workers will come in from other areas to work on the construction of this project. These workers will be housed in temporary accomodation and possibly in rental houses in Wagga Wagga. This may **constrain the availability of accommodation for tourism.** Cumulative impacts may also apply.	Negative	Unknown	NA	Yes	Other local and regional renewable energy projects that are in pre-development stage, e.g., Inland Rail, Freight Hub, Wagga Wagga SAP, road upgrades, Uranguity SF and other renewable energy developments. All may require non-resident workers, which would add pressure on local accommmodation.	Unknown	No	Unknown	Unknown	Unknown	Detailed	Government and stakeholder data and reports. Comparative studies	Targeted interviews	Online survey	No	Recommend to implement robust community engagement as per the **Community Engagement Management Plan**
	livelihoods	Even with the development of a Local Industry Participation Plan, it is expected that workers will come in from other areas to work on the construction of this project. These workers will be housed in temporary accomodation and potentially also in rental houses in Wagga Wagga. The rental housing market in Wagga Wagga is very tight, and so this may further **constrain the availability of rental housing for local residents.**	Negative	Unknown	NA	Yes	As above	Unknown	No	Unknown	Unknown	Unknown	Detailed	Government and stakeholder data and reports. Comparative studies	Targeted interviews	Online survey	No	Recommend to implement robust community engagement as per the **Community Engagement Management Plan**
	access	An influx of construction workers staying in Wagga Wagga and the broader LGA areas may **increase demand for local social and community infrastructure** (e.g. health and community services). Given short duration of the construction phase, this is unlikely to have significant impacts, however, cumulative impacts may apply	Negative	Yes - other project	Wagga SAP	Yes	Needs assessment conducted for the Wagga Wagga SAP identified an existing strain on social services in Wagga Wagga (e.g. healthcare, education) that is expected to increase in the future.	Unknown	No	Unknown	Unknown	Unknown	Minor	Government and stakeholder data and reports. Comparative studies	Targeted interviews	Online survey	No	Recommend to implement robust community engagement as per the **Community Engagement Management Plan**
Construction - intensive construction activity at the project site	way of life	During the construction period, there is the potential for **adverse amenity impacts (noise, visual, air quality)** and **traffic impacts** for landowners/neighbours near the Project site and/or along the proposed haulage route.	Negative	Unknown	N/A	Unknown	N/A	Unknown	Unknown	Unknown	Unknown	Unknown	Minor	Government and stakeholder data and reports. Comparative studies. Other techincal studies carried out as part of the EIS	Targeted interviews	Online survey	No	As part of the development application, **noise, visual and traffic impact assessments** will be undertaken.
Operation - presence of utility scale solar farm	surroundings	The project will involve a change of use of the land from rural, to land being used for the siting of energy infrastructure. This will create a **change to the visual and landscape character and sense of place** within this local area. Available evidence (including engagement findings to date) suggests that this could be applicable for this project, and cumulative impacts may also apply.	Negative	Unknown	NA	Yes	Other local and regional renewable energy projects that are in pre-development stage, e.g., Inland Rail, Freight Hub, Wagga Wagga SAP, road upgrades, Uranguity Solar Farm (SF) and other renewable energy developments.	Unknown	Yes	Unknown	Unknown	Unknown	Standard	Comparative studies, Visual Impact Assessment	Targeted interviews	Online survey	Yes	Recommendations as per the **Visual Impact Assessment**
	livelihoods	The Project will result in the **loss of agricultural land**, with the project site covering an area of 460ha. The project will see a diversion of land use away from agricultural production during constuction and operations. However, it will be explored as to whether this may be tempered by agri-solar opportunities. Available evidence (including engagement findings to date) suggests that this may be applicable for this project, and that cumulative impacts may also apply.	Negative	Unknown	NA	Yes	Other local and regional renewable energy projects that are in pre-development stage, e.g., Inland Rail, Freight Hub, Wagga Wagga SAP, road upgrades, Uranguity Solar Farm (SF) and other renewable energy developments.	Unknown	Yes	Unknown	Unknown	Unknown	Standard	Government and stakeholder data and reports. Comparative studies.	Targeted interviews	Online survey	No	To be determined.
	surroundings	Solar farms can potentially create **visual impacts relating to glare and reflectivity** for neighbouring and nearby residents. A Visual Impact Assessment will be undertaken.	Negative	No	NA	Unknown	NA	Unknown	Yes	Unknown	Unknown	Unknown	Standard	Comparative studies. Visual Impact Assessment	Targeted interviews	Online survey	No	Recommendations as per the **Visual Impact Assessment**
	access	The Proposal would provide an opportunity for optimising the management and security of energy for use in peak periods, particularly in a time of change when Australia begins to experience shortages due to population growth and coal fired power station closures. The Project cotnributes to **improving reliability and security of the electricity network** through the provision of an additional renewable energy source. The Proposal would be a key piece of electricity generation infrastructure in supporting Energy Development in regional NSW.	Positive	Unknown	NA	Yes	Other renewable energy projects that are present or being developed in the region	Yes	Yes	Unknown	Unknown	Unknown	Minor	Government and stakeholder data and reports. Comparative studies.	Targeted interviews	Online survey	No	To be determined