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GOULBURN RIVER SOLAR FARM

Scoping Report

FINAL

December 2021

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Scoping Report

FINAL

Prepared by
Umwelt (Australia) Pty Limited
on behalf of
Lightsource bp

Project Director:	Malinda Facey
Project Manager:	Caitlin Adcock
Report No.	21507/R01
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Document Status

Rev No.	Reviewer		Approved for Issue	
	Name	Date	Name	Date
3	Caitlin Adcock	17/12/2021	Malinda Facey	17/12/2021

Executive Summary

Lightsource bp proposes to develop a solar farm in the Hunter region of New South Wales (NSW), approximately 28 kilometres (km) south of the township of Merriwa within the Upper Hunter Local Government Area (LGA) (the Project Area). The proposed Goulburn River Solar Farm (the Project) will include an approximate 520 megawatt peak (MWp) of solar electricity generation with a Battery Energy Storage System (BESS) with a 260 MWp and 520 megawatt hour (MWh) capacity. The Project will also include supporting infrastructure, such as a substation and connection to an existing 500 kilovolt (kV) transmission line which intersects with the property.

The capital value of the Project is approximately $700 million, including both its battery storage component and solar farm component. The Project is therefore considered to be State Significant Development as defined under the State Environmental Planning Policy State and Regional Development 2011 (SRD SEPP) and will require development consent under Part 4 of *Environmental Planning and Assessment Act 1979* (the EP&A Act). Lightsource bp is seeking the NSW Department of Planning, Industry and Environment (DPIE) Secretary's Environmental Assessment Requirements (SEARs) for the Environmental Impact Statement (EIS) for the Project.

The Project may also impact on Matters of National Environmental Significance (MNES) under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). A referral has been submitted to the Department of Agriculture, Water and the Environment (DAWE). If the Project is considered a 'controlled action' by DAWE, the Project will require assessment through the NSW and Commonwealth Bilateral Agreement.

As a part of the social engagement for the Project, a stakeholder engagement strategy has been developed and engagement with key stakeholders has commenced. The consultation undertaken to date is outlined in **Section 6.0**. The results of the stakeholder and community engagement indicates several issues that will be investigated through the EIS.

An analysis of the environmental constraints and opportunities have highlighted the following key issues:

- **Biodiversity** – potential loss or modification of terrestrial habitats due to vegetation clearing with potential for impacts to threatened species and ecological communities in the Project Area.
- **Heritage (Aboriginal and Historic)–** potential for impacts to Aboriginal and/or historic heritage objects or heritage values within or near the Project Area.
- **Amenity –** potential for impacts to the surrounding landscape and character of the locality.
- **Access –** potential for disruption to traffic due to heavy vehicle delivery for project materials and accelerated degradation of roads.
- **Land –** potential for temporary soil erosion associated with land clearing during construction and runoff from solar modules during operation and potential impacts to agricultural land use.
- **Social –** potential impacts for social amenity due to land use change, changes in the local population and pressure of local facilities and services and economic benefits associated with local employment and training for staff.

- **Economic –** potential for financial benefits to the state and local community as well as direct and indirect benefits to local services through the construction and operational phase.
- **Water –** potential impacts to water resources and water supply for construction and operational purposes, as well as changes to surface water flow as a result of the Project.
- **Hazards and risk –** potential increased impact of bushfire, dangerous goods, flooding, groundwater contamination, hazardous and offensive development, land contamination, waste and other issues.
- **Built environment –** potential increase on the use of public land in the surrounding area (notably, the Goulburn River National Park) and increased use of the surrounding public infrastructure.
- **Air –** potential increase in particulate matter from construction operations and potential increase of atmospheric emissions from the construction phase of the Project.
- **Waste –** potential increase in landfill as a result of construction activities, as well as decommissioning of solar panels at their end of life.
- **Cumulative impacts –** potential cumulative impacts of the currently planned, proposed and constructed wind and solar farm projects, as well as existing mines in the vicinity of the Project Area, in relation to traffic and transport, visual amenity, social amenity, land use conflict and economic impacts.

The proposed approach to the assessment of these key issues is outlined in **Sections 7.1** to **7.14**. The Project layout and design will be subject to further analysis and refinement as part of the EIS process, as informed by the engineering design, specialist assessments and additional community and stakeholder engagement. This Scoping Report has assumed the maximum development footprint of the Project to take a conversative approach to identify potential environmental, social and economic impacts.

The EIS will accompany a Development Application (DA) for the Project and will include the relevant detailed technical studies to confirm the environmental, social and economic impacts of the Project. Additional mitigation measures will be developed throughout the EIS and will address the management of key issues and other issues identified in the assessment process.

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1.0 Introduction

1.1 Background

Lightsource Development Services Australia Pty Ltd (Lightsource bp) proposes to develop a solar farm in the Upper Hunter region of New South Wales (NSW), approximately 28 kilometres (km) southwest of Merriwa (see **Figure 1.1**). The proposed Goulburn River Solar Farm (the Project) will be located on an agricultural parcel of land zoned RU1 – Primary Production (the Project Area), surrounded by the Goulburn River National Park.

The Project will include an approximate 520 MWp (Megawatt peak) of solar electricity generation with a Battery Energy Storage System (BESS) of approximately 520 MWh (Megawatt hour). The Project will connect to an existing 500 kilovolt (kV) transmission line via a proposed substation to be located in the south-eastern section of the Project Area. The Project will include the construction, operation, civil works, maintenance and decommissioning of the proposed solar farm and BESS, as well as associated infrastructure. As a part of the Project, upgrades to the primary access road, being Wollara Road and Ringwood Road, will be required to facilitate over-dimensional and heavy vehicles to access the Project Area. This work will be minimised by using all-weather seal where possible and avoiding unnecessary road works to minimise impacts to roadside vegetation. Further details on the Project are provided in **Section 4.0**.

The Project Area covers an area of approximately 2,000 ha with a development footprint of approximately 1,249 ha. The Project Area encompasses two freehold properties and sections of Crown Land which occur along Wollara Road (see **Figure 1.2**). The location of the Project is shown in below in **Figure 1.1**, and an indicative maximum development footprint is provided in **Figure 4.2**. The Proponent notes though that this indicative maximum development footprint does not include potential access tracks between areas of the solar farm, as well as underground cabling. These additional impact areas would be further detailed within the EIS.

The Project Area largely consists of cleared agricultural land, with patches of remnant vegetation present across the site. The remnant vegetation is denser towards the edges of the property which backs onto the Goulburn River National Park. Further development of the Project's design will be aimed at retaining as much vegetation as possible to minimise impacts to biodiversity and heritage, as well as to maintain habitat connectivity for the surrounding National Park. Areas of dense vegetation occur primarily on areas of uneven and sloping terrain within the Project Area that are unsuitable for solar arrays, and so the proposed solar farm will largely avoid disturbing these areas of vegetation. The preliminary layout, position of the substation, road upgrades and site access requirements will be subject to further review and refinement as the environmental and social impact assessments progress.

The Project is considered a State Significant Development (SSD) under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and State Environmental Planning Policy (State and Regional Development) 2011 (SRD SEPP).

The objectives of the Project are to:

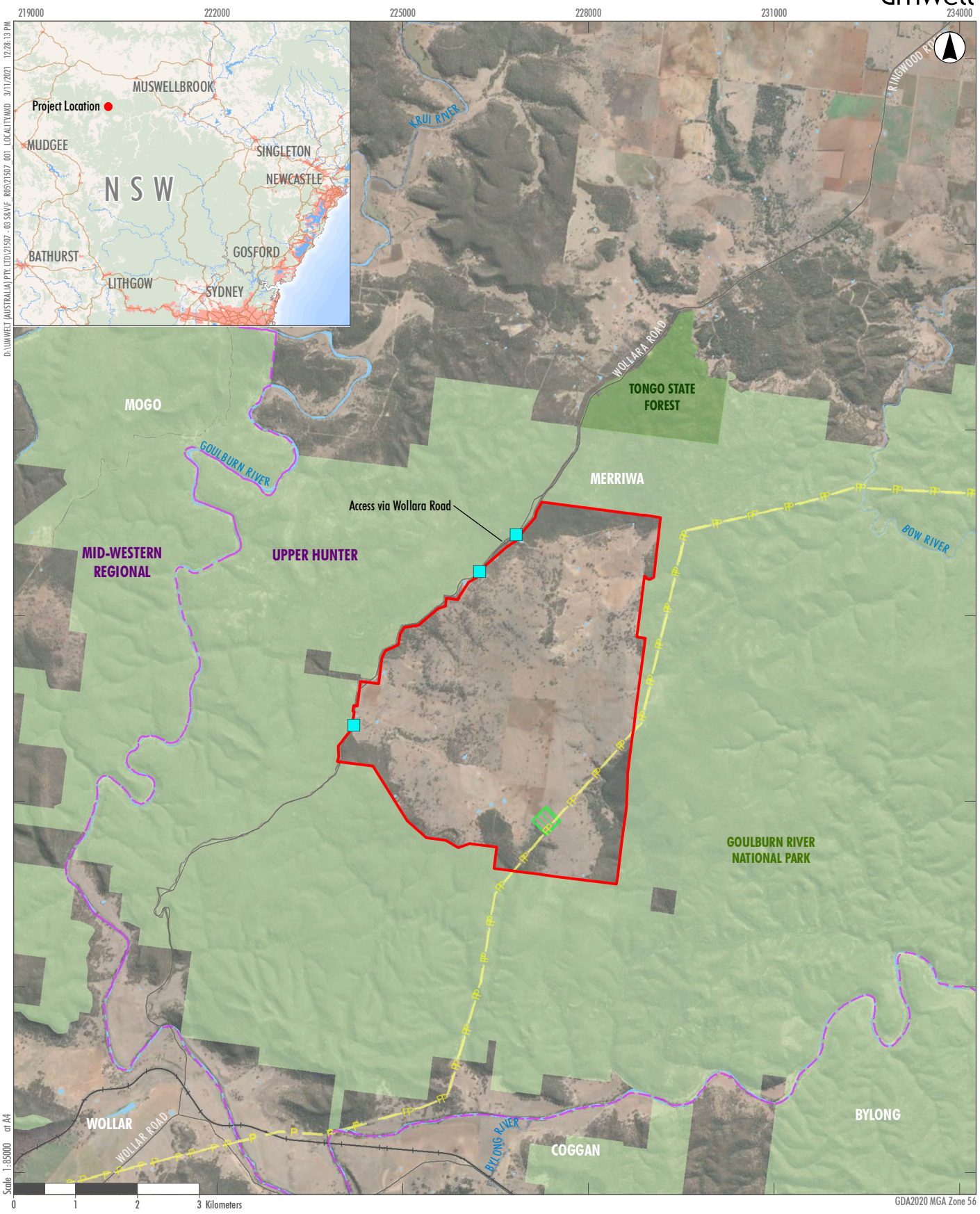
- Deliver affordable and sustainable solar power to businesses and communities within NSW.
- Provide renewable energy that would contribute to the reduction of greenhouse gases across NSW, avoiding up to 705,000 tonnes per annum of carbon dioxide.
- Support the local regional economy by preferencing local workers and businesses in the development, construction and operation of the Project.

- Facilitate community engagement and participation in the design, development and operation of the Project.
- Minimise environmental and heritage impacts to the Project Area through adaptive design.

The Scoping report will use the following terminology:

- **The Project** – this is in reference to the proposed development, including the solar farm, BESS and all associated infrastructure including the substation, as described in **Section 4.0**.
- **The Project Area** – located on two freehold properties spanning multiple lots, covering an area of approximately 2,000 hectares (ha) with a potential impact footprint of 1,249.4 ha. This includes the site areas for the solar farm and BESS and the electrical substation, as identified in **Figure 4.2**.
- **Landholder** – there are two land holders for the whole Project Area.

Refer to **Section 10.0** for the glossary of terms and abbreviations used in this Scoping Report.



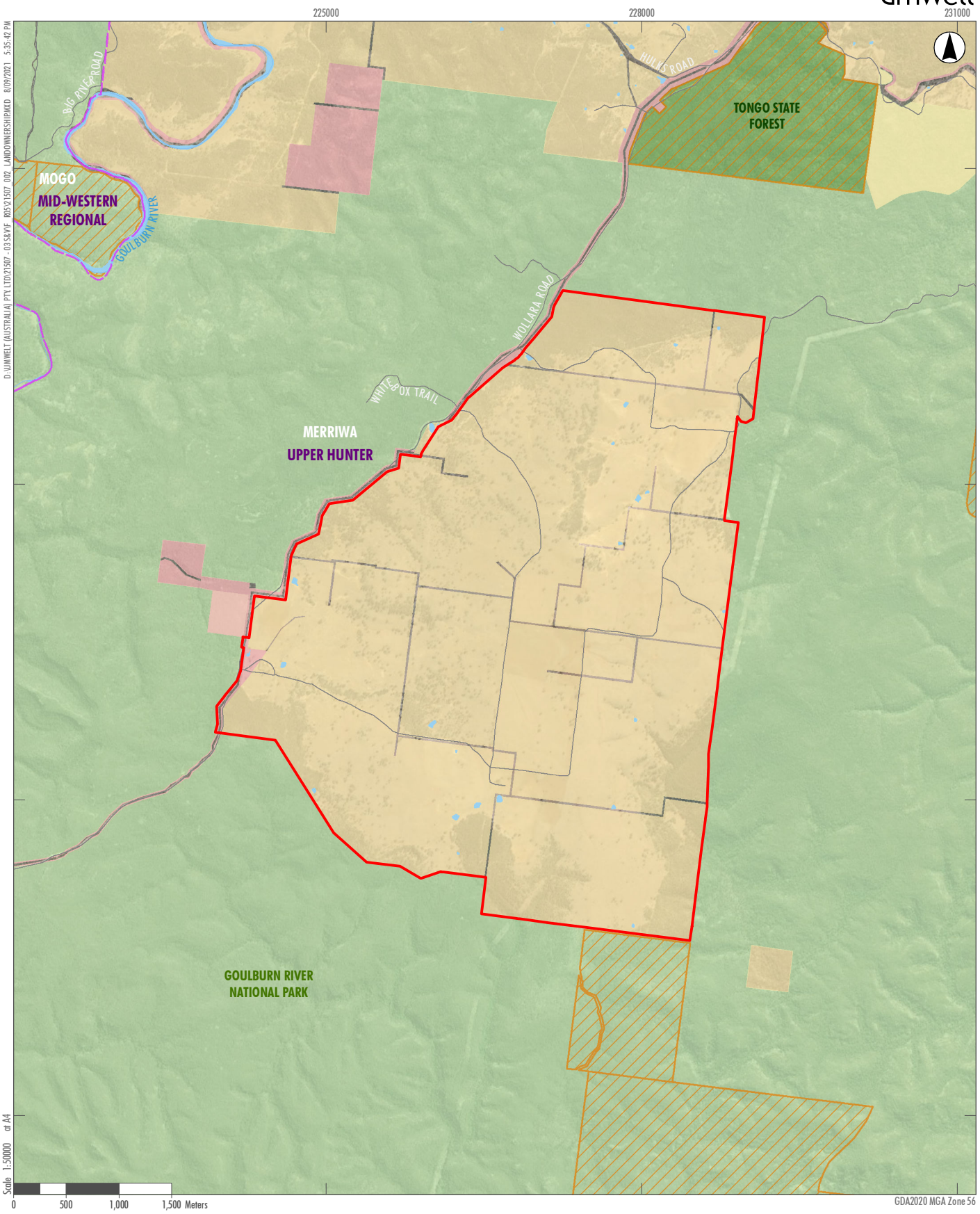
Legend

- Project Boundary
- Substation
- Local Goverment Boundary
- NSW National Parks
- NSW State Forests
- Electricity Transmission Line
- Potential Access Points
- Road
- Railway
- Waterbodies
- Creeks/ Rivers

FIGURE 1.1

Site Context and Project Area

Image Source: ESRI Basemap (2021) Data source: NSW DFSI (2021)



Legend

- Project Boundary
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- Creeks/ Rivers

Land Control

- Crown
- Freehold
- NSW Government

FIGURE 1.2

Land Ownership in Project Area

Image Source: ESRI Basemap (2021) Data source: NSW DFSI (2021)

2.0 Applicant's Details

The Proponent for the DA for the Project is Lightsource Development Services Australia Pty Ltd (Lightsource bp) (ABN 26 623 301 799). Lightsource bp was formed in 2017 as a partnership between the European solar farm developer Lightsource and global energy company, bp. Lightsource bp is a global leader in the development and management of utility scale solar projects, with a successful track record of progressing projects from early-stage development through to operation.

Lightsource bp has developed over 300 solar projects across the globe to date, equating to a total of 3.5 gigawatts (GW), and currently has a 20+ GW development pipeline across 17 countries. Lightsource bp entered the Australian market in 2018 and will shortly be commencing operation of a 200 megawatt direct current (MWdc) site in Wellington, NSW. Lightsource bp is the owner and operator of this solar farm. Several more projects are in development and construction across Australia, including, but not limited to:

- Woolooga Solar Farm, Queensland (210 MWp): Planning approval received in March 2020. Construction underway, to be complete in mid 2022.
- West Wyalong Solar Farm, NSW (108 MWp): Planning approval received in November 2019. Construction underway, to be complete in mid 2022.
- Wellington North Solar Farm, NSW (415 MWp): Planning approval received in April 2021. Financial close expected in 2022, with construction to be completed in 2023.

To achieve positive local and regional community outcomes, Lightsource bp is committed to building strong relationships with key stakeholders and local communities. At the early development stage, emphasis is put on encouraging local participation and community input.

3.0 Strategic Context

3.1 Project Justification

The development of renewable energy projects aligns with both Federal and NSW Government commitments to increase renewable energy generation and reduce carbon emissions across the NSW and Australian economies. The Project will generate enough renewable electricity each year to power 180,000 homes across NSW.

Further details regarding the strategic context and Project benefits of the development are provided in the following sections.

3.1.1 Federal and State Commitments

Australia is one of the 190 countries from around the world signed to the international climate change agreement (the Paris Agreement). The Paris Agreement aims to:

- Hold the increase in the global average temperature to below 2°C above pre-industrial levels, and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels.
- Increase the ability [of nations] to adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas emissions development, in a manner that does not threaten food production.
- Make finance flows consistent with a pathway towards low greenhouse gas emissions and climate resilient development.

The Paris Agreement seeks to meet its objectives by developing programs and mechanisms that:

- Require participating Parties to prepare and communicate greenhouse gas mitigation contributions. Parties have been expected to set mitigation targets for 2020, and then develop new targets every five years. Each successive target is expected to represent a larger mitigation effort than the previous target.
- Promote climate change resilience and adaptation.
- Provide mitigation and adaptation funding to developing countries.
- Foster mitigation and adaptation technology transfer between Parties.
- Require participating Parties to report progress towards their mitigation contributions on an annual basis.

Australia signed the Paris Agreement on 22 April 2016. Party obligations under the Paris Agreement will drive national greenhouse gas policy between 2020 and 2030. Australia's commitment to the Paris Agreement includes reducing greenhouse gas emissions by 26 - 28% on 2005 levels, by 2030 (Australian Government, 2020). Australia's Nationally Determined Contribution (NDC) prescribes an unconditional economy-wide target to reduce greenhouse gas emissions, and states that future policies will target emissions generated from energy use, industrial processes, agriculture, land-use, land-use change and forestry and waste (UNFCCC, 2015).

In order to reduce the emissions of greenhouse gases generated by the electricity sector, and to encourage additional generation of electricity from suitable and renewable resources, the Australian Government introduced the Renewable Energy Target (RET) in 2009. The RET has been a successful initiative with the current target of 33,000 gigawatt-hours (GWh) being met in September 2019, more than one year ahead of schedule.

The NSW Government has developed its NSW Climate Change Policy Framework, which aims to deliver net zero emissions by 2050 and make the State more resilient and responsive to climate change (OEH, 2016). Under the NSW Climate Change Policy Framework, NSW has committed to both follow the Paris Agreement and to work to complement national action.

The policy framework is being delivered through the following:

- The Climate Change Fund (NSW Government, 2021)
- Developing an economic appraisal methodology to value greenhouse gas emissions mitigation
- Embedded climate change mitigation and adaptation across government operations
- Building on NSW's expansion of renewable energy
- Developing action plans and strategies.

In 2013 the NSW Government released the Renewable Energy Action Plan (REAP) and the NSW Energy Efficiency Action Plan (EEAP) (NSW Trade & Investment, 2013). The REAP aimed to increase the generation, storage and use of renewable energy in NSW, at minimum cost to customers and with maximum benefit to NSW (OEH, 2013). The three core goals of the REAP were to attract renewable energy investment, build community support for renewable energy and attract and grow expertise in renewable energy (OEH, 2013). Based on the implementation of the REAP, renewable energy is now well-placed to play a leading role in meeting NSW's energy needs into the future and has resulted in solar- and wind-generated electricity tripling during the five years the REAP was implemented.

The EEAP was a four-year strategic action plan aimed at improving energy efficiency in the NSW business, residential and public sectors. The EEAP included targets to realise annual energy savings of 16,000 GWh (gigawatt hours) by 2020. The programs delivered by the NSW Government under the EEAP delivered savings to all participants in all target sectors, particularly businesses and low-income households (OEH, 2018). The peak load on the electricity network was also reduced, which helped reduce the need to invest in expanding electricity network infrastructure (OEH, 2018).

The Project will deliver clean, reliable and affordable energy and is well aligned with the objectives of the current Federal and State commitments to combat climate change and to provide affordable renewable energy to the community and businesses.

3.1.2 Local and Regional Renewables Context

The Project Area is located in close proximity to the Central West Orana Renewable Energy Zone (REZ), however, it is not related to the REZ and is not dependent on the establishment of the REZ. The REZ is located around the townships of Dubbo and Wellington and is currently in the early development phase. This REZ is expected to provide up to 3000 MW of new network capacity by the mid-2020's, enough to power 1.4 million homes. This REZ is expected to bring up to $5.2 billion in private investment to the Central West Orana region by 2030, and at its peak the REZ is expected to support around 3900 construction jobs in the region. This REZ was chosen because of the benefits from relatively low transmission build cost due to its proximity to the existing transmission network structures.

Due to the close proximity of the Project to the REZ the Project is expected to support the local uptake and use of renewable energy.

3.2 Key Features of the Project Area

3.2.1 Natural Features

The Project Area is surrounded by the Goulburn River National Park, which covers approximately 70,161 ha of dissected sandstone country and extends along approximately 90 km of the Goulburn River. The Goulburn River National Park provides numerous biodiversity, Aboriginal and cultural heritage, education and recreational values for the region.

The National Park is also botanically significant as it forms part of a transition zone containing a mixture of plants from the south-east, north-west and western parts of the State. Within the National Park there are pockets of soils derived from basalt outcrops, which provide diversity in available habitat for plants and animals compared to the sandstone-based soils (NPWS, 2003).

The Goulburn River National Park also supports a diverse range of vulnerable, endangered and critically endangered fauna including:

- Brush-tailed Rock Wallaby (*Petrogale penicillate*)
- New Holland Mouse (*Pseudomys novaehollandiae*)
- Square-tailed Kite (*Lophoictinia isura*)
- Powerful Owl (*Ninox strenua*)
- Large-eared Pied Bat (*Chalinolobus dwyeri*)
- Common Bent-winged Bat (*Miniopterus schreibersii*)
- Swift Parrot (*Lathamus discolor*)
- Turquoise Parrot (*Neophema pulchella*)
- Painted Honeyeater (*Grantiella picta*)
- Glossy-black Cockatoo (*Calyptorhynchus lathami*)
- Red-tailed Black Cockatoo (*Calyptorhynchus banksii*)
- Malleefowl (*Leipoa ocellata*)
- Regent Honeyeater (*Anthochaera Phrygia*)
- Broadheaded Snake (*Hoplocephalus bungaroides*).

The Project Area consists of agricultural land, the majority of which has been subject to land clearing, a long history of grazing, and cropping and pasture improvement. Historically, the whole of the landscape would have supported open woodlands and forests. As a result, the Project Area supports a mosaic of exotic vegetation, derived native grasslands in a range of conditions, isolated paddock trees, areas of thinned woodland and forest, and areas of intact woodland and forest around the periphery of the Project Area.

These remaining vegetated areas in the Project Area act as a potential corridor for fauna species across the National Park, supporting the local biodiversity.

Preliminary ecological investigations have confirmed the presence of one listed threatened ecological community, the White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grasslands critically endangered ecological community.

Biodiversity and vegetation within the Project Area are further discussed in **Sections 7.1** and **7.2** of this Scoping Report.

3.2.2 Cultural Heritage

The Project Area is entirely located within an active registered Native Title Claim (NC2011/006) held by the Gomeroi People. It is also 4km north of the boundary of the active registered claim (NC2018/002) Warrabinga-Wiradjuri #7. The surrounding Goulburn River National Park contains several hundred recorded Aboriginal archaeological sites that demonstrate the way in which Aboriginal people lived and moved through this landscape over many thousands of years. It is recognised as a significant cultural landscape.

The Merriwa region was formally known by European settlers as the Gummun District. The first European settlers came to the area in the late 1820s, looking for pastoral land. Land grants were given to settlers from the 1830s onwards. The land was primarily used for grazing sheep, with wool production the primary rural industry.

Further discussion on the heritage of the Proposal Area is discussed in **Section 7.3** of this Scoping Report**.**

3.2.3 Major Infrastructure

A 500 kV transmission line runs through Goulburn River National Park and passes through the south-eastern corner of the Project Area. This transmission line is owned and operated by TransGrid and the Project will connect directly to the network through this transmission line (refer to **Appendix E**).

Access to the Project Area would also be achieved via the Golden Highway. The Golden Highway is a major road running for 313 km. The Golden Highway is located in the Hunter and Orana regions of NSW, the highway runs from Dubbo to Newcastle.

3.2.4 Project Benefits

The Project will provide long-term, strategic benefits to NSW, including:

- Renewable energy supply to assist with fulfilling the current obligations under State and Federal renewable energy targets.
- Providing for cleaner reliable electricity generation and assisting with meeting current load demand while reducing greenhouse gas emissions and the impacts of climate change.
- Providing regional investment in the NSW renewable energy sector.

The Project will also provide direct financial benefits to the regional and local communities, including:

- Capital investment of the solar farm is approximately $700 million.
- Employment generation creating 350-500 direct jobs during the construction phase with up to around 10 direct jobs during the operational phase.
-

- Indirect benefits to local services through the construction and operation phases.
- Mixed use agriculture activities within the Project Area, including:
    - sheep grazing within the development footprint; and
    - cattle grazing outside of the development footprint and within the Project Area.

4.0 The Project

The Project will include the construction, operation, maintenance and decommissioning of a photovoltaic (PV) solar farm with a capacity of approximately 520 MWp, which will supply electricity to the national electricity grid. The Project will also include a BESS with a proposed capacity of about 520 MWh and an electrical substation to connect the solar farm to the existing 500 kV transmission line that runs through the Project Area.

The Project will include construction of operations and maintenance buildings, civil works, road upgrades, and electrical infrastructure required to connect the electricity generation to the transmission network. The Project will be accessed through Wollara Road (refer to **Figure 4.3**), which will require minor upgrades to accommodate the heavy vehicles and machinery needed to transport the various materials required for the Project.

The connection to the grid will occur through a newly constructed substation which will be located in the southeast portion of the Project Area, near where the transmissions line passes through. The preliminary layout of the photovoltaic (PV) modules will be subject to further review and refinement as the environmental and social impact assessments progress.

Subject to the final design process, the key components of the Project include:

- Approximately 950,000 bifacial solar PV modules in an east-west single-axis tracking arrangement with an approximate height of 5 metres (m) above ground level.
- A battery energy storage system (BESS) with an approximate 260 MWp and 520 MWh capacity. The BESS will be housed in a series of outdoor containers, either distributed across the site or aggregated in one central location.
- Onsite 500 kV switchyard and substation, with underground electrical conduits and cabling leading into the yard and overhead lines reaching above to the existing transmission line. An additional tower may be erected on the current line to accommodate the grid connection.
- Onsite power line connection via underground electrical conduits and cabling.
- Communications tower, up to 75 m high, providing communications, radio and cellular services to the site and wider region.
- Internal access allowing for site maintenance.
- Site office and operations and maintenance building with parking for the operations team.
- Primary solar farm site access point from existing driveway off of Wollara Road, with addition access points proposed along the north-western boundary of the Project Area.
- Drainage line crossings if and where required to manage existing surface water flows (to be determined during further design development) and access points for construction purposes.
- Perimeter security fencing, crossing gates, water tanks or dams, and potential alternate secondary access points to facilitate sheep grazing.

The Project Area comprises two freehold properties that span across multiple lots, covering an area of approximately 2,000 ha with the developmental footprint being approximately 1,249.4 ha. The Project Area is currently utilised for agricultural cropping and grazing. There are portions of remnant vegetation present in the Project Area, and it is surrounded by the Goulburn River National Park.

The proposed substation may require subdivision within the Project Area. This would be further assessed and confirmed within the EIS. The Project Area will also continue to support livestock, with approximately 1,000 sheep expected to continue to graze the site. This would ensure agricultural use of the Project Area and will assist in limiting biomass and bushfire risk.

Construction compound areas (including laydown areas, security hut and temporary parking) are proposed within the indicative maximum development footprint (refer to **Figure 4.2**). It is noted that additional access tracks and underground cabling may be required outside of the indicative maximum development footprint. This would be further investigated and assessed within the EIS.

The Project is expected to operate for 40 years or more. After the initial 40-year operating period, the solar farm would either be decommissioned, removing all above ground infrastructure and returning the site to its existing land capability, or repurposed with new PV equipment subject to technical feasibility and planning consents.

The Project is currently expected to have a capital investment value of $700 million. This will be updated and presented in the EIS to support the development application.

Figure 4.1 Example of 2P solar panel mounting (Umwelt, 2021)

4.1 Project Alternatives

The Proponent has considered a range of alternative options for the Project throughout the design process to date, with the aim of minimising environmental and social impacts while maximising the potential for electricity generation. As the Project design and environment assessment progresses, the Project will continue to be updated to meet these goals.

Project Alternatives considered to date include:

- The do-nothing approach. The Proponent considers the Project to be an important contributor to meet Federal and State targets for greenhouse gas emission reductions and renewable energy targets (see **Section 3.2.4**), particularly as fossil fuel generators are progressively decommissioned over the coming years. By not progressing the Project, it would fail to meet these government objectives and to ensure reliable electricity supply into the future and would fail to provide the economic benefits described in **Section 7.8**.

- Alternative project layouts based on different solar farm designs using mature technology with a proven track record of large-scale implementation, including:

    - Fixed versus tracking options for PV module mounting: A single-axis tracking system was chosen for the Project as it allows for more efficient electricity generation than fixed tilt options, leading to more efficient land use. Tracking systems also have a lower visual impact as the minimise glare from the sun, which can occur when the sun is at low angles in the sky and the PV modules are not facing the sun.

    - Mono-facial versus bifacial PV modules: Bifacial PV modules were selected for the Project as they allow for more efficient electricity generation than traditional single-sided PV modules, leading to more efficient land use. The distance between the rows of modules is also larger for bifacial modules, which helps to minimise environmental and visual impacts of the Project and facilitate grazing.

Design development for the Project is ongoing and will be refined during the EIS preparation process.

4.2 Project Area

The Project Area comprises approximately 2,000 ha of land in total, located between Merriwa (to the northeast) and Coggan (to the southeast), as shown in **Figure 1.1**. The Project Area is surrounded by the Goulburn River National Park and is situated within the Upper Hunter LGA. Access to the site will be through Ringwood Road and Wollara Road (existing local road), from the north via the Golden Highway. Light vehicles may also access the Project Area from the south, coming from Gulgong and Mudgee. Ringwood Road and Wollara Road may require minor upgrades to support construction and transport of materials into the Project Area. A traffic scoping assessment is included below at **Section 7.5**. Wollara Road is also an access point to the Goulburn River National Park, which may result in additional assessment and consultation being required to ensure any access impacts are mitigated and managed.

Land within the Project Area has been subject to extensive vegetation clearing associated with historic agricultural land uses. The land within the Project Area is primarily used for agriculture (primarily grazing and some cropping). The Project Area is zoned RU1 Primary Production under the Upper Hunter Local Environmental Plan 2013 (Upper Hunter LEP). There is currently one dwelling located on the Project Area which is used by the landholder.

A number of rural properties occur within a 10km radius of the Project Area (see **Figure 4.4**), occurring outside of the Goulburn River National Park. The Project Area is visually secluded from these properties, being surrounded by the National Park. Consultation with landholders for these properties has commenced, as discussed in **Appendix C**.

4.3 Land Ownership

The Project Area is owned by two landowners, across multiple lots.

Lot:

- 30//750966
- 84//750966
- 26//750966
- 58//750956
- 29//750966
- 27//750966
- 28//750966
- 85//750966
- 105//750966
- 21//750966
- 62//750956
- 61//750956
- 7306//1165073
- 76//750966
- 75//750966
- 87//750966
- 86//750966
- 33//750956
- 8//750966
- 78//750966
- 99//750966
- 10//750966
- 5//750966
- 7//750966
- 77//750966
- 25//750966
- 6//750966
- 9//750966
- 42//750956
- 38//750966
- 64//750956
- 39//750966
- 102//750966
- 82//750956
- 57//750956
- 47//750956
- 30//750956
- 43//750956
- 32//750956
- 55//750956
- 31//750956
- 63//750956
- 56//750956
- 3//750956

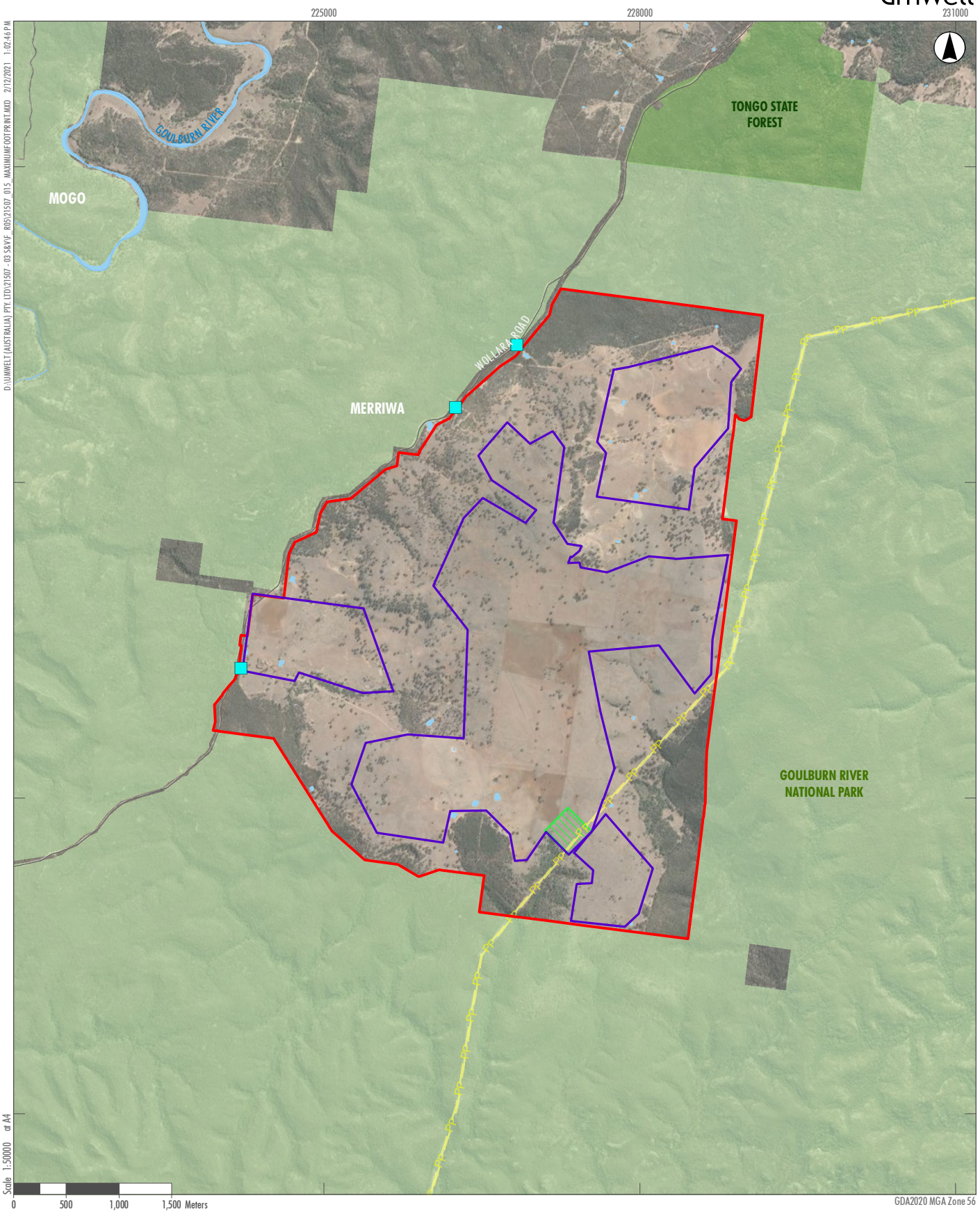
The Project Area is currently used for grazing and cropping activities, occurring across the site. The main Project Area is located on freehold land, while parts of Wollara Road are located on Crown land (see **Figure 1.2**). There is a small portion of the Project Area from the road reserve that reaches into the Project Area.

4.4 Project Planning Agreements

No Voluntary Planning Agreements have been entered into by the Proponent at this stage.

4.5 Other Agreements

A 500 kV transmission line runs through the south-eastern corner of the Project Area. This transmission line is owned and operated by TransGrid. Lightsource bp has consulted with TranGrid to develop the Project connection through the TransGrid network (see **Appendix E**). It has been confirmed that there is sufficient capacity to support the Project. The connection agreement will occur through a Connection Processes Agreement (CPA), which will allow for the Project to connect to the National Electricity Market (NEM).



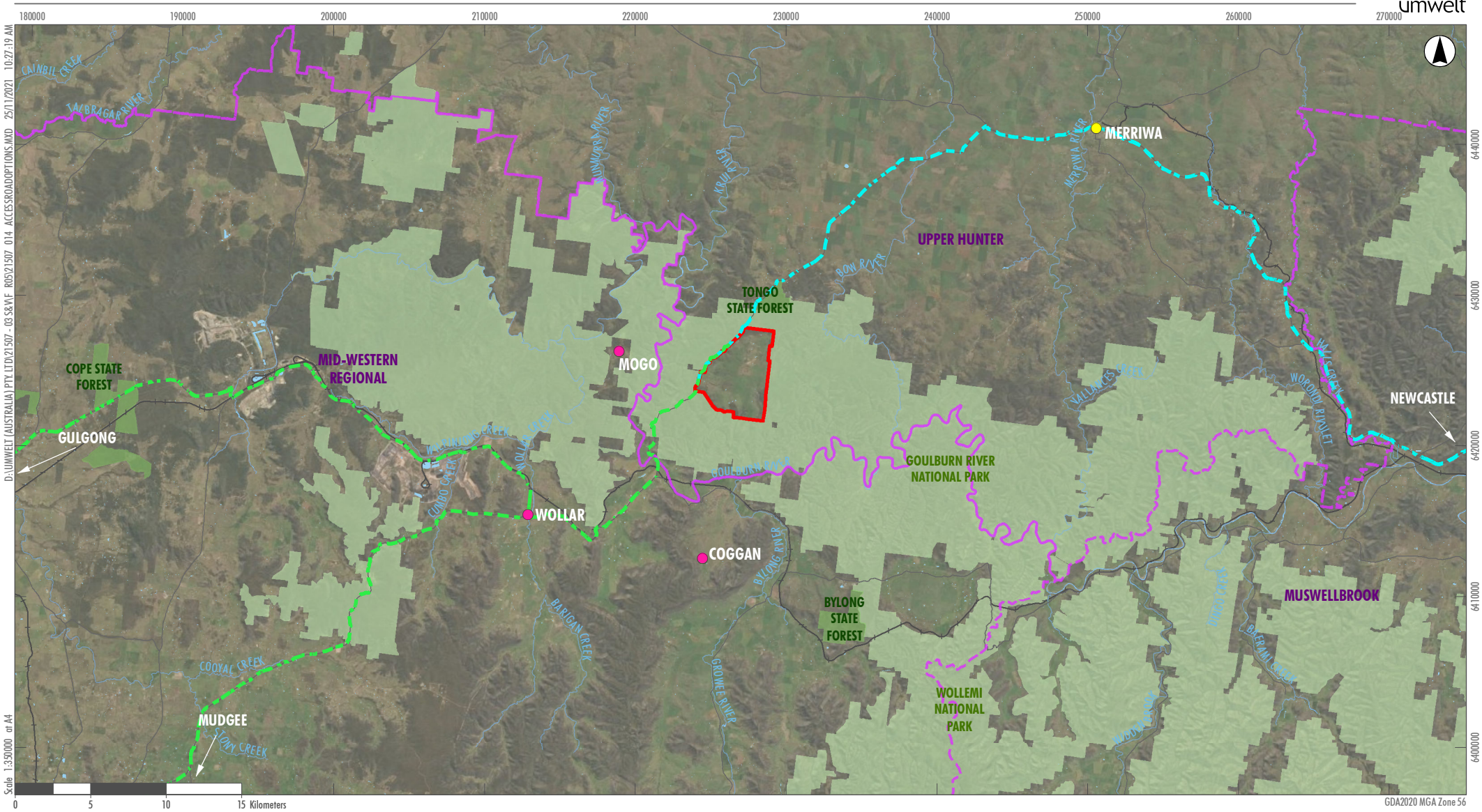
Legend

- Project Boundary
- Preliminary Development Boundary
- Substation
- Electricity Transmission Line
- Potential Access Points
- NSW National Parks
- NSW State Forests
- Road
- Creeks/ Rivers
- Waterbodies

FIGURE 4.2

Indicative Maximum Footprint

Image Source: ESRI Basemap (2021) Data source: NSW DFSI (2021)



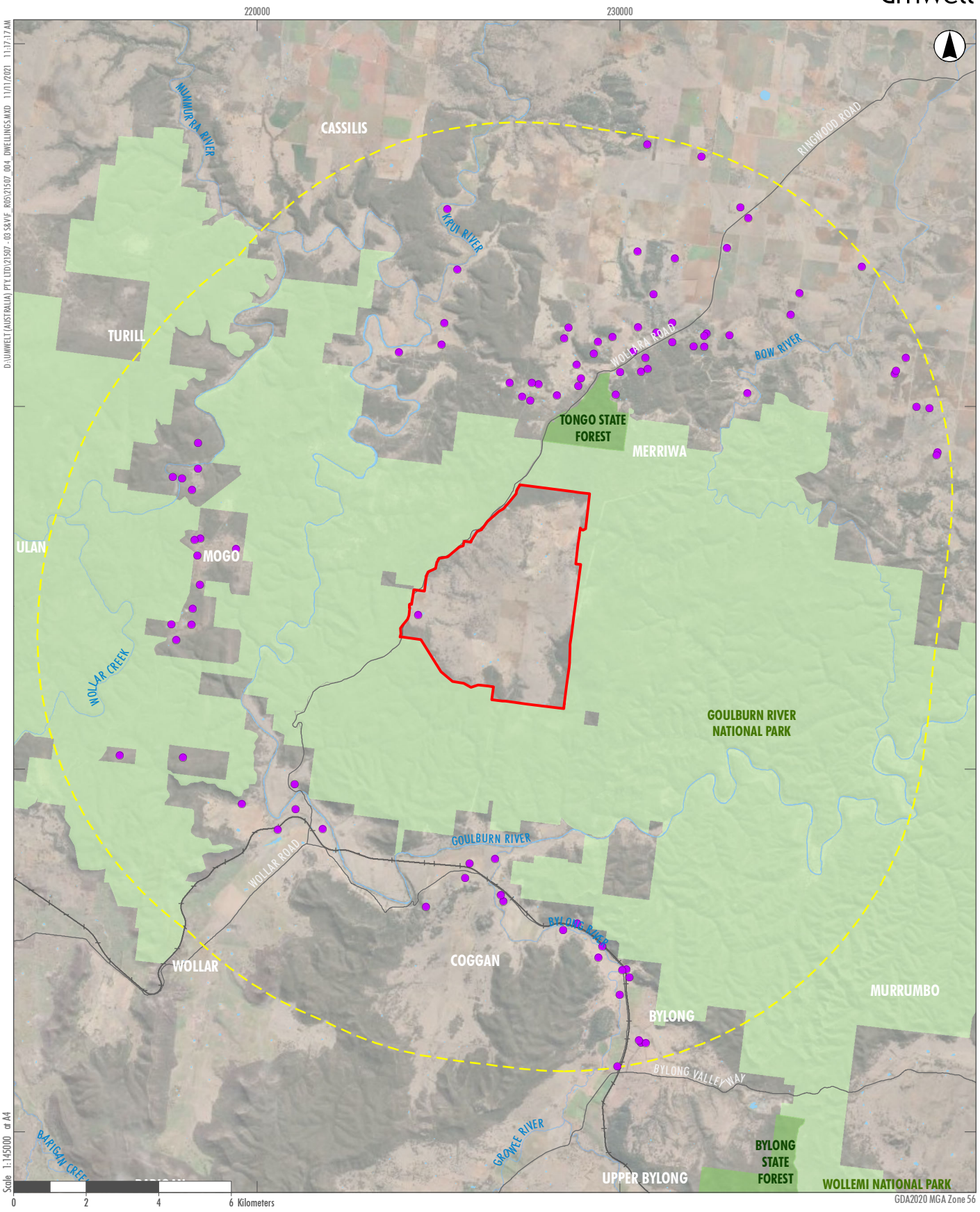
Legend

- Project Boundary
- Local Goverment Boundary
- Proximate Localities
- Townships
- Heavy Vehicle Access
- Light Vehicle Access
- NSW State Forests
- NSW National Parks
- Waterbodies
- Road
- Railway
- Creeks/ Rivers

Image Source: ESRI Basemap (2021) Data source: NSW DFSI (2021)

FIGURE 4.3

Proposed Access Route



Legend

- Project Boundary
- 10km Buffer
- NSW National Parks
- NSW State Forests
- Dwelling
- Road
- Railway
- Waterbodies
- Creeks/ Rivers

FIGURE 4.4

Dwellings located within 10 km of the Project Area

Image Source: ESRI Basemap (2021) Data source: NSW DFSI (2021)

5.0 Statutory Context

5.1 Strategic Planning Context

5.1.1 NSW 2021 Plan & Renewable Energy Action Plan

In 2011, the NSW Government released the NSW 2021 plan, which is a 10-year plan that sets State-wide priorities for action and guides resource allocation (NSW Government , 2011). The plan aims to rebuild the economy, provide quality services, renovate infrastructure, restore government accountability, and strengthen our local environment. Goal 22 of this plan seeks to protect the natural environment and includes a specific target to increase renewable energy. The plan states:

'We will contribute to the national renewable energy target by promoting energy security through a more diverse energy mix, reducing coal dependence, increasing energy efficiency and moving to lower emission energy sources. Specific initiatives include:

- *establishing a Joint Industry Government Taskforce to develop a Renewable Energy Action Plan for NSW to identify opportunities for investment in renewable energy sources.'*

Since release of the NSW 2021 Plan, the NSW Government has overseen the development of the NSW (REAP), released in September 2013. The vision of the plan is *a 'secure, affordable and clean future for NSW'*. Goal 1 of the REAP is to attract renewable energy investment, including to *'support mid-scale solar PV to enable an uptake of solar technologies where they are most cost effective*'.

The Project aligns with this State-led objective and is consistent with the goal and intent of the REAP.

5.2 Environmental Planning Instruments

5.2.1 NSW Planning Approval Pathway

There are several planning instruments in NSW which regulate the planning and environmental impacts of development. The primary instrument is the *Environmental Planning and Assessment Act 1979* (EP&A Act) which regulates the environmental assessment and approval process for development in NSW. The EP&A Act is supported by the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation).

5.2.1.1 NSW *Environmental Planning and Assessment Act 1979* (EP&A Act)

The Project will require development consent under Part 4 of the EP&A Act. The Project is a State Significant Development (SSD) under the provisions of the State Environmental Planning Policy (State and Regional Development) 2011 (SRD SEPP) (see **Section 5.2.1.2**) and is subject to the provisions of Division 4.7 of the EP&A Act. The development application will be lodged with the Planning Secretary of the DPIE. This report accompanies the request for the SEARs for the EIS.

Section 4.15 of the EP&A Act describes the matters for consideration in assessing SSD, including provisions of relevant environmental planning instruments, proposed instruments that have been the subject of public consultation, development control plans, planning agreements, and statutory regulations. The assessment of SSD must also consider the likely impacts of the development, suitability of the Project Area, any submissions received, and the public interest.

Section 4.41 of the EP&A Act clarifies that development consent for SSD includes authorisations under the following statutory provisions, meaning that separate planning approval processes do not apply:

- A permit under Section 201, 205 or 219 of the *Fisheries Management Act 1994* (FM Act).
- An approval under Part 4, or an excavation permit under Section 139, of the *Heritage Act 1977* (Heritage Act).
- An Aboriginal heritage impact permit under Section 90 of the *National Parks and Wildlife Act 1974* (NPW Act).
- A bushfire safety authority under Section 100B of the *Rural Fires Act 1997.*
- A water use approval under Section 89, a water management work approval under Section 90 or an activity approval (other than an aquifer interference approval) under Section 91 of the *Water Management Act 2000.*

This Scoping Report has been prepared with consideration to the SSD provisions of the EP&A Act, with an Environmental Impact Statement (EIS) proposed to be prepared in accordance with the Act.

5.2.1.2 State Environmental Planning Policy (State and Regional Development) 2011

Clause 20 of Schedule 1 of the SRD SEPP states that the following is considered an 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:
    - has a capital investment value of more than $30 million, or
    - has a capital investment value of more than $10 million and is located in an environmentally sensitive area of State significance.

The proposed Project has a capital investment value of greater than $30 million. Therefore, the Project is declared as SSD under Part 4 of the EP&A Act.

5.2.1.3 State Environmental Planning Policy (Infrastructure) 2007 (ISEPP)

Clause 34 (7) of the State Environmental Planning Policy (Infrastructure) 2007 (ISEPP) states that development for the purpose of a solar energy system may be carried out by any person with consent on any land. A solar energy system includes a PV electricity generating system. The Project, being located on land zoned as RU1 Primary Production, is therefore permissible with consent.

5.2.1.4 State Environmental Planning Policy 33 – Hazardous and Offensive Development (SEPP 33)

SEPP 33 requires the consent authority to consider whether an industrial proposal is a potentially hazardous industry or a potentially offensive industry. A hazard assessment is completed for potentially hazardous development to assist the consent authority to determine acceptability.

A hazard and risk assessment will be completed for the proposed Project as part of the EIS (refer to **Section 7.10**).

5.2.1.5 State Environmental Planning Policy No 55 – Remediation of Land (SEPP 55)

SEPP 55 requires the consent authority to consider whether a site is contaminated and if it must be remediated to be suitable for the proposed development.

A review of the NSW Environment Protection Authority (EPA) Contaminated Land Record and list of NSW contaminated sites notified to the EPA, undertaken on the 19 October 2021, confirmed there are no known contaminated sites in or near the Project Area. Based on the historical agricultural use of the site it is unlikely that significant contamination exists within the Project Area. Potential historic contamination will be further investigated during the EIS phase, including an assessment of contamination risk as a result of the Project. Construction and operation of the Project is unlikely to pose a significant contamination risk. A Construction Environmental Management Plan (CEMP) would address management of contamination if identified during construction.

5.2.1.6 Upper Hunter Region LEP

The Project is located within the Upper Hunter Regional LGA and is zoned as RU1 Primary Production under the Upper Hunter LEP. Development for the purposes of a solar energy system is not listed as permitted with consent under the LEP. However, as noted above, solar energy systems are permissible with consent on any land within NSW under the ISEPP.

The Project Area is considered to be suitable for the Project, noting that agricultural land use will continue to be viable for the site. Approximately 1,000 sheep are proposed to use the Project Area once the Project is constructed. The Project is therefore considered to remain consistent with the objectives of the RU1 Primary Production land use zone.

5.2.2 Other NSW Legislation

Other NSW legislation applicable to the Project is outlined in **Table 5.1**.

Table 5.1 NSW legislation relevant to the Project

Applicable Legislation	Description
Biodiversity Conservation Act 2016 **(BC Act)**	Under the BC Act, biodiversity assessment in accordance with the Biodiversity Assessment Method (BAM) is required for any SSD project. The Project (as a SSD) will trigger the need to prepare a Biodiversity Development Assessment Report (BDAR) in accordance with the BAM. The EIS will include a BDAR.
National Parks and Wildlife Act 1974 **(NPW Act)**	The NPW Act sets out to protect and preserve Aboriginal heritage values. Part 6 of this Act refers to Aboriginal objects and places and prevents persons from impacting on an Aboriginal place or relic, without consent or a permit. An Aboriginal Cultural Heritage Assessment (ACHA) will be undertaken as part of the EIS for the Project and will ensure compliance with the NPW Act.
Heritage Act 1977 **(Heritage Act)**	The Heritage Act aims to conserve heritage values. The Act defines 'environmental heritage' as those places, buildings, works, relics, moveable objects and precincts listed in the Local or State Heritage Significance. A property is a heritage item if it is listed in the heritage schedule of the local Council's LEP or on the State Heritage Register, a register of places and items of particular importance to the people of NSW. Under Section 4.41 of the EP&A Act, an approval under Part 4 or a permit under Section 139 of the Heritage Act would not be required for an SSD.

Applicable Legislation	Description
Protection of the Environment Operations Act 1997 **(POEO Act)**	The POEO Act regulates pollution to the environment and requires licences for environmental protection including waste, air, water and noise pollution control. Solar farms are not a scheduled activity under the POEO Act, thus the Project does not require an Environment Protection Licence (EPL).
Water Management Act 2000 **(WM Act)**	Any water extractions from water sources (surface and groundwater) regulated by a Water Sharing Plan (WSP) required for construction purposes will require licensing under the WM Act. The potential water requirements during construction will be assessed as part of the EIS. Any necessary licences would be obtained for the Project.
Roads Act 1993 **(Roads Act)**	A consent is required under Section 138 of the Roads Act to work on or above a road or to connect a road to a classified road. Consents under Section 138 may be needed for the proposed road upgrades if they are required for classified roads. This will be examined during the preparation of the Traffic and Transport Impact Assessment for the EIS.
Contaminated Land Management Act 1997 **(CLM Act)**	The CLM Act establishes the process for investigating and if required, remediating land that the NSW Environment Protection Authority (EPA) considers to be sufficiently contaminated to require regulation under Part 3, Division 2. The Project Area does not contain land listed on the Contaminated Lands Register. Relevant mitigation and management measures would be incorporated into the EIS to address any potential contamination issues
Crown Land Management Act 2016 (Crown Land Act)	This Act establishes the requirements to manage Crown land within NSW. The Act was introduced to provide a simpler, more streamlined framework for Crown land administration and management. The Crown Land Act includes provisions for Aboriginal management of Crown land and explicitly recognises and supports Aboriginal land rights, native title rights, and their interests and involvement in the management of Crown land.
Local Land Services Act 2013	The *Local Land Services Act 2013* regulates the management of vegetation on rural land. This Act provides publicly funded biosecurity, natural resources management and agricultural advisory services for land owners.

5.2.3 Commonwealth Legislation

5.2.3.1 *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)

The EPBC Act provides a framework for protection of the Australian environment, including its biodiversity and natural and culturally significant places. Any action which could have a significant impact on a Matter of National Environmental Significance (MNES) must be referred to the Minister for the Environment. There are nine MNES:

- World heritage properties
- National heritage places
- Wetlands of international importance (listed under the Ramsar Convention)
- Listed threatened species and ecological communities

- Migratory species
- Commonwealth marine areas
- The Great Barrier Reef Marine Park
- Nuclear actions (including uranium mining)
- A water resources, in relation to coal seam gas development and large coal mining development.

A Protected Matters Search Tool (PMST) report was completed on 21 October 2021 using a 10 km search buffer around the Project Area, identifying the following Matters of National Environmental Significance:

- One Wetland of International Importance: Hunter Estuary, located 150 -200 km upstream of the search area.
- Seven listed threatened ecological communities, including two categorised as likely to occur in the search area.
- Thirty one (31) listed threatened species, including 10 categorised as known to occur in the search area and seven categorised as likely to occur in the search areas.
- Eleven (11) listed migratory species, including two categorised as known to occur in the search area and two categorised as likely to occur in the search area.

The Project Area is not within a world heritage property or a national heritage place; it is not near any wetlands of international importance; is not within either a Commonwealth marine area or the Great Barrier Reef Marine Park; and does not relate to a nuclear action, coal seam gas or coal mining development. These MNES are therefore not considered further in this report.

The results of this data search with regard to listed species and ecological communities that may occur in the Project Area is further discussed in **Section 7.1** below.

A referral has been submitted to the Commonwealth Department of Agriculture, Water and the Environment (DAWE) to have the Project assessed for impacts to MNES. It is anticipated that the Project will be a 'controlled action' based on the potential for significant impacts to threatened species and ecological communities. As such it is anticipated that the Project will be assessed under the Assessment Bilateral Agreement currently in place between the NSW and Commonwealth Governments, which allows DPIE to undertake assessments of MNES on behalf of DAWE for certain developments, including SSD.

5.2.3.2 Aboriginal and Torres Strait Island Heritage Protection Act 1984

The *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* (ATSIHP Act) allows the Commonwealth Minister for the Environment, on the application of an Aboriginal person or group of persons, to make a declaration to protect an area, object or class of objects from a threat of injury or desecration. The ATSIHP Act was passed to enable the Commonwealth an opportunity to intervene and, where necessary, preserve and protect areas and objects of particular significance to Aboriginal or Torres Strait Islander peoples.

There is one known Aboriginal heritage item or place within the Project Area, and it is anticipated that there are more unknown items or places across the site. Further discussion on Aboriginal Heritage at the Project Area is discussed in **Section 7.3.1**.

5.2.3.3 Native Title Act 1993 (NT Act)

The NT Act aims to provide a national system for the recognition and protection of native title and for its co-existence with the national land management system. The purpose of Native Title is to recognise the rights and interests of Aboriginal and Torres Strait Islander people in land and waters according to their traditional laws and customs. Native Title only recognises the right to perform certain activities which come from traditional laws and customs but does not recognise those traditional laws and customs themselves. These activities may include the right to camp, hunt, use water, hold meetings, perform ceremony, and protect cultural sites.

The Project Area is subject to a Native Title Claim (NC2011/006 - Gomeroi People). Further discussion on Aboriginal Heritage at the Project Area is discussed in **Section 7.3.1**.

6.0 Engagement

Umwelt are preparing a social impact assessment (SIA) to support the EIS. The scoping phase (Round 1) of the SIA has been conducted in accordance with the NSW DPIE *Social Impact Assessment Guideline for State Significant Projects* (DPIE, 2021).

Stakeholders identified for the Project include the landholders of the Project Area, residents of nearby communities, employees and suppliers, local business and service providers, local government, State government, Federal government, traditional custodians and Aboriginal stakeholders, community and special interest groups, broader community and local media. These stakeholders have been identified within the Project's Community and Stakeholder Engagement Strategy (refer to **Appendix C**).

The Community and Stakeholder Engagement Strategy has the following objectives:

- To ensure people potentially affected by the proposed Project understand the Project and its potential effects.
- To consider the views of people in a meaningful way, including their values, interests and priorities, and how impacts may be experienced from their perspective.
- To scope social and community interest or issues, by collecting relevant data, evidence and insights to ensure representativeness and diversity of views.
- To ensure people know how their input has been considered, and what strategies will be put into place to address their concerns.
- To listen, understand and respond to matters and concerns raised.

The engagement of stakeholders will be through consultation, engagement, and provision of information. Theses engagement methods aim to facilitate stakeholder involvement in the identification of issues/impacts, areas of interest/concern and strategies to address the issues raised. Also, engagement of stakeholder will aim to improve knowledge and awareness of the Proponent, its activities, the Project, and key issues and impacts as the arise.

Figure 6.1 Stakeholder Groups

6.1 Round 1 (Scoping Phase)

As part of the scoping phase of the Project, community engagement activities have sought to introduce the Project to relevant key stakeholders, share preliminary information, and to scope and understand stakeholder and community views. This round of stakeholder engagement will provide an opportunity for the Proponent to establish working relationships with key community groups and stakeholders.

The Social Impact Scoping Report attached in **Appendix C** includes community views and any concerns raised throughout this engagement, as well as Project constraints and opportunities identified as a result of engagement. Discussion items included in consultation activities appropriate to this phase of the Project included topics relating to:

- Awareness and attitudes towards solar farm development (and other renewables or industry development in the local region.
- Awareness and public perceptions of Lightsource bp.
- Community values, identity, local needs and aspirations.
- Areas of value and use within and near the Project.
- Potential issues, concerns or interests related to the proposed project.

- Potential sensitive receivers and/or vulnerable community groups.
- Preferred engagement mechanisms, frequency and content.

The first round of engagement activities occurred in September - November 2021 to introduce the Project and gather early feedback on the Project. A summary of consultation undertaken to date, including the key issues identified in feedback received, is provided in **Table 6.1**. These key issues raised by stakeholders are discussed in detail in Section 3.0 of the Social Impact Scoping Report (**Appendix C**).

Table 6.1 Stakeholder consultation summary

Stakeholder Group	Mechanism	Key Issues Raised	Timing	No. People in Attendance/ Respondents/ Issued information
Information Provision				
Broader community	Project website launch	N/A	27 August 2021	n/a
Broader community	3 x local media statements	N/A	15 October 2021	n/a
Nearby residents and landholders Broader community	Maildrop of Project Information Sheet to localities of Merriwa, Cassilis, Wollar, Cogan and along Wollara Road.	N/A	15 October 2021	3,226
Broader community	Email correspondence with invitation to Community Information Session	N/A	13 October 2021	11
Nearby residents and landholders	Phone call attempts or correspondence	• Social amenity	October 2021	27
Consultation				
Federal Government – Department of Agriculture, Water and the Environment	Project briefing	• Impacts to the natural environment • Decision-making systems, including timing of Referral submission.	10 September 2021	3

State Government – NSW Department of Planning, Industry and Environment (DPIE)	Project briefing	• Project design
		• Potential Assessment requirements, including:
		  ○ Land capability
		  ○ Access
			21 September 2021	1

		○ Hazard and Risk ○ Cumulative effects • Decision-making systems, including timing of Scoping Report.		
State Government – NSW National Parks and Wildlife Service	Project briefing	• Accessibility, particularly use of local roads. • Impacts on the natural environment, particularly the Goulburn River National Park. • Aboriginal cultural values and attachment to Country	15 September 2021	4
Local Government – Upper Hunter Shire Council	Project briefing	• Strain on local services (e.g. accommodation) • Use of local roads • Sharing of Community Benefits • Decision-making systems, including: ○ Consultation with Councilors ○ Ongoing community consultation ○ Confirmed alignment with Council Sustainability Policy	21 October 2021	8
Nearby residents and proximal landholders	Informal phone discussions and/or feedback survey	• Social amenity • Accessibility, particularly use of local roads • Impacts to the natural environment, particularly risk of bushfire	October – November 2021	5

Broader community	Community information sessions (2)	• Use of local roads • Strain on local services • Opportunities for local employment and procurement • Social amenity • Impacts to the natural environment • Project decommissioning and future land use • Community participation and consultation	28 October 2021 30 October 2021	18
Local Government – Representative from Upper Hunter Shire Council	Personal meeting and site visit	• Use of local roads • Impacts on the natural environment • Opportunities for local employment and procurement	2 November 2021	1

Local Government – Upper Hunter Shire Councillors	Project briefing	• Project design
		• Accessibility, particularly use of local roads
		• Opportunities for local employment and procurement
		• Decision-making systems, including:
		  ○ Consultation with Councilors
		  ○ Ongoing community consultation
			9 November 2021	2

Host landholders	Personal meetings	• Accessibility, particularly use of local roads • Public safety on local roads	2 November 2021	1
Community groups	Personal meeting	• Opportunities for local employment and procurement • Community sense of place • Sharing of community benefits	1 -3 November 2021	8
Industry group	Personal meeting	• Opportunities for local employment and procurement • Sharing of community benefits • Strain on local services (e.g. accommodation)	3 November 2021	1
Traditional Owners	Personal meeting	• Aboriginal cultural values and attachment to Country • Sharing of community benefits	26 November 2021	1

In addition to the above, the following agency feedback was also received following finalisation of the Social Impact Scoping Report:

- Biodiversity Conservation Trust – 6 December 2021
- NSW Department of Planning, Industry and Environment – 14 December 2021.

Key issues raised in these meetings included impacts on the natural environment, particularly regarding offsets, and the need for detailed investigation and justification of Class 2 and 3 Land within the Project Area. These additional meetings will be incorporated into the Social Impact Assessment, to support the EIS.

Further information and analysis of this preliminary consultation is provided in Section 3.0 of the Social Impact Scoping Report in **Appendix C**.

6.2 Round 2 (EIS preparation)

The stakeholder identification process within the scoping phase involved identifying stakeholders with an interest in the Project, or those directly and indirectly affected, including any potentially vulnerable or marginalised groups in the community. The identified stakeholders were grouped according to the level of engagement needed for the Project. Proposed engagement activities to be undertaken during the EIS phase will be focused on exploring and validating the matters identified during the scoping phase.

Engagement in this round will focus on:

- Sharing information and gathering feedback on the proposed design of the Project.
- Assessment of perceived or key social and environmental issues, impacts and opportunities associated with the Project.
- Potential mitigation or enhancement strategies to address and respond to issues, impacts and opportunities.
- Existing capacity of local land service provision and project future demand as relevant to the predicted project impacts.
- Measures to improve collaboration between Lightsource bp and community or stakeholders, including potential community investment and benefit-sharing opportunities.
- Round 2 of the Stakeholder engagements is expected to commence in January 2022.

Following initial consultation carried out during the scoping phase of the Project (see **Appendix C**), we understand the following potential community issues to be of relevance for consideration in planning and developing the Project:

- Impacts to local roads, including road deterioration, effect on school buses, safety on proposed access road and increased traffic noise.
- Impacts to the surrounding Goulburn River National Park.
- Impacts associated with the presence of a construction workforce within the community for an extended period of time, e.g. adequate availability of accommodation services.
- Use of local construction workforce and provision of appropriate working conditions.
- Long term local economic benefits.

Similar engagement mechanisms will be used in Phase 2 as for Phase 1. The implementation of these mechanisms will be subject to NSW COVID-19 restrictions at the time.

6.3 Agency Engagement

The engagement program to inform the scoping phase (Phase 1) for the Project has included initial briefings with relevant government agencies. These briefings included an overview of the Project, discussion of the approvals processes and sought preliminary feedback on issues to be considered in the EIS.

The following agencies have been briefed on the Project:

- Department of Agriculture, Water and the Environment (DAWE) – Meeting held 10 September 2021
- Department of Planning, Industry and Environment (DPIE) – Meeting held 21 September 2021
- National Parks and Wildlife Services (NPWS) – Meeting held 15 September 2021
- Upper Hunter Shire Council – Meetings held 21 October and 9 November 2021
- Biodiversity Conservation Trust – Meeting scheduled for 6 December 2021.

As outlined in **Appendix C**, a number of other organisations have also been contacted as part of the Phase 1 engagement program.

During the preparation of the EIS, the agencies listed above will continue to be consulted on the EIS findings.

7.0 Proposed Assessment of Impacts

A preliminary environmental and social assessment has been undertaken for the Project involving consideration of project-specific and cumulative impacts. The identification of constraints/issues for consideration has been informed by the *State Significant development guidelines – preparing an environmental impact statement 2021* (DPIE, 2021), *Large-scale Solar Energy Guideline* (DPIE, 2018) and standard *Secretary's Environmental Assessment Requirements* (*SEAR)s* (DPIE, 2015).

Potential Project issues have been separated into 'key issues' and 'other issues' as part of the preliminary environmental and social assessment. Key issues are those where there may be some material impact based on the information that is currently available. Other issues are those that are unlikely to have a material impact based on the information at hand. This may change as the EIS is developed and specialist investigations are completed, including community and stakeholder engagement.

There are several assessment matters recommended in the SSD guidelines that are not relevant to the specifics of the Project. **Table 7.1** provides a justification of each matter not relevant to the Project.

Table 7.1 Categories of assessment matters not relevant to the project

Specific matters	Justification
Port and airport facilities	The Project will use standard port facilitates in Newcastle to deliver the solar farm materials to the Project Area.
Gases	There are no associated gases with the construction or operation or the solar farm.
Odour	There are no significant odours associated with a solar farm or battery development.
Aquatic flora and fauna	The water resources within the Project Area provide limited aquatic floor and fauna, this will be assessed through the detailed EIS phase.
Biosecurity	There is no associated biosecurity risk to the Project.

Table 7.2 provides a summary of the key issues and other issues, potential impacts, preliminary proposed mitigation controls, and proposed assessment approach. The following subsections provide further detail on the preliminary analysis undertaken and scope of the assessments proposed to be prepared for the EIS.

Table 7.2 Preliminary Environmental Assessment

Issue	Potential project impacts	Preliminary mitigation measures	Issue Level	Assessment Approach	Relevant policy
Biodiversity	• Loss or modification of terrestrial habitats due to vegetation clearing • Impact to threatened species or endangered ecology communities • Spread weeds across the Project Area due to construction activities and operation management • Potential loss of fauna corridors • Impacts to surrounding Goulburn River National Park • Cumulative biodiversity impacts	• Detailed site-specific assessment as part of the EIS • Project strategically designed to avoid and/or minimise impacts where practicable • Implementation of mitigation measures • Implementation of construction and operational management plans • Offsetting of residual methods in accordance with the Biodiversity Offsets Scheme	Key issue	Specific assessment for EIS process	*Environmental Protection and Biodiversity Conservation Act* *The Biodiversity Conservation Act 2016* *National Parks and Wildlife Act 1974*
Land	• Change in land use • Cumulative impacts with other nearby developments	• Detailed site-specific assessment as part of the EIS • Implementation of construction and operation environmental management plans • Detailed project design	Other issue	EIS Chapter	Contamination Land Management Act 1997 Crown Land Management Act 2016
Water	• Potential soil erosion associated with land clearing during construction and run off from solar modules during operation • Water supply for construction and operational purposes • Increase in impervious surfaces due to new substation and solar panels, resulting in potential run off issues.	• Detailed site-specific assessment as part of the EIS • Implementation of construction and operation environmental management plans • Detailed project design • Stormwater management and design. • Sediment and erosion controls	Key issues	Specialist assessment for EIS	*Water Management Act 2000* *Water Act 2007*

Issue	Potential project impacts	Preliminary mitigation measures	Issue Level	Assessment Approach	Relevant policy
Social	• Community consultation • Property values to community and region • Impacts to local economy, particularly employment and accommodation availability, throughout construction. • Land use changes	• Community and Stakeholder Engagement Plan • Community and stakeholder engagement as part of the EIS • Employment and Accommodation strategy	Key issue	Specialist assessment for EIS	Hunter Regional Plan 2036 Upper Hunter Council Community Strategic Plan 2027 Upper Hunter Shire Council Local Strategic Planning Statement 2020 Upper Hunter Economic Diversification Action Plan: Implementing Priorities 2018 Social Impact Assessment Guidelines for State Significant Projects (Department of Planning Industry and Environment, 2021)
Heritage	• Potential impacts to Aboriginal and/or historic heritage objects or heritage values in the Project Area.	• Detailed site-specific assessment as part of the EIS, including consultation with relevant Aboriginal stakeholders • Project strategically designed to avoid impacts (if require) • Implementation of mitigation and management requirements	Key issue	Specialist assessment for EIS	*Heritage Act 1977* *National Parks and Wildlife Act 1974*

Issue	Potential project impacts	Preliminary mitigation measures	Issue Level	Assessment Approach	Relevant policy
Amenity	• Impact to current scenic landscape/character of the locality • Potential night lighting • Impact to surrounding Goulburn River National Park through increased activity in the Project Area • Cumulative visual impacts • Noise and vibration disturbance associated with increased road traffic ad works during the construction phase • Noise and vibration associated with construction methodologies e.g. pile driving • Cumulative noise and vibration impacts	• Implementation of a construction noise and vibration management plan • Maintaining trees around property boundary to act as a screen • Limiting night lighting where possible	Other issue	Specialist assessment for EIS	Construction Noise Strategy(Transport NSW, 2012) NSW Industrial Noise Policy (Environment Protection Authority, 2000)
Economic	• Land use changes • Property valuation • Economic impacts locally and regionally (positive and negative) • Presence of construction workforce on site and in surrounding area	• Employment and Accommodation strategy	Other issue	Specialist assessment for EIS	
Hazards and risks	• Risk to human health and infrastructure from bushfires, spontaneous ignition, electromagnetic fields • Generation of waste associated with construction and operation • BESS	• Detailed site-specific assessment as part of the EIS, including a Hazard Assessment • Bushfire management strategy • Waste management plan • SEPP 33 considerations	Other issue	Specialist assessment for EIS	State Environmental Planning Policy No 33 – Hazardous and Offensive Development (NSW)

Issue	Potential project impacts	Preliminary mitigation measures	Issue Level	Assessment Approach	Relevant policy
Access	• Increased traffic during the construction phase • Disruption to traffic due to heavy vehicle delivery of Project materials to site • Disruption to traffic and increased noise due to road upgrade works • Cumulative traffic and transport impacts	• Construction Environmental Management Plan, including a Traffic management sub-plan • Operational Management plan, including hours of operation, parking and deliveries.	Key issue	Specialist assessment for EIS	*Roads Act 1993* *Crown Land Management Act 2016*
Air	• Elevated dust levels associated with construction works and transport movements • Atmospheric emissions associated with increased vehicles to the property and vehicles needed during the construction phase	• Construction Environmental Management Plan, including a Traffic management sub-plan	Other issue	EIS Chapter	*Protection of the Environment Operations Act 1997* NSW's Sustainable Design Guidelines (Version 3.0) (Transport for NSW, 2013) Greenhouse Gas Inventory Guide for Construction Projects (Transport for NSW, 2012) The Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (EPA 2016)

Issue	Potential project impacts	Preliminary mitigation measures	Issue Level	Assessment Approach	Relevant policy
Built Environment	• Increased traffic on local roads during the construction phase • Disruption to traffic due to heavy vehicle delivery of Project materials to site • Damage to roads caused by additional truck movements and turning paths • Disruption to traffic due to road upgrade works • Cumulative traffic and transport impacts	• Detailed site-specific assessment as part of the EIS, including Traffic and Transport Impact Assessment • Minor road upgrades to enable safe vehicle access, to be assessed as part of the EIS • Road dilapidation surveys prior to and following completion of construction	Other issue	EIS Chapter	*Roads Act 1993*

7.1 Biodiversity

Database searches were undertaken to identify both NSW and Commonwealth listed species and ecological communities in the Project Area (see **Appendix B** and **Appendix D**).

Preliminary ecological investigations have confirmed the presence of one listed threatened ecological community, the *White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grasslands* critically endangered ecological community. Other threatened ecological communities are not likely to be present within the Project Area, but any potentially conforming vegetation would be considered against diagnostic criteria and condition thresholds where applicable as part of the detailed biodiversity assessment.

There are BioNet records of eight Commonwealth listed threatened fauna species in the 10 km search area around the Project Area:

- Brush-tailed rock-wallaby (*Petrogale penicillata*), vulnerable.
- Corben's long-eared bat (*Nyctophilus corbeni*), vulnerable.
- Koala (Phascolarctos cinereus), vulnerable: historical records in the Project Area.
- Large-eared pied bat (*Chalinolobus dwyeri*), vulnerable: confirmed records in the Project Area.
- Malleefowl (*Leipoa ocellata*), vulnerable: historical records only, not recorded in the Project Area.
- Painted honeyeater (*Grantiella picta*), vulnerable.
- Regent honeyeater (*Anthochaera phrygia*), critically endangered: breeding habitat known nearby; mapped important habitat on site.
- White-throated needletail (*Hirundapus caudacutus*), vulnerable.

There are BioNet records of four Commonwealth listed threatened flora species in the 10 km search area around the Project Area:

- Bluegrass (*Dicanthium setosum*), vulnerable.
- *Tylophora linearis*, endangered.
- *Homoranthus darwinoides*, vulnerable: recorded in sandstone habitats adjacent to the Project Area.
- *Ozothamnus tesselatu*s, vulnerable.

Targeted surveys for Commonwealth listed threatened flora and fauna will be completed in accordance with the NSW Biodiversity Assessment Method (BAM) which has been endorsed under the Commonwealth – NSW Approvals Bilateral Agreement.

Ecological investigations are ongoing for the Project. In accordance with the *Biodiversity Conservation Act 2016* (BC Act), SSD applications are required to be accompanied by a biodiversity development assessment report (BDAR), to be prepared by a person accredited to apply the BAM. The Proponent commits to preparing this documentation in accordance with the requirements of the BC Act.

7.1.1 Threatened ecological communities

7.1.1.1 BC Act listed threatened ecological communities

Analysis of vegetation communities against the diagnostic criteria for NSW BC Act listed threatened ecological communities, has determined that one critically endangered ecological community, *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* is present in the Project Area and in the indicative development footprint. No other BC Act listed threatened ecological communities were recorded, and additional communities are unlikely to be present.

Mapping of vegetation zones meeting diagnostic criteria for the BC Act listed 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 critically endangered ecological community has not been finalised. Preliminary mapping of areas with a high and moderate likelihood of conforming to this ecological community are shown in **Figure 7.2**.

7.1.1.2 EPBC Act listed threatened ecological communities

Analysis of vegetation communities against the diagnostic criteria for Commonwealth EPBC Act listed threatened ecological communities, has determined that one critically endangered ecological community, *White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland* is present in the Project Area and in the indicative development footprint. No other EPBC Act listed threatened ecological communities were recorded, and additional communities are unlikely to be present. While large areas of derived grassland require further analysis to determine whether they meet condition thresholds, substantial impacts on this critically endangered ecological community are anticipated. Due to the extent of impacts on this community, it is anticipated that the development would constitute a significant impact under the Commonwealth EPBC Act and a referral has been prepared and submitted to DAWE to with this information.

Mapping of vegetation zones meeting diagnostic criteria and condition thresholds for the EPBC Act listed *White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland* critically endangered ecological community has not been finalised. Assessment against condition thresholds will be partly based on detailed vegetation integrity assessment. Preliminary mapping of areas with a high and moderate likelihood of conforming to this ecological community are shown in **Figure 7.3**.

Table 7.3 Plant Community Types (PCT's) and their extent in the Project Area

PCT	Plant community name	Associated BC Act TEC	Associated EPBC Act TEC	Area in Project Area (excluding exotic vegetation)	Area in Indicative Impact Footprint (ha)	Likely need for mapping refinement in the footprint in the future
483	Grey Box x White Box grassy open woodland on basalt hills in the Merriwa region, upper Hunter Valley	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	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland	1055.4	799.7	High: Plot based assessment to confirm EPBC TEC extent. Some further consideration of former extent required with relation to TEC classifications of derived native grasslands.
616	Grey Myrtle – Rusty Fig dry rainforest in sandstone gorges of the upper hunter valley, mainly Sydney Basin Bioregion	-	-	7.5	0.0	Low
1604	Narrow-leafed Ironbark – Grey Box – Spotted Gum shrub – grass woodland of the central and lower Hunter	Central Hunter Ironbark—Spotted Gum—Grey Box Forest in the New South Wales North Coast and Sydney Basin Bioregions	-	43.9	1.2	Moderate: Some further consideration of former extent required with relation to TEC classifications of derived native grasslands adjacent to PCT483.

PCT	Plant community name	Associated BC Act TEC	Associated EPBC Act TEC	Area in Project Area (excluding exotic vegetation)	Area in Indicative Impact Footprint (ha)	Likely need for mapping refinement in the footprint in the future
1607	Blakely's Red Gum – Narrow-leaved Ironbark – Rough-barked Apple shrubby woodland of the upper Hunter	-	-	7.8	2.1	Low
1655	Grey Box - Slaty Box shrub - grass woodland on sandstone slopes on the upper Hunter and Sydney Basin	Hunter Valley Footslopes Slaty Gum Woodland in the Sydney Basin Bioregion	-	3.0	0.9	Low
1656	Narrow-leaved Iron bark-Black Pine-Narrow leaved Wattle shrub-grass open forest on sandstone slopes of the hunter and Sydney Basin	-	-	13.8	0.0	Low
1661	Narrow-leaved Ironbark - Black Pine - Sifton Bush heathy open forest on sandstone ranges of the upper Hunter and Sydney Basin	-	-	286.0	104.4	Moderate: Some further consideration of former extent required with relation to TEC classifications of derived native grasslands adjacent to PCT483.
1672	Red Ironbark - Grey Gum - Black Pine heathy woodland on sandstone ranges of the Sydney Basin	-	-	104.6	0.0	Low

PCT	Plant community name	Associated BC Act TEC	Associated EPBC Act TEC	Area in Project Area (excluding exotic vegetation)	Area in Indicative Impact Footprint (ha)	Likely need for mapping refinement in the footprint in the future
1674	Red Ironbark - Brown Bloodwood - Black Pine heathy open forest on sandstone ranges of the Sydney Basin	-	-	203.9	13.8	Low
-	Exotic vegetation and infrastructure	-	-	337.5	327.3	Low

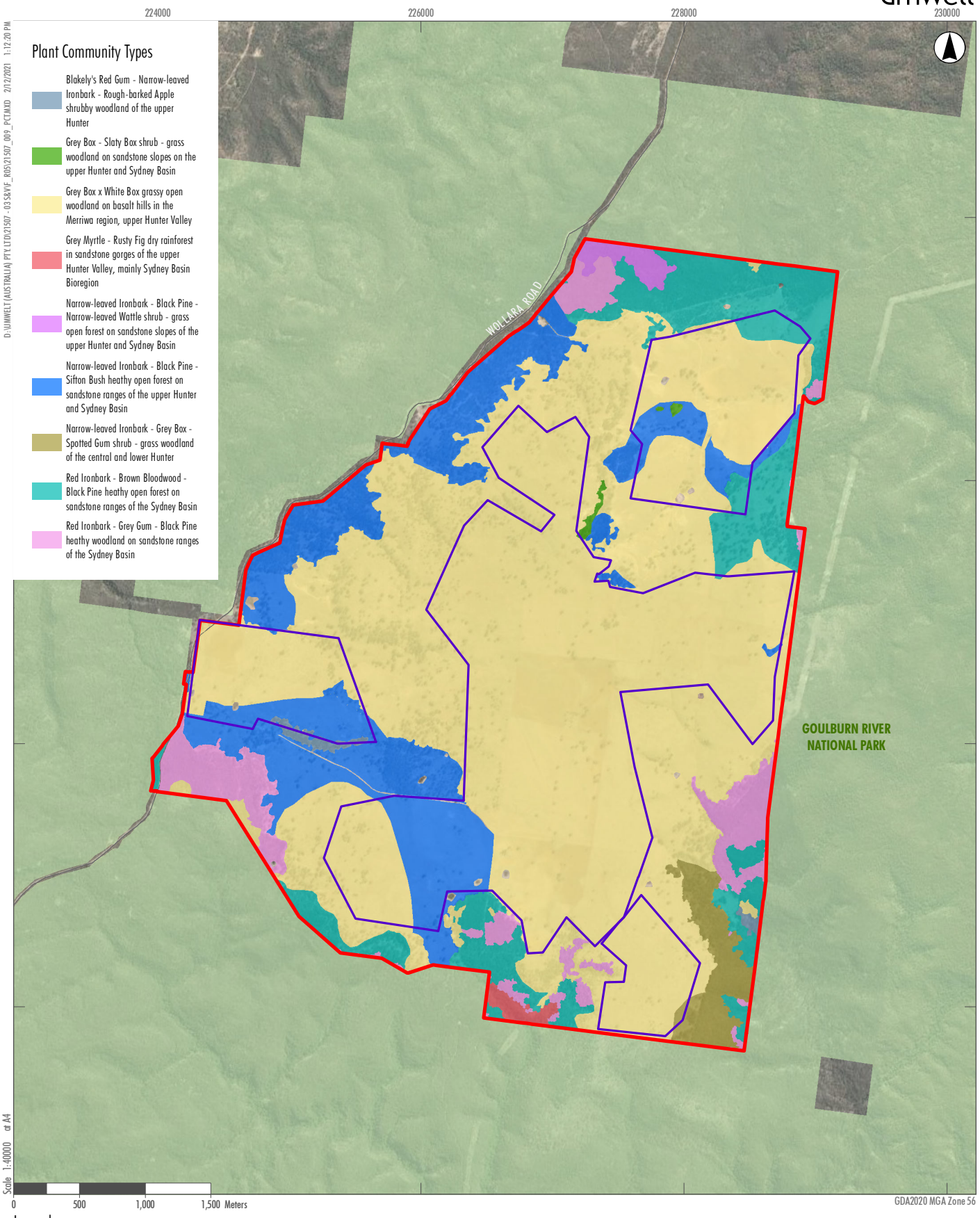
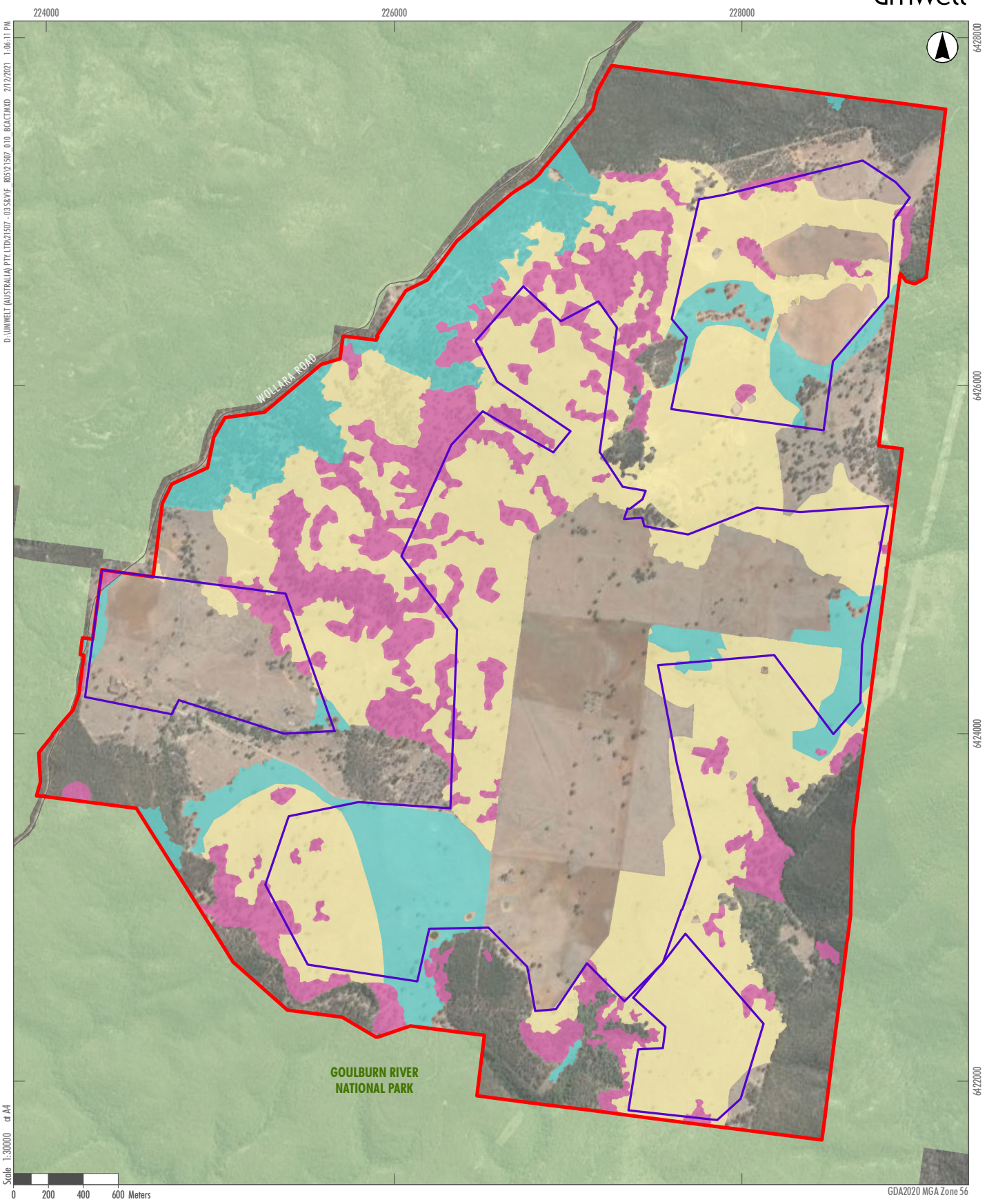


FIGURE 7.1

Preliminary PCT Mapping in the Project Area

Image Source: ESRI Basemap (2021) Data source: NSW DFSI (2021)



Legend

- Project Boundary
- Preliminary Development Boundary
- NSW National Parks

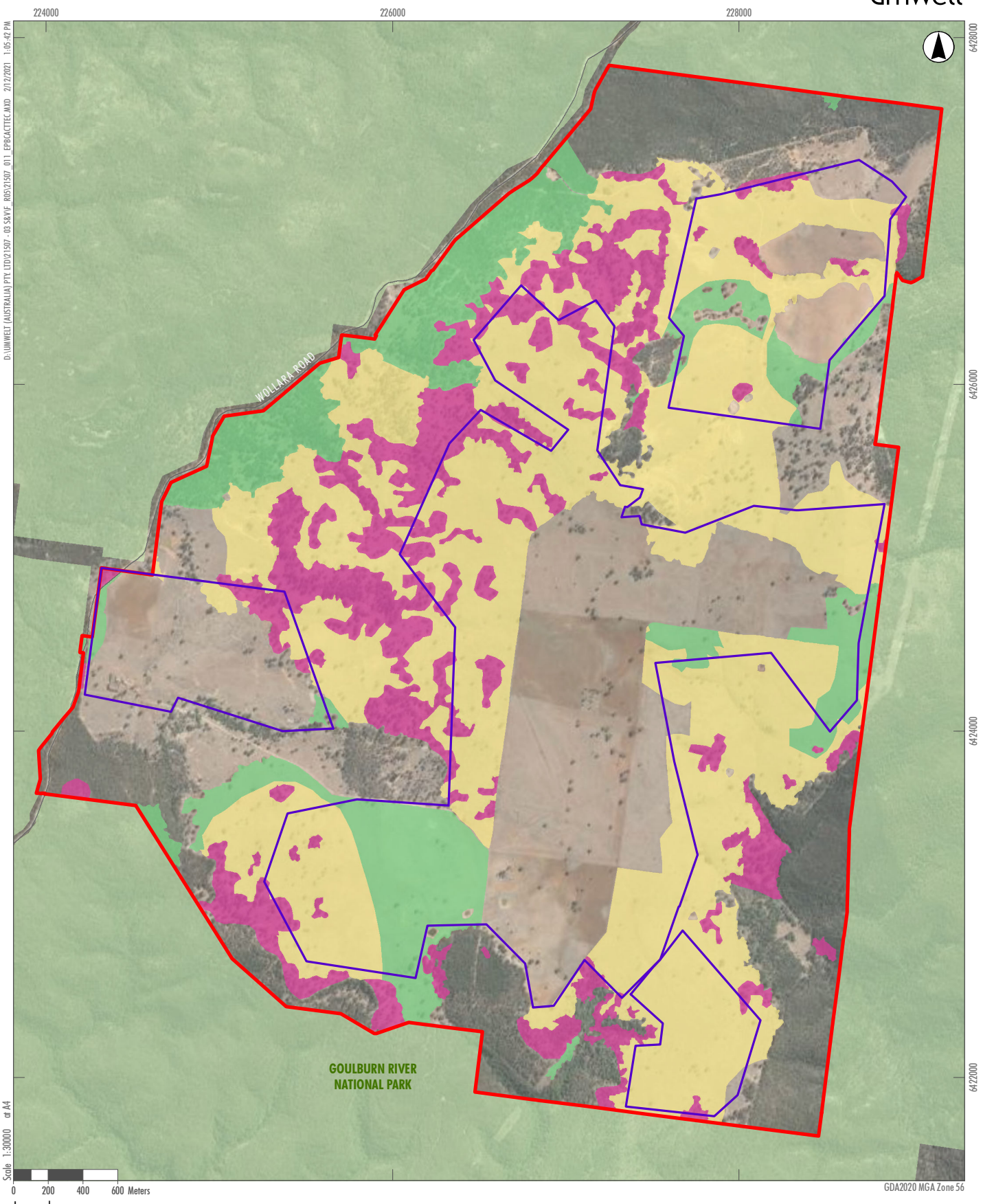
White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland Likelihood

- High
- Moderate
- Low - Moderate

FIGURE 7.2

Preliminary Mapping of BC Act listed Threatened Ecological Communities

Image Source: ESRI Basemap (2021) Data source: NSW DFSI (2021)



Legend

- Project Boundary
- Preliminary Development Boundary
- NSW National Parks

White Box - Yellow Box - Blakely's Red Gum Grassy Woodlands and Derived Native Grassland Likeihood

- High
- Moderate
- Low - Moderate

FIGURE 7.3

Preliminary Mapping of EPBC Act listed Threatened Ecological Communities

Image Source: ESRI Basemap (2021) Data source: NSW DFSI (2021)

Table 7.4 Potential EPBC Act listed ecological communities in the Project Area

Threatened ecological community	EPBC Act status	Potential to occur in the indicative impact footprint
Central Hunter Valley eucalypt forest and woodland	Critically Endangered	Not recorded. Permian valley floor geologies absent.
Coolibah – Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions	Endangered	Not recorded. No potentially conforming vegetation communities are present.
Grey Box (*Eucalyptus microcarpa*) Grassy Woodlands and Derived Native Grasslands of the South-eastern Australia	Endangered	Not recorded *E. microcarpa* was not detected in the Project Area, with grey box communities present being dominated by *E. moluccana* or *E. moluccana x E. albens*. Site is outside diagnostic range, and grey box communities are aligned with communities not associated with this PCT.
Natural grasslands on basalt and fine-textured alluvial plains of northern New South Wales and southern Queensland	Critically Endangered	Not recorded. Isolated paddock trees and evidence of past clearing provide evidence that the Project Area supported woodland and forest communities prior to clearing.
River-flat eucalyptus forest on coastal floodplains of southern New South Wales and eastern Victoria Weeping Myall Woodlands	Critically Endangered	Not recorded. No potentially conforming vegetation communities are present.
White Box- Yellow Box- Blakley's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Confirmed present. 56 hectares of PCT 483 in good condition with a high likelihood of conforming to condition thresholds 399 hectares of PCT 483 in degraded or derived native grassland with moderate likelihood of conforming to condition thresholds. 73 hectares of PCT1661 derived native grassland requiring additional assessment to confirm likely former extent of PCT 483 relative to PCT1661.

7.1.2 Threatened flora and fauna

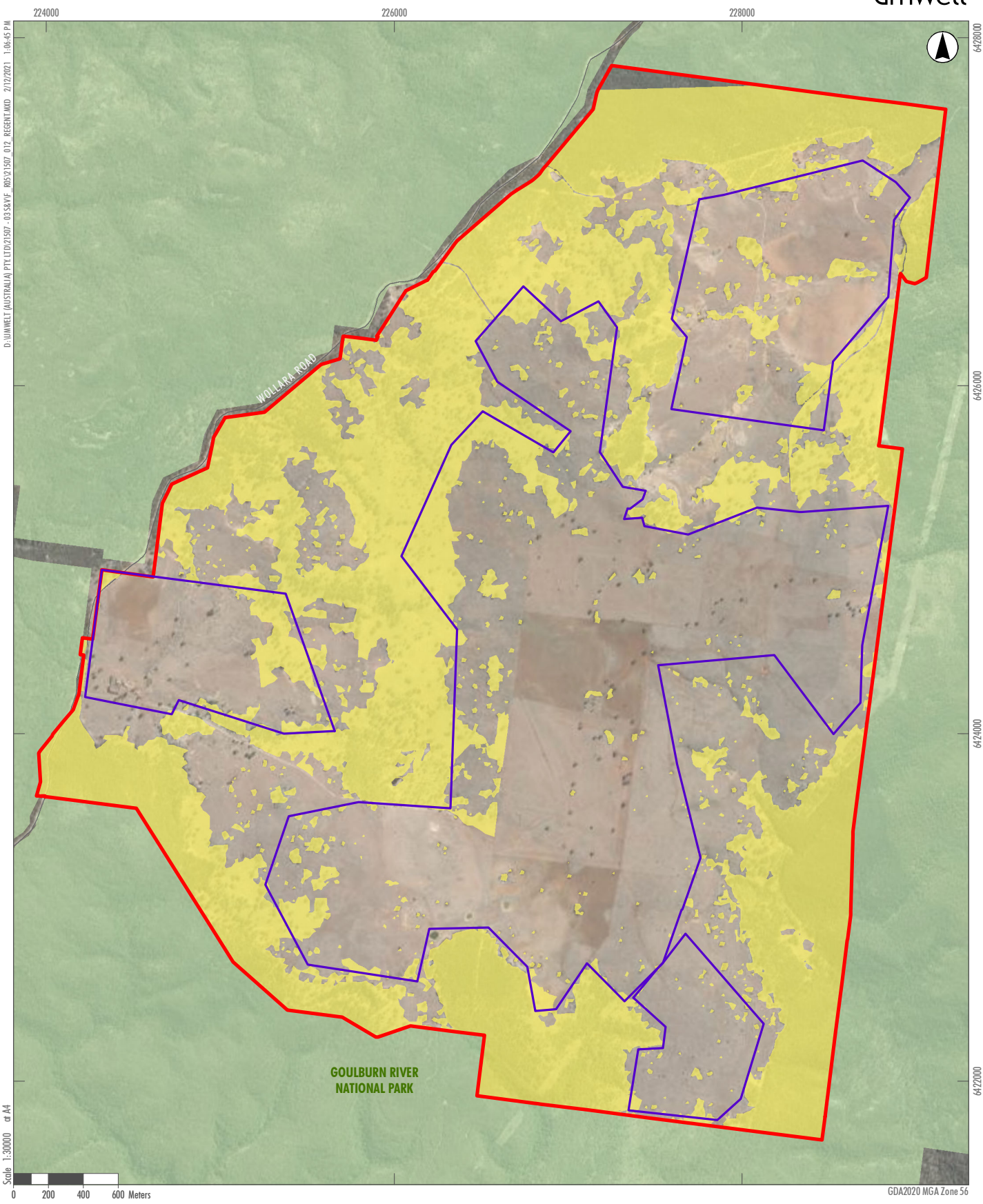
Results of BioNet database searches (provided in **Appendix B**) identify records of nine threatened bird species and three threatened mammal species occurring on or within one kilometre of the Project Area. Records of one threatened flora species occurs within one kilometre of the Project Area. Records of 23 threatened bird species and nine threatened mammal species occur within the 10 x 10 km search area. Records of eight threatened flora species occur within the search area.

Threatened species survey and assessments would be undertaken in accordance with the BAM. All ecosystem credit species will be assumed present based on PCT associations unless key habitat constraints are absent.

Species credit species or dual credit species would be addressed in accordance with the BAM and assessed on the basis of habitat constraints listed in the Threatened Biodiversity Data Collection (TBDC), targeted survey within the relevant survey windows and expert report if required. The following species credit species or dual credit have previously been recorded in the Project Area:

- Glossy black-cockatoo (*Calyptorhynchus lathami*), listed as vulnerable under both the EPBC Act and the BC Act; foraging habitat is present on site, however, breeding activity was not detected in targeted surveys completed during the breeding season in accordance with the BAM.
- Regent Honeyeater (*Anthochaera phrygia*), listed as critically endangered under the EPBC Act and the BC Act; while all records are prior to 2000, the Goulburn River valley to the west is a known breeding area and for the purposes of the BAM important habitat is mapped in the Project Area (see **Figure 7.4**)
- Preliminary design has sought to avoid impacts on mapped important regent honeyeater habitat. A total of 108.9 ha of mapped important habitat for regent honeyeater is present in the indicative impact footprint.
- Barking owl (*Ninox connivens*), listed as vulnerable under the BC Act but not listed under the EPBC Act, was detected during targeted forest owl surveys completed during the breeding season, additional breeding habitat assessments are required in accordance with the BAM.
- Large-eared pied bat (*Chalinolobus dwyeri*), listed as vulnerable under both the EPBC Act and the BC Act; roosting and breeding habitat is likely to be present in adjacent areas of Goulburn River National Park and may be present in the Project Area outside the indicative impact footprint.
- Koala (*Phascolarctos cinereus*), listed as vulnerable under both the EPBC Act and the BC Act; this is a historical record from 1957, and the Project Area does not appear to be within the core habitat of the koala population known to occur on the Goulburn River to the south-west.

A list of candidate species credit species and dual credit species requiring assessment in accordance with the BAM will be developed for the indicative development footprint by applying the BAM Calculator to the verified plant community types occurring. All surveys and assessments for candidate species credit species and dual credit species would be completed and reported in accordance with the BAM.



Legend

- Project Boundary
- Preliminary Development Boundary
- Regent Honeyeater Important Habitat
- NSW National Parks

FIGURE 7.4

Extent of Mapped Important Habitat for Regent Honeyeater in the Project Area

Image Source: ESRI Basemap (2021) Data source: NSW DFSI (2021); NSW DPIE (2021)

7.2 Vegetation

Preliminary PCT mapping for the Project Area is shown in **Figure 7.1**. **Table 7.3** above shows the extent of PCTs present in the Project Area and the indicative impact footprint. Nine PCTs occur in the Project Area, of which six occur in the indicative impact footprint. The Project Area supports 1,725.9 ha of native vegetation and 337.5 ha of exotic vegetation and infrastructure. The indicative impact footprint supports 922.1 ha of native vegetation and 327.3 ha of exotic vegetation and infrastructure. Early design has been informed by preliminary vegetation mapping to prioritise impacts within areas of exotic vegetation. Further refinement of vegetation mapping will be required, particularly within areas of derived native grassland, and would be undertaken in conjunction with detailed floristic integrity assessment to be completed in accordance with the BAM.

7.2.1 Proposed approach

The Biodiversity Offsets Scheme is triggered for an SSD, and a Biodiversity Development Assessment Report (BDAR) would be prepared in accordance with the BAM as outlined above. The BDAR will document the existing environment, including native vegetation extent and condition, the results of targeted threatened species surveys, impacts on native plant community types and species credit species, and determine the biodiversity offset requirements.

Ecological constraints will be incorporated into detailed design as information from the biodiversity surveys becomes available. Preliminary ecological constraints, including the distribution of areas potentially conforming to Commonwealth and NSW listed threatened ecological communities, and areas of '*important habitat'* for threatened species as defined in the BAM, have been used to inform early development of the proposed layout.

7.2.2 Site context

The Project Area is located on an elevated tertiary basalt cap surrounded by Narrabeen Sandstones landscape. While the majority of the site is located on the basalt cap, and is distinct from the surrounding sandstone landscape, the outer edges of the Project Area support sandstone specialist species, this is largely restricted to the edges of the site, and primarily located outside the indicative impact footprint.

The Project Area consists of agricultural land, the majority of which has been subjected to land clearing, a long history of grazing, and cropping and pasture improvement. The whole of the landscape would have supported open woodlands and forests. Historical aerial imagery clearly shows a long history of cultivation in large areas of the site, which is evident in the current status.

As a result of its agricultural history, the Project Area supports a mosaic of exotic vegetation where cropping and pasture improvement has taken place, derived native grasslands in a range of conditions subject to various degrees of disturbance in various timeframes, isolated paddock trees, areas of thinned woodland and forest, along with areas of intact woodland and forest around the periphery of the Project Area.

7.2.3 Conservation Areas

As previously discussed, the Project Area is surrounded on all sides by the Goulburn River National Park. The National Park contains high conservation values as it is unique in its topography and geology, which support a diverse number of plant communities and animal species (NPWS, 2003). In particular, the National Park supports extensive geological and geomorphological diversity in an east-west direction, and along with a significant transition in rainfall, this creates a diverse botanical transition zone.

Basalt caps within the National Park are known to support substantially different vegetation types than surrounding landscapes.

The sections of Goulburn River National Park adjacent to the Project Area support Narrabeen Sandstones, and consequently provide habitat for a range of species typically associated with these communities. For example, sandstone escarpments within the National Park and adjacent to the Project Area have the potential to provide roosting and breeding habitat for threatened microbats and other threatened species.

During detailed design, consideration will be given to relevant guidelines, including the *Developments adjacent to National Parks and Wildlife Service Lands, Guidelines for consent and planning authorities* (DPIE, 2020).

7.2.4 Category 1 Land

Category 1 land is excluded from the Biodiversity Offsets Scheme and does not require detailed assessment in accordance with the BAM. In the absence of NSW Government mapping of Category 1 land, a preliminary review of Category 1 land has been completed in accordance with the *Native vegetation regulatory map: method statement* (OEH 2017), using the following datasets and information sources:

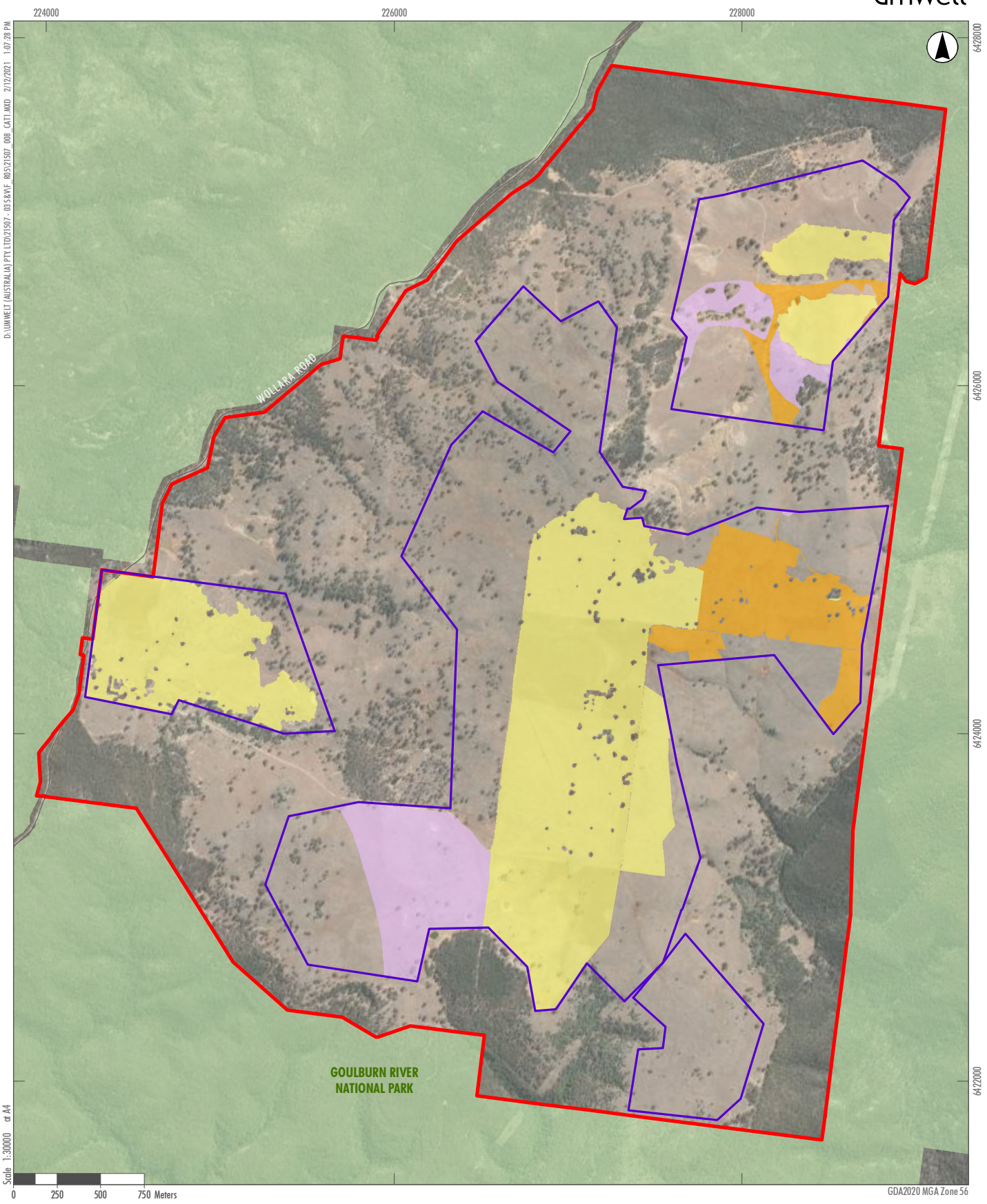
- NSW Native Vegetation Extent 5m Raster v1.2
- NSW Landuse 2017 v1.2
- NSW Historical Imagery Viewer
- Field verified vegetation type mapping, including grassland condition assessment and TEC extent.

Category 1 land is present in the Project Area (refer to **Figure 7.5**). Approximately 356 ha of cleared agricultural land, verified as Category 1 Land based on at least two sources of evidence, including Native Vegetation Extent 2017, ALUMS Classifications, and evidence of clearing or pasture improvement from aerial imagery or field verifications is present. Areas of Category 1 Land include areas of exotic cropping and pasture, and areas of native pasture with evidence of clearing and pasture improvement that does not conform with a critically endangered ecological community. An additional 103 hectares of cleared agricultural land, which meets criteria for Category 1 Land on the basis of desktop analysis but requires further vegetation assessment to confirm absence of a critically endangered ecological community, has the potential to be Category 1 Land. Further detail also remains to be completed to ensure all isolated paddock trees are excluded from Category 1 Land.

It is noted that mapping of Category 1 Land has not yet been complete. Once the extent of Category 1 land is confirmed (early February 2022), the Proponent will confirm this approach with DPIE's Biodiversity Division prior to preparation of the BDAR. A detailed analysis of the process and classification of land as Category 1 Land would be included in the BDAR, and consultation with DPIE would also be completed to confirm the assessment approach.

On 6 December 2021, the Proponent met with the NSW Biodiversity Conservation Trust (BCT) to introduce the Project and commence ongoing consultation. No concerns for the Project have been raised at this stage.

The Proponent commits to ongoing engagement with DPIE's Biodiversity Division and the BCT to ensure appropriate ecological outcomes are achieved for the Project.



Legend

- Project Boundary
- Preliminary Development Boundary
- NSW National Parks
- Category 1
- Category 2
- To be confirmed

FIGURE 7.5

Indicative Extent of Category 1 Land

Image Source: ESRI Basemap (2021) Data source: NSW DFSI (2021)

7.3 Heritage

7.3.1 Aboriginal Heritage

The Project Area falls within the Wanaruah Local Aboriginal Land Council (LALC) area and is within the bounds of a Native Title Claim (NC2011/006 - Gomeroi People). A desktop review of several databases was undertaken to identify any previously recorded Aboriginal heritage objects, sites or places in the Project Area. The results are summarised in **Table 7.5**. There is one known Aboriginal archaeological site within the Project Area. This site is a stone artefact scatter. Based on the location of the site, it is likely that it was identified during the construction of the transmission line running through the southeast corner of the Project Area.

An additional stone artefact scatter is recorded approximately 320 metres south of the Project Area. The remaining sites include artefact scatters, shelter with deposits and shelter with art and are located over 1.5 km from the Project Area.

Table 7.5 Aboriginal Heritage Database Search Results

Database	Search date	Results
NSW Aboriginal Heritage Information Management System (AHIMS)	September 2021	One Aboriginal site is located within the Project Area, identified as an open campsite (AHIMS Site #37-01-0053) (refer to **Appendix F**). Five additional Aboriginal sites have been recorded within a 10 km buffer of the Project Area, including one directly adjacent to the southern boundary of the Project Area. The sites include two shelters with deposits, two open camp sites and a shelter with art.
National Native Title Tribunal (spatial data)	September 2021	One Native Title Claim has been registered in the Project Area: Gomeroi People (NC2011/006) was entered on the Register of Native Title Claims on 20 January 2012. This is a registered Native Title claim. No determined claims or Indigenous Land Use Agreements are in place for the Project Area.
Heritage Lists: • **World Heritage List** • **National Heritage List** • **Commonwealth Heritage List** • **NSW State Heritage Inventory** • **Upper Hunter Shire LEP**	September 2021	No World Heritage Properties, National Heritage Places or Commonwealth Heritage Places were identified in or within 10km of the Project Area. No Aboriginal Places listed under the NPW Act, or the Heritage Act were identified in the Project Area. No heritage items listed under Schedule 5 of the Upper Hunter Shire LEP were identified in the Project Area.

The Project Area is also associated with a key event in the Aboriginal and non-Aboriginal history of the local area. The property is owned by a family who have held part of this landholding for nearly 140 years, dating back to at least 1882, as evidenced in Parish Maps. This original parcel of land, and the remains of the original house, are located within the Project Area. Anecdotal evidence from the landowner indicated that the Project Area, specifically the original house was associated with the story of Jimmy Governor, an Aboriginal man who committed a number of murders in the district and who's story formed the basis for the modern Australian film 'The Chant of Jimmy Blacksmith'.

Preliminary research indicates that the original house is the location of two murders on the property in 1900. This event, known as the 'Merriwa Murders' in newspapers at the time, is one of several in the wider Hunter region attributed to Aboriginal man Jimmy Governor and his brother during 1900. These events occurred at a pivotal time in Australia's history, with federation of the nation and the interactions of Aboriginal people and the European settlers at the forefront of colonial politics. The narrative of Jimmy Governor as one of the last of the 'outlaws' in the State remains a marker in living memory of the interactions between Aboriginal and non-Aboriginal people within regional NSW at the federation of the nation.

The connections of the Project Area to Jimmy Governor and the death of two members of the original family on the property may hold significant connections to the community in the area and will be investigated further to understand the extent of any social and cultural values of the site to the community, including the Aboriginal community and the landholder.

An Aboriginal Cultural Heritage Assessment (ACHA) will be undertaken as part of the EIS in accordance with the *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW* (OEH, 2011) and the *Code of Practice for Archaeological Investigations of Aboriginal Objects in New South Wales* (DECCW, 2010). The ACHA will include consultation with Aboriginal parties in determining and assessing impacts and developing mitigation measures for the Project, having regard to the *Aboriginal cultural heritage consultation requirements for proponents 2010* (DECCW, 2010). The recorded AHIMS site (#37-1-0053) within the Project Area will be inspected and ground-truthed during field surveys.

7.3.2 Historic Heritage

Desktop review of several databases was undertaken to identify any potential historic heritage values in the Project Area. There are no listed historical heritage items were identified within or in proximity to the Project Area. This includes items on the World, National and Commonwealth Heritage Lists, in addition to items listed on the State Heritage Inventory and Upper Hunter Shire LEP.

The closest State Heritage Register item is located 25km northeast of the Project Area-'Cottage Museum' in Merriwa (SHR item #00259).

There are several local heritage items located in the region surrounding the Project Area. The nearest local heritage item to the Project Area is the 'Goulburn River National Park, listed as a landscape item I994 on the Mid-North Regional Local Environmental Plan (LEP). This is located 260m to the east of the Project Area. Other local heritage items are generally located greater than 9 km from the Project Area. The closest heritage item listed on an LEP is 'Redwell Cemetery', listed as item I131 on the Upper Hunter LEP. This is located approximately 11 km north of the Project. The Redwell cemetery is listed as an Anglican cemetery. There is limited information about the history of the listed site. None of the local heritage items in the region surrounding the Project Area will be impacted by the Project.

An assessment of potential impacts on the historic heritage will be undertaken as part of the EIS. The assessment will be prepared with regard to the *NSW Heritage Manual* (NSW Heritage Office , 1996), relevant Heritage Council of NSW guidelines and with consideration of the principles contained in the *Australia ICOMOS Charter for Places of Cultural Significance* (Australia ICOMOS Incorporated , 2013).

7.3.3 Natural Heritage

As mentioned above, the Project Area is surrounded by the Goulburn River National Park. The National Park covers over 70,000 ha and was established in 1983 following the decision that the land was important, both environmentally and culturally, especially for the traditional Aboriginal owners (NPWS, 2021).

The National Park contains unique natural heritage as it is in a transition zone of plans from the south-east, north-west and western parts of the State. In the National Park, the Great Dividing Range is at its lowest elevation in this region and this has resulted in the extension of many plants species characteristics of further west NSW into the area (NPWS, 2003). Also, within close proximity to the Project Area and found within the National Park is the Goulburn River, which flows through much of the Goulburn River National Park, has incised a wide gorge flanked by cliffs and caves. The wide, open floodplain of the river and rugged gorge walls provide an excellent environment for self-reliant recreational activities such as walking and photography (NPWS, 2021). The National Park provides a unique habitat for biodiversity and supporting Australia's native fauna and flora.

7.4 Amenity

7.4.1 Vibration

Potential noise impacts associated with the Project will be primarily associated with construction activities, including increased frequency of heavy vehicles along Wollara Road, and will have a potential effect on the land surrounding the Project Area. A Noise and Vibration Impact Assessment (NVIA) will be prepared as part of the EIS in accordance with relevant *NSW guidelines including the Noise Policy for Industry* (EPA, 2017), *Interim Construction Noise Guideline* (DECC, 2009) and *NSW Road Noise Policy* (DECCW, 2011). The NVIA will include the following components of work:

- Establishing the relevant levels of background noise using minimum noise levels specified in the *Noise Policy for Industry*
- Undertaking predictive noise modelling of the Project's construction and operation activities
- Assessing the road traffic noise and vibration during construction activities
- Assessing any vibration impacts at sensitive receivers
- Identifying any reasonable and feasible mitigation and management measures to reduce noise and vibration impacts.

7.4.2 Noise

The Project Area is located on an agricultural parcel of land and surrounded by the densely forested Goulburn River National Park. Background noise levels are expected to be low. The current background noise will be associated with agricultural activities such as machinery operations and local traffic. During the construction of the Project, noise sources will be from the increased traffic to the Project Area, including delivery vehicles, machinery operations and earth moving equipment. This change in noise for the area may impact the fauna movements within the National Park. The NVIA will include mitigation and management measure to reduce noise impacts to the surrounding National Park.

There are a large number of dwellings located within 10 km of the Project Area, most of these properties are located to the north of the Project Area, north of the Tongo State Forest. These dwellings have the potential to be impacted by increased traffic noise.

7.4.3 Visual

The Project will result in visual changes to the landscape within and outside of the Project Area, as parts of the Project infrastructure will potentially be visible to the nearby community, potential users of the Goulburn River National Park and motorists using Wollara Road.

A detailed Visual Impact Assessment (VIA) will be prepared as part of the EIS process. The VIA will include the following components of work:

- Identify the visual catchment of the Project and visually sensitive receivers with consideration for all influencing factors such as topography, relative distance, perspective, orientation and existing vegetation that may obscure views of the Project.
- Determining the sensitivity of existing viewpoints.
- Assessing the Project's visual impacts, based on the magnitude of impact upon the sensitive viewpoints.
- Assessing the Project's impact on landscape character, based on the sensitivity of the existing landscape character and extent of change likely to be caused by the Project on landscape character.
- Consulting with potentially impacted landholders and stakeholders.
- Ground truthing, photography and photomontages of the Project.
- Description of proposed mitigation measures to reduce visual impacts.

7.5 Access

7.5.1 Access to property

The Project will likely require two access points, available through a small access road at the north-western section of the Project Area, as well as its primary driveway (refer to **Figure 4.3**). Heavy vehicles would access the Project Area from the north from the Golden Highway, while light vehicles would access the Project Area from the south from Mudgee and Gulgong.

Preliminary site assessments have commenced to gain an understanding of the road conditions for the transport of materials to the Project Area. This has assessed some of the access routes to the Project Area and the road and safety considerations, with further assessment to be undertaken during preparation of the EIS. This preliminary assessment found that drainage on Ringwood Road and Wollara Road was observed to be in poor to fair condition, with culverts installed on the road surface level generally higher than the verge area. Several floodway sections were marked on the route with signage, where narrow concrete causeways have been constructed. Floodway signage has been provided approaching the Project Area main driveway, however, no concrete causeway was observed. Heavy rain events may pose a potential risk to site access.

Upgrades to Ringwood Road and Wollara Road were raised as issues requiring further investigation during consultation with Upper Hunter Shire Council on 21 October, 2 November and 9 November 2021. In particular, a site inspection was carried out with a Council representative on the 2 November 2021, which included discussion regarding proposed road upgrades. The Proponent commits to undergoing further investigation of the existing road network as part of the EIS and to ongoing consultation with Upper Hunter Shire Council regarding this issue.

Transport for NSW and Crown Lands have been identified as key State Government stakeholders for Phase 2 of consultation (refer to **Appendix C**).

7.5.2 Traffic and parking

The construction phase of the Project will result in increased traffic movement of both lightweight vehicles transporting construction personnel and light construction materials, heavy and oversized vehicles transporting the solar farm and BESS infrastructure and equipment. Traffic increases associated with the operational phase of the Project will be minimal and will generally only involve the movement of light vehicles transporting operation staff around the site intermittently.

A Traffic Impact Assessment (TIA) will be undertaken as part of the EIS to assess the potential transport routes required for the construction of the Project and any potential impact to the road network. The TIA will be undertaken in accordance with relevant NSW Government guidelines and assessment standards.

The TIA will include the following components of work:

- Reviewing and assessing the existing road network
- Reviewing and assessing the proposed site layout including vehicle access, onsite vehicle passage and parking provision
- Field measurements at proposed site access locations and in selected areas along the proposed traffic routes (if data not readily available)
- Assessing the traffic impacts during the construction and operational phases of the Project, including estimation of peak traffic volumes generated by the Project and impacts on existing road network, evaluation of traffic impacts on surrounding roads and intersection (particularly in relation to the capacity and condition of the road network), and identification of any traffic-related safety implications of the Project.
- Potential cumulative impacts associated with the increased traffic during the construction and operation of the project.

7.5.3 Road and rail facilities

Major solar and battery components will be delivered to the site by truck via the Hunter Expressway, New England Highway, Golden Highway and Wollara Road.

The access route assessment has commenced, which has assessed the proposed route for transportation of the solar farm materials. In this assessment the Hunter Expressway, New England Highway, Golden Highway, Ringwood Road and Wollara Road have been assessed for their condition and capacity to facilitate the vehicles needed for the Project. Ringwood Road and Wollara Road were inspected in more detail as they function as local roads and carry substantially lower traffic volumes, with sections of sealed and unsealed road formation. The assessment focused on the observed pavement condition, road geometry and signage. This found that there are some upgrades needed for Ringwood Road and Wollara Road to ensure that site access can accommodate the construction vehicles for the Project. These upgrades may include additional signage, pavement rehabilitation, regrading and resheeting.

The Proponent will continue to consult with Upper Hunter Shire Council to determine whether these upgrades can be done in alignment with their existing road maintenance schedule, and to determine the most appropriate extent of upgrades required.

7.6 Land

7.6.1 Stability

The centre of the Project Area is categorised as Class 2 under the Land and Soil Capability Assessment Scheme (see **Figure 7.6**) (OEH, 2012). Under this class the land can be subject to sheet, rill and gulley erosion, as well as wind erosion (OEH, 2012).These stability issues of the land and soil can be managed through various strategies, such as creating wind breaks and increasing ground cover across the area. The remaining land is classed as Class 3 which, like Class 2 is subject to sheet, rill and gully erosion, wind erosion and soil structure decline. The EIS will include a Soils Assessment which will consider the potential impacts associated with transitioning the Project Area from predominantly agricultural land use to renewable energy generation. The assessment will also propose mitigation and management strategies to minimise the effects of erosion and soil structure decline.

7.6.2 Soil chemistry

The Goulburn River National Park is characterised as predominately having sandstone soils which were formed from the Narrabeen Group of Triassic sedimentary rock. These are often relatively low in nutrient levels, especially phosphorous (NPWS, 2003). The Project Area is located on a basalt cap which is remnant of volcanic events during the early Tertiary Period (65 to 54 million years ago). These basalt soils which are found in the Project Area are nutrient rich and provide basaltic soils. Basaltic soils are generally rich in phosphorous, calcium, magnesium and micronutrients (NPWS, 2003).

7.6.3 Exploration or Mineral Titles

An expired Petroleum Exploration Licence (PEL 456) applies to part of the Project Area. The licence was held by Hunter Gas Pty Ltd and expired in March 2018. The Proponent will engage with the expired Exploration Licence holder if required.

7.6.4 Land capability

The Project Area is not considered to be Biophysical Strategic Agricultural Land (BSAL) under the Upper Hunter Strategic Regional Land Use Plan (DPI, 2012). Soils within the Project Area are classified as kurosols under the Australian Soil Classification Soil Type map of NSW, with rudosols occurring in the surrounding National Park (DPIE, 2020). The majority of the Project Area is classified as Class 2 and 3 under the Land Soil Capability Assessment Scheme. This type of land has the capability to support a wide range of land uses and land management actions. This land capability is often associated with fertile soils and short gradual slopes. This is consistent with the Project Area as it is located on an elevated basalt cap previously used for agriculture, including grazing and cropping.

While it is appreciated that the Project Area is considered to have a high level of Land Soil Capability, the Project Area is considered to be best suited for the proposed solar farm for the following reasons:

- The Project Area will continue to be used for agricultural purposes – approximately 1,000 sheep will be contained within the maximum development footprint. This will assist in controlling biomass, as well as ensuring that the Project Area's agricultural capability is maintained for the future. Fencing around the solar farm will ensure that grazing impacts are restricted only to the Project, with areas of high ecological value around the boundary of the property earmarked for conservation restoration work.

- The Project Area is surrounded by National Park – the ongoing use of the Project Area for intensive agricultural purposes has the potential to result in edge affects to the surrounding National Park through the spread of agricultural weeds and reduced connectivity. Use of the Project Area for solar energy and moderate grazing would minimise these edge effects through fencing around the proposed maximum development footprint, ongoing weed management, and restoration work to edge areas connecting to the National Park. Where possible, scattered trees will also be retained throughout the Project Area to assist in maintaining habitat connectivity.

- The Project Area contains an existing transmission line – an existing 500 kV transmission line runs through the south-eastern corner of the Project Area. The Proponent has been advised by TransGrid that access to the grid via this transmission line is viable and a suitable solution. Having direct connection to an existing transmission line means that the Project is not required to establish new transmission lines through the National Park or any neighbouring properties. This ultimately ensures that existing surrounding land uses are not impacted by the Project.

- The Project Area will have minimal visual impacts to surrounding properties – due to the presence of the National Park surrounding the Project Area, the Project would have minimal visual impacts to nearby properties once operational.

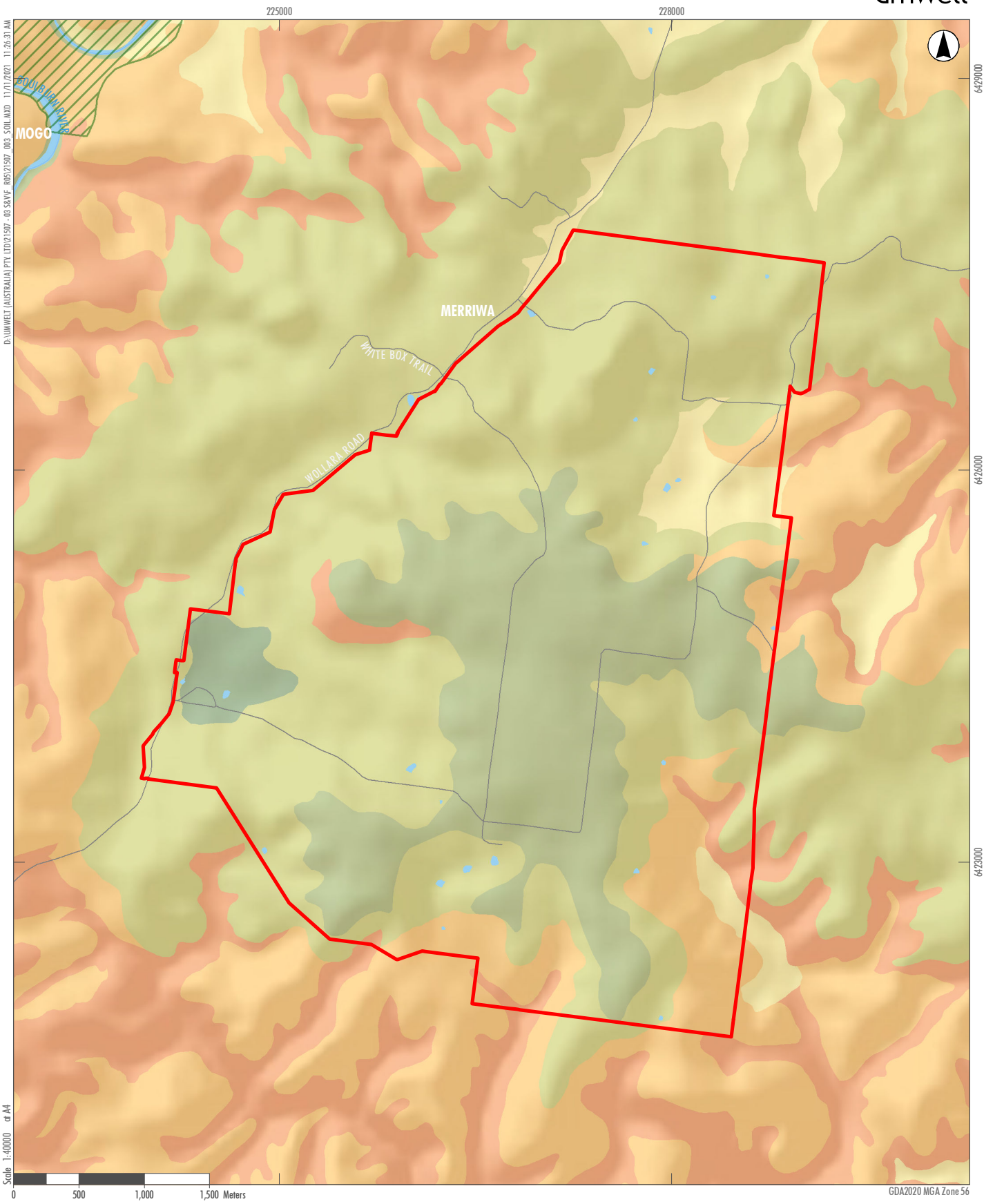
- The Project will also contribute to the economy of the Upper Hunter region, through the provision of jobs during both construction and operation. Local resources and businesses would be prioritised wherever possible.

As noted within the Social Impact Scoping Report (refer to **Appendix C**), community members have acknowledged the potential conflict of renewable energy projects with agriculture. However, they have also recognised that renewable energy can coexist with agricultural land uses, as would be the case with this Project. Additionally, preliminary consultation with the community has indicated that there is a greater concern for the development of new transmission lines impacting surrounding agricultural land. As this Project would be connecting to an existing transmission line, support for the choice of the Project Area location has been received positively within consultation so far.

In addition, the Proponent is committed to avoiding (where possible) and minimising impacts to biodiversity values across the Project Area, as well as providing restoration work to improve connectivity with the surrounding National Park. By contrast, the continued use of the Project Area for solely agricultural purposes, without the prospect of native vegetation restoration work in certain high conservation value areas, is likely to result in impacts to the surrounding National Park and a negative conservation outcome.

While it is acknowledged that the Project would result in the loss of Class 2 and 3 land, as aforementioned, the Project Area is not considered to be BSAL under the Upper Hunter Strategic Regional Land Use Plan. The Project would also result in broader benefits for the community and natural environment, in comparison to sole agricultural land use. The Project also proposes to ensure ongoing, contained agricultural use of the land through sheep grazing within the development footprint. On balance, the proposed solar farm is considered to be a suitable land use for the Project Area.

As part of the EIS assessment, detailed investigations of the soil capability of the Project Area will be undertaken in order to confirm the land capability classification.



Legend

- Project Boundary
- Biophysical Strategic Agricultural Land (BSAL)
- Road
- Waterbodies
- Creeks/ Rivers

Land and Soil Capability

- 2 - Slight but Significant Limitations
- 3 - Moderate Limitations
- 4 - Moderate to Severe Limitations
- 5 - Severe Limitations
- 6 - Vey Severe Limitations
- 7 - Extremely Severe Limitations

FIGURE 7.6

Land and Soil Capability

Image Source: ESRI Basemap (2021) Data source: NSW DFSI (2021)

7.6.5 Topography

The Project Area ranges in elevation from approximately 325 m to 450 m above sea level. The Project Area is located on an elevated parcel of land that separates it from the surrounding Goulburn River National Park. The Project Area is generally flat in terrain, with some drainage lines and creeks providing some minor undulation in the landscape. The terrain is generally high in the centre of the Project Area, with a gradual slope down to its north-eastern and western boundaries. The landscape drops away sharply into the surrounding National Park, particularly at its south-eastern boundary. The surrounding National Park consists of hills and ridgelines, and a number of ravines that lead down into creeks and rivers, notably the Goulburn River.

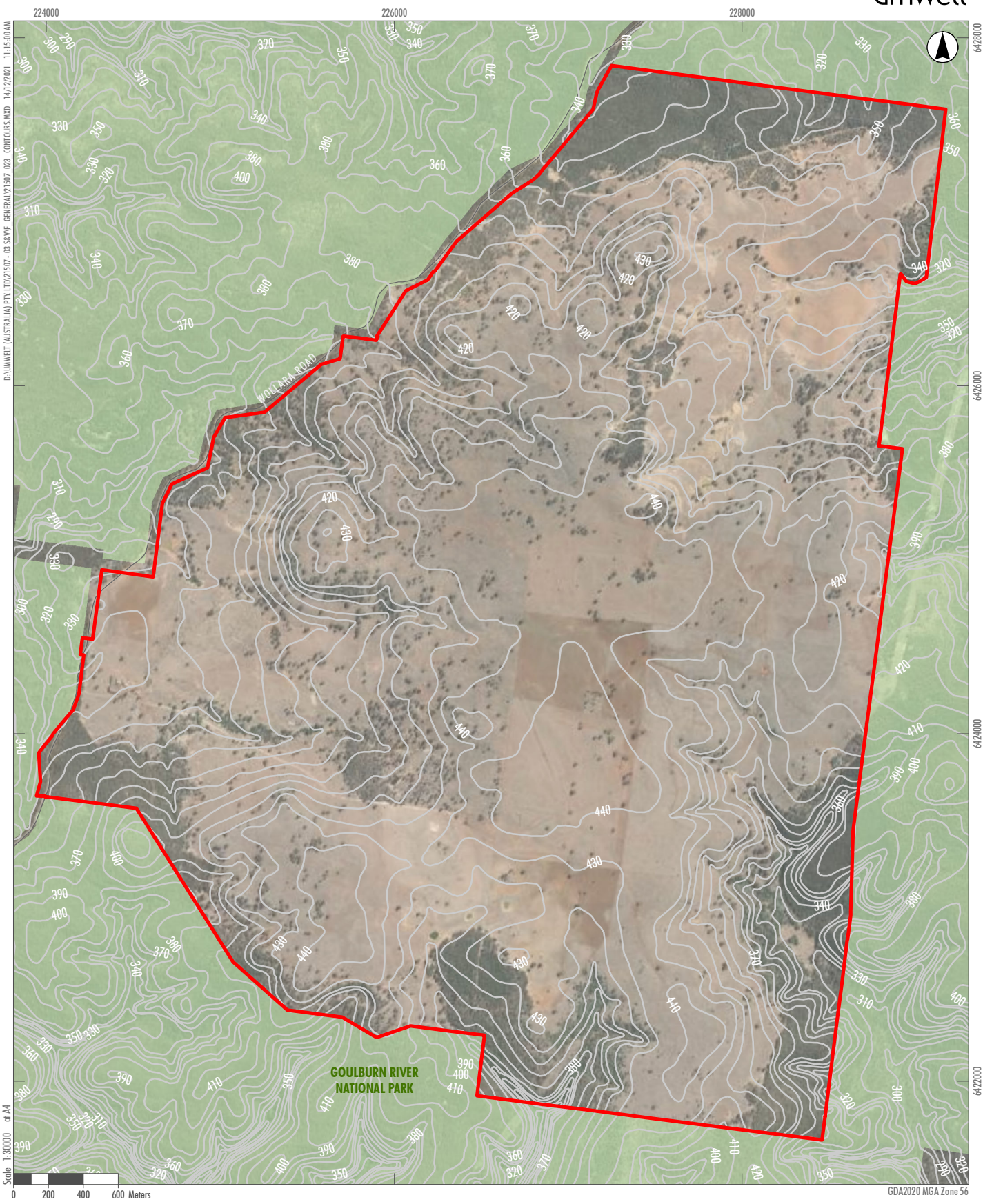


FIGURE 4.5

Topography

Image Source: ESRI Basemap (2021) Data source: NSW DFSI (2021)

7.7 Social

A comprehensive SIA will be undertaken as part of the EIS. A key component of the SIA process will be community engagement, which will inform the assessment of the social and economic impacts associated with the Project. The community consultation program has been designed in line with the following objectives:

- Foster a transparent and open approach to the development of the Goulburn River Solar Farm and ensure 'no surprises' for the local community
- Keep the community and stakeholders informed about the Goulburn River Solar Farm through the provision of accurate, timely and factual project information
- Receive feedback from the community that can be used in the design layout of the solar farm.
- Identify and address community and stakeholder concerns and maintain transparency in the Project design, implementation and ongoing operations
- Involve stakeholders and the community in key decisions and develop long term relationships and partnerships
- Identify opportunities for local business involvement and local employment in the construction and operations of the Goulburn River Solar Farm
- Co-design, develop and deliver a benefit sharing program in collaboration with the community, and in partnership with local stakeholders where possible.

The Proponent has prioritised early stakeholder engagement to build positive relationships with near neighbours and key stakeholders of the Project, to inform Project design and development, and to identify and understand perceived issues and impacts as early as possible in planning and assessment process.

As part of Round 1 of the SIA, a range of consultation activities were undertaken. These activities are detailed within the Community and Stakeholder Engagement Plan and Social Impact Scoping Report provided in **Appendix C**.

The Social Impact Scoping Report provides the details about the social setting of the area surrounding the Project Area. The Social Impact Scoping Report provides detail on the following subjects:

- **Way of Life**
    - Way of life considers how people live, work, play and interact with one another. The majority of homes across the social locality broadly are standalone houses, with semidetached/terrace homes and apartments featuring as only a minor contributor.
- **Community**
    - A community is described as a group of people that have characteristics in common. This includes the composition, cohesion, and character of the population, as well as how the community functions and the sense of place that exists.

- **Accessibility**
    - Access to and use of infrastructure, services and facilities within a community can provide an indication of the capacity, resources, and growth ability of a region, and can also identify areas of community need. This section highlights the range of services, facilities, or infrastructure available to the study communities, including health and education services, transportation and logistics provision, accommodation, as well as social services and cultural facilities.
- **Culture**
    - This section provides an overview of the Aboriginal and European cultural significance of the region, including the shared beliefs, customs, values, and connection to place shared by the communities within the social locality.
- **Health and wellbeing**
    - The health and well-being of communities includes the physical, mental, and spiritual health of its members, and it is not just associated with the absence of disease.
- **Surroundings**
    - People's day to day experiences are shaped by their physical surroundings including both natural features and built environments. This also includes the ecosystem services such as shade, pollution control and erosion control, public safety and security, access to and use of natural and built environment, and aesthetic values
- **Decision-making systems**
    - The decision-making systems particularly whether people experience procedural fairness, if they can make informed decisions, can meaningfully influence decision, and can access complaint, remedy and grievance mechanisms.

As summarised in Section 6.1 key issues that have been raised by stakeholders to date include the following:

- Accessibility, including:
    - Strain on local services
    - Use of local roads
- Surroundings, including:
    - Impacts on the natural environment
    - Public safety on local roads
    - Social amenity
    - Project decommissioning and future land use
- Livelihoods, including opportunity for local employment and procurement
- Decision-making systems, including community participation and consultation

- Way of Life and Community, including
    - Community Sense of Place
    - Sharing of Community Benefits
- Culture, including Aboriginal cultural values and attachment to Country
- Cumulative effectives of renewable energy development.

These issues and specific feedback received are discussed in detail in Section 3.0 of the Social Impact Scoping Report (**Appendix C**).

There are several potential opportunities and impacts associated with the Project. **Table 7.6** provides a summary of these.

Table 7.6 Potential social opportunities of the Project

Potential opportunities	Potential impacts
Construction	
• Local employment and training of construction workers, e.g., apprentices • Local procurement of materials • Permanent infrastructure and service improvement, e.g., to road networks • Improvement in the local economy due to accommodation and food requirements	• Increased traffic causing a perceived or actual increase in road safety risks for local users and increase to potential impacts on the road quality • Increased pressure on local facilities and services particularly housing and accommodation, in particular associated with multiple concurrent and nearby major projects.
Operation	
• Local employment and training for operational staff • A community development funding scheme • Provide benefits to expand the National Park through an offset strategy for the project. • Provision of a communications tower on site which will improve telecommunications in the region.	• Devaluation of surrounding National Park and nearby properties • Changes to the landscapes visual character causing amenity disturbance

These will be key considerations throughout preparation of the EIS and the SIA. Consultation with the community and stakeholders will be ongoing throughout the Project, including operation. The Proponent is committed to addressing all of the aforementioned concerns through ongoing consultation and investigation throughout the EIS process.

7.8 Economic

7.8.1 Natural resource use

The Upper Hunter and Mid-Western regions are highly disturbed landscapes, in which there has been significant loss of natural habitat since European occupation. Approximately 8.4% of land in the Upper Hunter is protected for conservation. The Project Area is surrounded by 70,161 ha of the Goulburn River National Park, which was gazetted in 1983, and is managed by the NSW NPWS.

The Upper Hunter Shire Council manages more than 119 ha of parks, reserves and ovals which provide for activities such as walking, bike riding, picnics and barbecues, playground, and organised sport.

7.8.2 Livelihoods

People's capacity to sustain themselves through employment or business is captured collectively under the impact category of livelihoods. The Project Area is located within the Upper Hunter LGA and is in proximity to Merriwa, Gulgong and Mudgee. Based on a preliminary review of key community and demographic information (**Table 7.7**), these proximal residential locations can be characterised as follows:

- Key industries of employment include coal mining, beef cattle farming, managers, and technicians and
- trades workers.
- Age distribution is varied, but older than the NSW median age (except in Mudgee).
- Higher proportion of houses with no internet access compared to NSW.
- Lower than NSW median housing costs (except for mortgage repayments in Mudgee which were the same).

This key community and demographic factors are summarised in **Table 7.7** below.

Table 7.7 Selected demographics of key communities near the Project Area (ABS, 2021)

	Merriwa	Gulgong	Mudgee	NSW
Population	1,761	2,521	10,923	7,480,228
Medium age	44	41	37	38
Private dwelling number	864	1,135	4,946	3,059,599
Top industry of employment	Beef Cattle Farming (specialised)	Coal Mining	Coal Mining	Hospitals (except Psychiatric Hospitals)
Top occupation	Managers	Technicians and Trade work	Technicians and Trade work	Professionals
Median weekly rent	$175	$250	$300	$270
Median monthly mortgage repayments	$1213	$1517	$1733	$1733
Internet not accessed through dwelling	26.5%	23.6%	21.2%	14.7%

7.8.3 Opportunity cost

The Project will provide direct financial benefits to the regional and local community, involving:

- Capital investment value of approximately $700 million
- Employment generating up to around 450 direct jobs
- Indirect benefits to local land services through the construction and operational phase.

An Economic Impact Assessment (EIA) will be undertaken as part of the EIS process to determine the likely local and regional economic benefits arising from the Project and identify potential economic impacts associated with the Project, including investment, employment, business participation, local wage stimulus, impact on accommodation, impact on agricultural activities, cumulative impacts, local economic stimulus, financial returns to Council, environmental benefits and tourism impacts.

7.9 Water

A Water Resources Impact Assessment (WRIA) will be undertaken as part of the EIS. This will consider potential impacts of the Project on water resources in the vicinity of the Project Area, including assessments on flooding (including modelling for 2, 5 and 100-year flood events), groundwater levels, erosion and sedimentation, surface- and groundwater quality, water users, and water sourcing and licencing. It will identify any mitigation and management measures to minimise potential impacts of the Project on water resources.

7.9.1 Hydrology

The Goulburn River is located approximately 3 km from the Project Area and runs through the Goulburn River National Park. The Goulburn River runs near the west and southern boundaries of the Project Area. The Bow River also runs through the Goulburn River National Park. Redlynch Creek, which extends across the north-eastern section of the Project Area, flows into the Bow River. To the west of the Project Area flows Rocky Creek which flows into the Goulburn River.

There are also several dams located across the property which are linked to the to several of the drainage lines which flow throughout the property. These dams are currently used to support the agricultural land use of the Project Area.

In the surrounding area, in the National Park, there is a high susceptibility of erosion of the sandstone-based soil which has implications for management, as areas of soil disturbance inevitably require stabilisation and rehabilitation. Areas of particular concern include the National Park's vehicle track network. The riverbanks are also susceptible to erosion, and this can be accelerated by changes in water flow regimes, vehicle traffic and stock movements.

Impacts associated with surface water runoff, particularly as a result of the Project's increase in impervious surfaces, will be a significant consideration for the EIS. Impacts to surface water flows, nearby waterways and the surrounding National Park will be assessed.

7.9.2 Water quality

There are several potential factors which could impact the water quality in the Project and surrounding region. The Goulburn River National Park utilises chemical weed control to manage the extend of weeds. This practice has potential to runoff into the watercourses throughout the National Park and impact on the water quality (NPWS, 2003). There is also the increased risk to water quality from introduced plants associated with agricultural activities (NPWS, 2003). These potential issues will be addressed through the EIS and detailed WRIA.

7.9.3 Water availability

As mentioned above in **Section 7.9.1**, there are several creeks and drainage lines that run through the property. There are also several dams that occur throughout the property. These water sources will be assessed for potential impacts as a part of the WRIA.

7.10 Hazards and Risks

This section addresses potential hazards and safety risks associated with the Project including bushfire threat, spontaneous ignition and electromagnetic fields, risk to human health and infrastructure from bushfires, spontaneous ignition, electromagnetic fields or the proposed grid connection infrastructure.

7.10.1 Bushfire

NSW Rural Fire Service (RFS) bushfire prone land mapping (RFS, 2021) indicates that the Project Area is located within a bushfire prone area. Although the Project Area has been subject to extensive clearing there are remnant patches of vegetation within the Project Area and the area is surrounded by the Goulburn River National Park. This may provide fuel loads in the area and present spreading risks. Inner Asset Protection Zones (IAPZ) would be included as part of the proposed design.

A Bushfire Threat Assessment will be undertaken as part of the EIS in accordance with the requirements of the RFS Planning for Bush Fire Protection (2019). Consultation with the RFS will also be undertaken during preparation of the EIS and a Bushfire Management Plan will be prepared.

7.10.2 Hazardous and offensive development

The location of the BESS infrastructure will be subject to further assessment, including a preliminary hazard analysis (PHA) in accordance with State Environmental Planning Policy No 33 – Hazardous and Offensive Development. At this stage, it is expected that the BESS would be located at the south-eastern corner of the Project Area, in close proximity to the existing transmission line. It is expected that a PHA incorporating a Level 1 Qualitative Risk Analysis and Level 2 Semi-quantitative Risk Analysis will be needed to satisfy DPIE requirements. The PHA will involve the following components of work:

- Screening of preliminary risks for all hazardous materials and dangerous goods to be stored and transported to/from the Project
- Classifying and prioritising risks, and estimating societal risk, in accordance with the *NSW Multi-level Risk Assessment Guideline* (DPI, 2011).
- Analysing consequence and frequency for hazard scenarios identified as requiring further assessment in the qualitative risk assessment, undertaken in accordance with the *NSW Risk Criteria for Land Use Safety Planning* (Department of Planning, 2011)

7.10.3 Dangerous goods

Any dangerous goods related to the project will be assessed through the PHA as mentioned above in **Section 7.10.2**.

7.10.4 Flooding

The Project is not found in any flood prone areas mapped under the Upper Hunter LEP. Any potential flooding risks to the Project Area will be assessed through the WRIA, see **Section 7.9** for further details

7.10.5 Groundwater contamination

A WRIA will be undertaken as part of the EIS. This will consider potential impacts of the Project on water resources in the vicinity of the Project Area, including assessments on groundwater levels and groundwater quality. It will identify any mitigation and management measures to minimise potential impacts of the Project on water and soil resources.

7.10.6 Land contamination

A search of the NSW Environment Protection authority (EPA) found that there is no contaminated land within the Project Area or within the surrounding region. If land contamination is identified during the Project, this will be addresses through the CEMP.

7.10.7 Waste

The Project is expected to have a 35-40 year lifespan. At this point, the solar farm may either be upgraded to continue operation or decommissioned. Either way, all solar panels to be disposed of will be recycled. The Project will seek to minimise potential landfill wherever possible.

The EIS will clarify and quantify the likely waste streams to be generated during construction and operation and describe measures to manage, reuse, recycle and dispose of this waste in accordance with the Waste Classification Guidelines (EPA, 2014).

7.10.8 Dams Safety

There are approximately 17 damns that occur across the Project Area. Many of these dams are associated with the second order creeks and drainage lines that run through the Project Area. The safety of dams in the Project Area will be further assessed in the EIS as a part of the hydrological studies.

7.10.9 Other issues

Electromagnetic fields (EMFs) are present where electric current flows. It is expected that EMF risks associated with the Project will be below the International Commission on Non-Ionizing Radiation Protection (ICNIRP) Guidelines for limiting exposure to time-varying electric and magnetic fields (1 Hz – 100 kHz) (2010).

A review of potential EMF risks associated with the Project will be undertaken, and suitable safeguards and mitigation measures will be proposed to reduce any potential risks. A communications tower is likely to be required as part of the Project, further detail of the design of the communications tower will be confirmed during the EIS.

7.11 Built Environment

7.11.1 Private property

The Project Area is located on freehold land with two landowners. There are several lots that constitute the Project Area. There are also several freehold properties that are within the surrounding region that have private landowners. These surrounding properties are unlikely to be impacted by the Project as they are some distance from the Project Area.

7.11.2 Public land

The Project Area is directly surrounded by the Goulburn River National Park which is managed by NPWS. Wollara Road which will be the access road for the Project, is located on Crown Land. The Tongo State Forest is in close proximity to the Project Area and is owned by NSW State Forests.

7.11.3 Public infrastructure

Known public infrastructure within the Project Area includes the 500 kv transmission line, which runs through the south-eastern corner of the Project Area, and Wollara Road which is categorised as Crown Land.

7.11.4 Design quality

The design of the Project has considered several environmental and cultural constraints throughout the Project Area. The current preliminary design of the Project largely places the solar panels on the eastern side of the Project Area. This will be refined to minimise impacts to threatened species as their habitat as the Project progresses. The design of the Project will be subject to further analysis and refinement as part of the EIS process, as informed by the detailed specialist assessments and additional community and stakeholder engagement.

7.12 Air

7.12.1 Atmospheric emissions

Atmospheric emissions associated with the Project includes the transportation of materials and people to the property with use of vehicles which use fossil fuels. There may be some atmospheric emissions also associated with the machinery used during the construction phase of the Project. These would be managed by developing and implementing a CEMP, including controls such as limiting idling vehicles and machinery throughout construction, and preparing a transport management plan that would limit the number of vehicle movements where possible.

Once operational, the Project would contribute to reducing greenhouse gas emissions by providing a renewable form of energy generation.

7.12.2 Particulate matter

The construction of the Project has the potential to increase dust in the Project Area and surrounding area. Dust, as well as air quality generally, will be managed through an air quality t management plan. The EIS will assess potential air quality impacts of the Project in accordance with relevant NSW guidelines in relation to construction activities and provide appropriate management and mitigation measures.

7.13 Other Issues

The EIS will also address other potential impacts relating to the following matters:

- Decommissioning and rehabilitation – the EIS will assess potential impacts of the Project arising from decommissioning and rehabilitation activities, particularly on the final landform and compatibility with existing land uses. Consideration for disposal of solar panels and other infrastructure will also be included in the EIS.

- The Project Area is located within a rural setting and has been subject to extensive clearing associated with previous agricultural land uses. Grazing and cropping are currently the main land use in the Project Area. The Project Area is zoned as RU1 Primary Production under the Upper Hunter Local Environmental Plan 2013. The Project will result in a change in land use from agriculture to electricity generation, however, agricultural land use would continue through the operational life of the Project in the form of grazing. The EIS will include a Land Use Conflict Risk Assessment of the impact of the Project on existing land use including on agricultural production.

7.14 Cumulative Impacts

The Large-scale Solar Energy Guideline (DPE, 2018) contains requirements for assessing any cumulative impacts of a project with other developments (proposed, approved and operating), especially relating to biodiversity, visual, socio-economic and construction impacts. The Project will be assessed in accordance with the Cumulative Impact Assessment Guidelines for State Significant Projects (DPIE, 2021)

Table 7.8 shows renewable energy developments within 100 km of the Project Area.

Table 7.8 Renewable energy developments within 100km of the Project Area

Renewable Development	Developer/Owner	Details	Status
TransGrid Central West Transmission Line	TransGrid	TransGrid is currently investigating the instalment and operation of new transmission infrastructure as a key component of the Central West Orana REZ	In Planning
Valley of the Winds Wind Farm	UPC\AC Renewables Australia	Located in the Central West Orana REZ the project will consists of 154 wind turbines. The project is located 57 km north-west of the proposed Goulburn River Solar Farm.	In Planning
Dunedoo Solar Farm	ib vogt	Development of a 55 MW solar farm with energy storage and associated infrastructure. The project is located 70 km north-west of the proposed Goulburn River Solar Farm.	In Planning
Liverpool Range Wind Farm	Tilt Renewables	1000MW with potential increase 1300MW increase in capacity. The project is located 55 km to the north of the proposed Goulburn River Solar Farm.	Approved

Renewable Development	Developer/Owner	Details	Status
Stubbo Solar Farm	Renewable Energy Systems	Solar farm 400 MW capacity, with battery storage of up to 200 MWh. Located between Blue Springs Road and Barneys Reef Road. The project is located 48 km to the north of the proposed Goulburn River Solar Farm.	Approved
Barneys Reef Wind Farm	Renewable Energy Systems	Wind farm with approximately 60 turbines and associated infrastructure. The project is located 50 km to the north of the proposed Goulburn River Solar Farm.	In Planning
Tallawang Solar Farm	Renewable Energy Systems	RES is proposing a 500MW solar farm with associated infrastructure. The Project is 55 km west of the proposed Goulburn River Solar Farm.	In Planning
Spicers Creek Wind Farm	CWP Renewables	CWP is currently investigating the feasibility of a wind farm between Gulgong and Wellington in the Central West Orana REZ The project is 80 km west of the proposed Goulburn River Solar Farm Project.	Feasibility

There are also a number of mining-related projects within the area that may also have an impact on regional services and infrastructure. This is summarised in **Table 7.9** below.

Table 7.9 Other projects within 100km of the Project Area.

Project	Developer/Owner	Details	Status
Bowdens Silver	Bowdens Silver	Project comprises the development of an open cut silver mine and associated infrastructure 26 km east of Mudgee and approximately 2-3 km northeast of the town of Lue. When fully operational the project will have a maximum annual ore extraction of approximately 2.07 Mt. Project located 45 km south-west of the proposed Goulburn River Solar Farm Project	In Planning
Mangoola Continued Operations Project	Glencore	The Project involves the extension of open cut mining at Mangoola Coal Mine to a new mining area immediately north of the existing operation. The Project would extract approximately 52 Mt of additional ROM coal. Project located 55 km east of the proposed Goulburn River Solar Farm.	Approved

Project	Developer/Owner	Details	Status
Dalswinton Sand and Gravel Quarry	Rosebrook Sand and Gravel	The proposed development is expected to extract approximately 15-20 Mt of material over an expected life of 25 years. The quarrying operation will expand across 89 ha of the site, with an estimated annual maximum production capacity of 500,000 tpa. The site is located adjacent the Hunter River and 7.5 km southeast of Denman. Project located 60 km east of the proposed Goulburn River Solar Farm Project.	In Planning

The EIS will include an assessment of the potential cumulative impacts associated with the Project.

8.0 Conclusion

This Scoping Report has outlined the proposed Goulburn River Solar Farm and established the planning context for the development application, currently in the early planning phase. The Project will be assessed under Part 4 of the EP&A Act and will classified as SSD under the SRD SEPP.

Due to the presence of matters of national environmental significance (MNES) under the EPBC Act, it is expected that the Project would be assessed through the NSW and Commonwealth Bilateral Agreement.

The Project layout and design will be subject to further analysis and refinement as part of the EIS process, as informed by a range of specialist studies and community and stakeholder engagement.

All identified environmental and social issues will be subject to assessment as part of the EIS as detailed in **Section 7.0** and in accordance with the 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 process.

The Project will provide long-term, strategic benefits to the State of NSW through provision of regional investment and cleaner electricity generation, the Project will also provide direct financial benefits to the regional and local community, including:

- Indirect benefits to local services through the construction and operation phases
- To deliver affordable and sustainable solar power to businesses and communities within NSW.
- To provide renewable energy that would contribute to the reduction of greenhouse gases across NSW, r avoiding up to 705,000 tonnes per annum of carbon dioxide.
- To support the local regional economy by preferencing local workers and businesses in the development of the Project.
- To facilitate community engagement and participation in the design, development and operation of the Project.
- To minimise environmental and heritage impacts to the Project Area through adaptive design.

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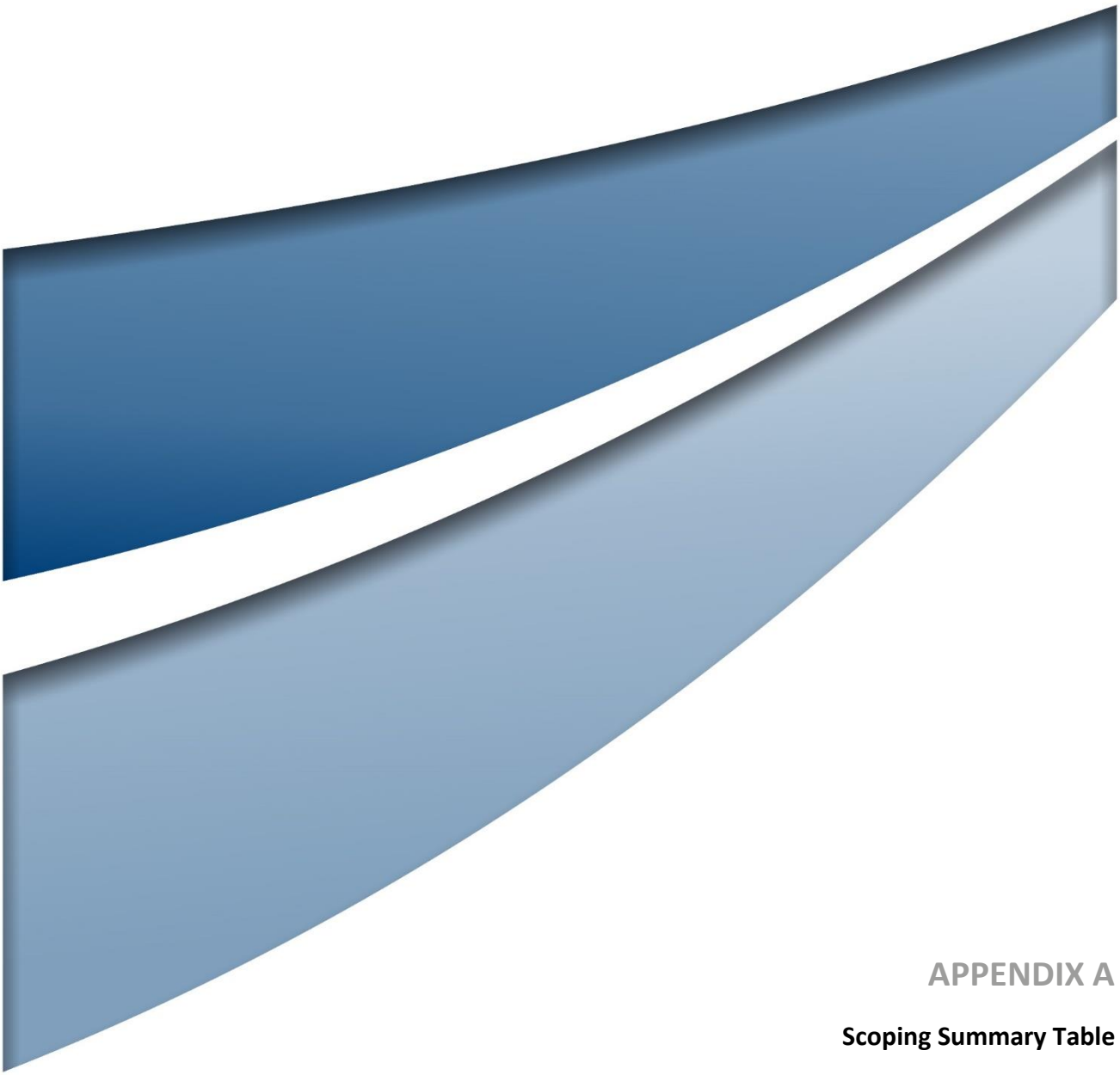
10.0 Glossary and Abbreviations

Term/Abbreviation	Definition
°C	Degrees Celsius
ABS	Australian Bureau of Statistics
AC	Alternating current
ACHA	Aboriginal Cultural Heritage Assessment
ACT	Australian Capital Territory
AHIMS	Aboriginal Heritage Information Management System
BAM	Biodiversity Assessment Methodology
BC Act	NSW *Biodiversity Conservation Act 2016*
BDAR	Biodiversity Development Assessment Report
BESS	Battery energy storage system
BSAL	Biophysical Strategic Agricultural Land
CEMP	Construction Environmental Management Plan
CLM Act	NSW *Contaminated Land Management Act 1997*
Crown Land Act	NSW *Crown Land Management Act 2016*
DA	Development Application
DECC	NSW Department of Environment and Climate Change (former)
DECCW	NSW Department of Environment, Climate Change and Water (former)
DPE	NSW Department of Planning and Environment (former)
DPI	NSW Department of Planning and Infrastructure (former)
DPIE	NSW Department of Planning, Industry and Environment (current)
EEAP	NSW Energy Efficiency Action Plan
EIS	Environmental impact statement
EMF	Electromagnetic field
EPA	Environment Protection Authority
EPBC Act	Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*
EPL	Environment Protection Licence
EP&A Act	NSW *Environmental Planning and Assessment Act 1979*
EP&A Regulation	NSW *Environmental Planning and Assessment Regulation 2000*
FM Act	NSW *Fisheries Management Act 1994*
GW	Gigawatt (unit of power equivalent to 1 billion watts)
GWh	Gigawatt-hour (unit of energy)
ha	Hectare
Heritage Act	NSW *Heritage Act 1977*
ICNIRP	International Commission on Non-Ionizing Radiation Protection
Involved Dwelling	Dwelling located on land owned by landholders involved in the Project
ISEPP	NSW *State Environmental Planning Policy (Infrastructure) 2007*
km	Kilometres
kV	Kilovolt
LALC	Local Aboriginal Land Council
LEP	Local Environmental Plan
LGA	Local Government Area

Term/Abbreviation	Definition
Lightsource	Lightsource Development Services Australia Pty Ltd
NDC	Nationally Determined Contributions
NEM	National Electricity Market
NPWS	National Parks and Wildlife Service
NSW	New South Wales
NVIA	Noise and Vibration Impact Assessment
MW	Megawatt (unit of power equivalent to 1 million watts)
MWh	Megawatt-hour (unit of energy)
MWp	Megawatt-peak (solar farm output at theoretical optimal performance)
MNES	Matter of National Environmental Significance
NEM	National Electricity Market
Non-involved dwelling	Dwelling located on land owned by landholders not involved in the Project
NOW	NSW Office of Water (former)
NPW Act	NSW *National Parks and Wildlife Act 1974*
OEH	NSW Office of Environment and Heritage (former)
PCT	Plant community type
PHA	Preliminary hazard analysis
POEO Act	NSW *Protection of the Environment Operations Act 1997*
Project Area	Refers to the total area of the proposed solar farm
Proponent	Lightsource bp
REAP	Renewable Energy Action Plan
Roads Act	NSW *Roads Act 1993*
RET	Renewable Energy Target
RFS	NSW Rural Fire Service
RTA	NSW Roads and Traffic Authority (former)
SEARs	Secretary's Environmental Assessment Requirements
SIA	Social Impact Assessment
SRD SEPP	NSW *State Environmental Planning Policy (State and Regional Development) 2011*
SSC	State Suburb (Census statistical unit)
SSD	State Significant Development
TEC	Threatened ecological community
The Project	Goulburn River Solar Farm Project
TIA	Traffic Impact Assessment
UCL	Urban Centre and Locality
UNFCCC	United Nations Framework Convention on Climate Change
VIA	Visual Impact Assessment
WRIA	Water Resources Impact Assessment
WSP	Water Sharing Plan
WM Act	NSW *Water Management Act 2000*



APPENDIX A

Scoping Summary Table

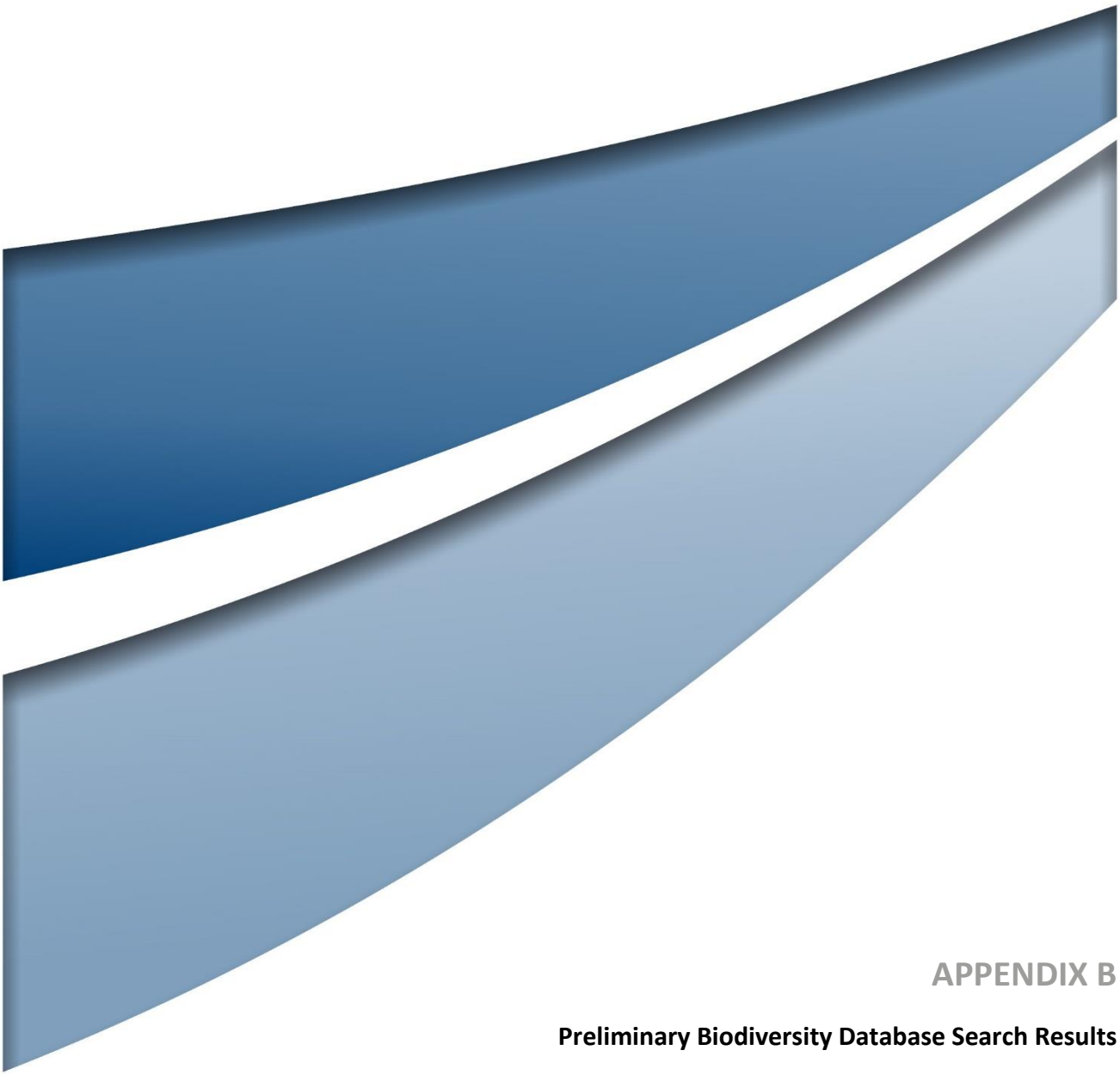
Table A1.1 Scoping summary table

Level of assessment	Matter	CIA[1]	Engagement	Relevant government plans, policies, and guidelines	Scoping report reference
Detailed	Biodiversity -Conservation Areas	Y	Specific	Commonwealth EPBC 1.1 Significant Impact Guidelines-Matters of National Environmental Significance (Commonwealth of Australia, 2013)	Section 7.2.3
Detailed	Biodiversity – Terrestrial flora and fauna	Y	Specific		Section 7.2.4
Detailed	Heritage – Aboriginal	Y	Specific		Section 7.3.1
Detailed	Heritage - Historic	Y	Specific		Section7.3.2
Standard	Heritage - Natural	N	General		Section 7.3.3
Standard	Amenity – Noise	N	General		Sections 7.4.1 ,7.4.2
Standard	Amenity - Vibration	N	General		Sections 7.4.2, 7.4.1
Standard	Amenity – Visual	Y	General		Section 7.4.3
Detailed	Access – Access to property	N	Specific		Section 7.5.1
Detailed	Access – Road Facilities	N	General		Section 7.5.3
Standard	Land – Stability	N	General		Section 7.6.1
Standard	Land – Soil chemistry	N	General		Section 7.6.2
Standard	Land – Land capability	N	General		Section 7.6.3
Standard	Land – Topography	N	General		Section 7.6.4
Detailed	Social – Way of life, community, accessibility, culture, surroundings and decision-making systems	Y	Specific	Social Impact Assessment Guidelines for State Significant Projects (DPIE, 2021)	Section 7.7
Detailed	Economic – Natural resource use	Y	Specific		Section 7.8.1
Detailed	Economic - Livelihoods	Y	Specific		Section 7.8.2

Level of assessment	Matter	CIA[1]	Engagement	Relevant government plans, policies, and guidelines	Scoping report reference
Detailed	Economic – Opportunity cost	Y	Specific		Section7.8.3
Detailed	Water - Hydrology	Y	Specific		Section 7.9.1
Detailed	Water – Water quality	Y	Specific		Section 7.9.2
Detailed	Water – Water availability	Y	Specific		Section 7.9.3
Detailed	Hazards and Risks - Bushfire	Y	Specific		Section 7.10.1
Standard	Hazards and Risks – Hazardous and offensive development	N	General	Hazardous and Offensive Development Application Guidelines: Applying SEPP 33	Section 7.10.2
Standard	Hazards and Risks – Dangerous goods	N			Section 7.10.3
Standard	Hazards and Risks - Flooding	N			Section 7.10.4
Detailed	Hazards and Risks – Groundwater contamination	N	Specific		Section 7.10.5
Detailed	Hazards and Risks – Land contamination	N			Section 7.10.6
Standard	Hazards and Risks – Waste	Y			Section 7.10.7
Standard	Hazards and Risks – Dams Safety	N	General		Section 7.10.8
Standard	Hazards and Risks – Other issues	N	General		Section 7.10.9
Standard	Built Environment – Private Property	N	General		Section 7.11.1
Standard	Built Environment – Public land	N	General		Section 7.11.2

Level of assessment	Matter	CIA[1]	Engagement	Relevant government plans, policies, and guidelines	Scoping report reference
Standard	Built Environment – Public Infrastructure	N	General		Section 7.11.3
Standard	Built Environment – Design quality	N	Specific		Section 7.11.4
Standard	Air – Atmospheric emissions	N	General		Section 7.12.1
Standard	Air – Particular matter	N	General		Section 7.12.2

[1] Cumulative impact assessment



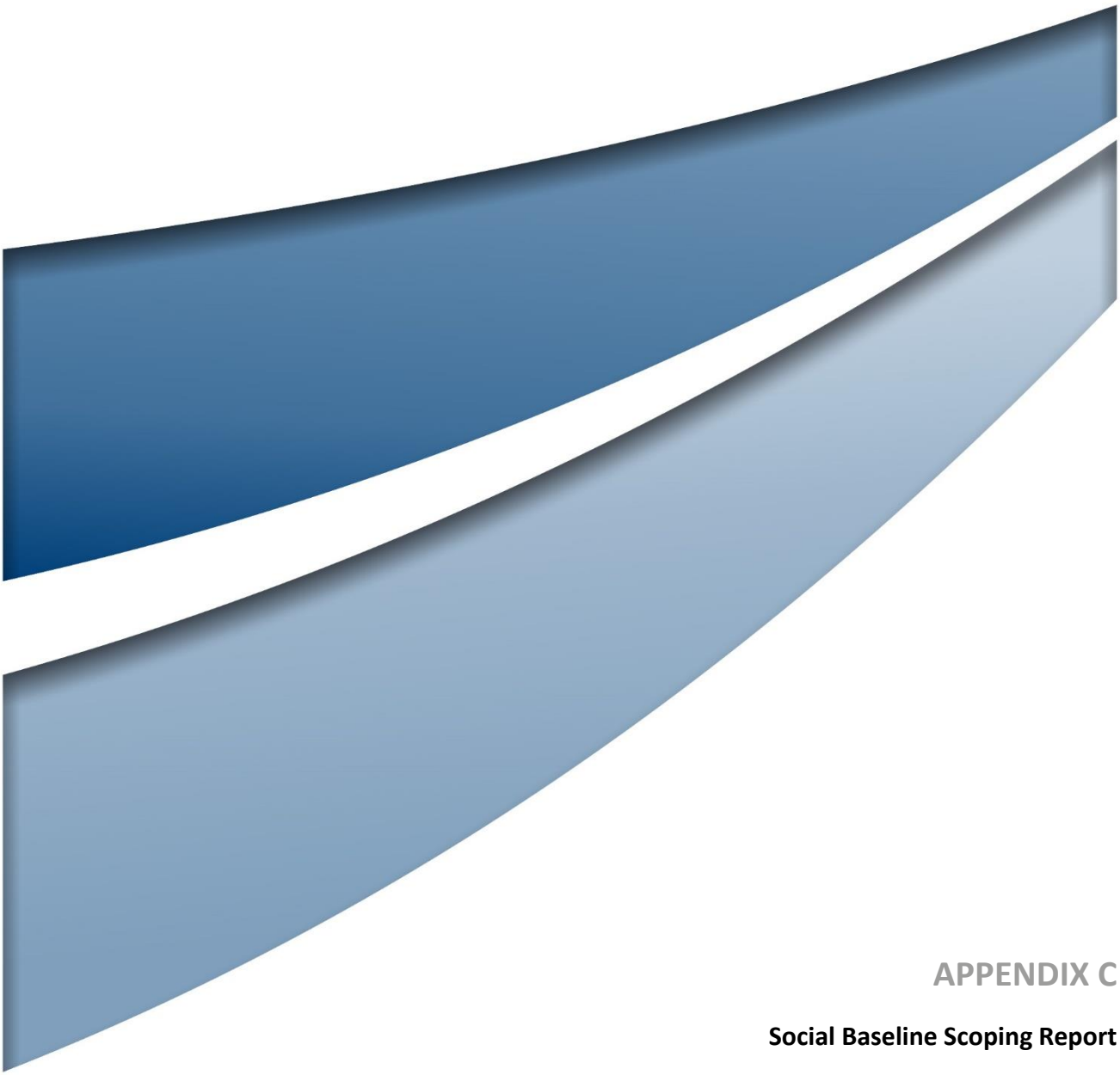
APPENDIX B

Preliminary Biodiversity Database Search Results

Table B1.1 BioNet Search Results for a 10 km x 10 km Search Area: NSW and Commonwealth listed threatened species and endangered populations

Scientific name	Common Name	NSW Status	Commonwealth Status	Records in Search Area (10km x 10km)	Records in, or within 1km of, Project Area
Anthochaera phrygia	Regent Honeyeater	Endangered	Critically Endangered	49	6
Artamus cyanopterus cyanopterus	Dusky Woodswallow	Vulnerable	-	12	1
Callocephalon fimbriatum	Gang-gang Cockatoo	Vulnerable	-	1	-
Calyptorhynchus lathami	Glossy Black-Cockatoo	Vulnerable	-	22	2
Chalinolobus dwyeri	Large-eared Pied Bat	Vulnerable	Vulnerable	23	4
Chthonicola sagittata	Speckled Warbler	Vulnerable	-	51	2
Circus assimilis	Spotted Harrier	Vulnerable	-	1	-
Climacteris picumnus victoriae	Brown Treecreeper (eastern subspecies)	Vulnerable	-	70	6
Cymbidium canaliculatum	*Cymbidium canaliculatum* population in the Hunter Catchment	Endangered	-	33	-
Daphoenositta chrysoptera	Varied Sittella	Vulnerable	-	12	2
Dichanthium setosum	Bluegrass	Vulnerable	Vulnerable	1	-
Diuris tricolor	Pine Donkey Orchid	Vulnerable	-	102	-
Eucalyptus camaldulensis	*Eucalyptus camaldulensis* population in the Hunter catchment	Endangered	-	3	-
Glossopsitta pusilla	Little Lorikeet	Vulnerable	-	46	1
Grantiella picta	Painted Honeyeater	Vulnerable	Vulnerable	4	-
Haliaeetus leucogaster	White-bellied Sea-Eagle	Vulnerable	-	2	-
Hieraaetus morphnoides	Little Eagle	Vulnerable	-	1	-
Hirundapus caudacutus	White-throated Needletail	-	Vulnerable	2	-
Homoranthus darwinioides	(blank)	Vulnerable	Vulnerable	39	7
Leipoa ocellata	Malleefowl	Endangered	Vulnerable	1	-
Lophoictinia isura	Square-tailed Kite	Vulnerable	-	2	-

Scientific name	Common Name	NSW Status	Commonwealth Status	Records in Search Area (10km x 10km)	Records in, or within 1km of, Project Area
Melanodryas cucullata cucullata	Hooded Robin (south-eastern form)	Vulnerable	-	12	-
Melithreptus gularis gularis	Black-chinned Honeyeater (eastern subspecies)	Vulnerable	-	10	1
Miniopterus australis	Little Bent-winged Bat	Vulnerable	-	2	-
Miniopterus orianae oceanensis	Large Bent-winged Bat	Vulnerable	-	15	-
Neophema pulchella	Turquoise Parrot	Vulnerable	-	12	2
Ninox connivens	Barking Owl	Vulnerable	-	4	Recorded during preliminary investigations
Ninox strenua	Powerful Owl	Vulnerable	-	4	-
Nyctophilus corbeni	Corben's Long-eared Bat	Vulnerable	Vulnerable	3	-
Ozothamnus tesselatus	(blank)	Vulnerable	Vulnerable	49	-
Petrogale penicillata	Brush-tailed Rock-wallaby	Endangered	Vulnerable	1	-
Phascolarctos cinereus	Koala	Vulnerable	Vulnerable	5	1 (historical record)
Pomaderris queenslandica	Scant Pomaderris	Endangered	-	5	-
Pomatostomus temporalis temporalis	Grey-crowned Babbler (eastern subspecies)	Vulnerable	-	5	-
Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	Vulnerable	-	3	-
Scoteanax rueppellii	Greater Broad-nosed Bat	Vulnerable	-	7	-
Stagonopleura guttata	Diamond Firetail	Vulnerable	-	28	-
Tylophora linearis	(blank)	Vulnerable	Endangered	1	-
Tyto novaehollandiae	Masked Owl	Vulnerable	-	2	-
Vespadelus troughtoni	Eastern Cave Bat	Vulnerable	-	10	1



APPENDIX C

Social Baseline Scoping Report

umwelt
Environmental & Social Consultants

lightsource bp

SOCIAL IMPACT SCOPING REPORT

Goulburn River Solar Farm

FINAL

December 2021

SOCIAL IMPACT SCOPING REPORT

Goulburn River Solar Farm

FINAL

Prepared by
Umwelt (Australia) Pty Limited
on behalf of
Lightsource bp

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This report was prepared using Umwelt's ISO 9001 certified Quality Management System.

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Abbreviations

Abbreviation	Description
ABS	Australian Bureau of Statistics
BESS	Battery Energy Storage System
BSAL	Biophysical Strategic Agricultural Land
DPIE	NSW Department of Planning, Industry and Environment
EIS	Environmental Impact Statement
EP&A Act	Environmental Planning and Assessment Act, 1979
FTE	Full-time Equivalent
GW	Gigawatts (unit)
The Guideline	Social Impact Assessment Guideline for State Significant Projects
Ha	Hectares (unit)
Kms	Kilometres (unit)
LGA	Local Government Area
MW	Megawatts (unit)
NSW	New South Wales
PV	Photovoltaic
REZ	Renewable Energy Zone
SEAR	Secretary's Environmental Assessment Requirements
SEIFA	Socio-economic Indices for Areas
SIA	Social Impact Assessment
SSC	State Suburb Code
SSD	State Significant Development
Umwelt	Umwelt Australia Pty Ltd

1.0 Introduction

This Social Impact Scoping Report documents the process and outcomes of the scoping phase of the Social Impact Assessment (SIA) undertaken by Umwelt Australia Pty Ltd (Umwelt) for the Goulburn River Solar Farm Project (the Project). The Report forms part of the Project's application for the Secretary's Environmental Assessment Requirements (SEARs) lodged with the NSW Department of Planning, Industry and Environment (DPIE) by Lightsource bp. The Project is considered a State Significant Development (SSD) under Part 4 of the *Environmental Planning and Assessment Act, 1979* (EP&A Act).

This Report has been prepared in alignment with the scoping phase requirements of the NSW DPIE *Social Impact Assessment Guideline for State Significant Projects* (2021) or 'the Guideline'. Following the issuance of SEARs, the Environmental Impact Statement (EIS) for the Project will be prepared and will include a SIA of which this report forms the foundation.

1.1 Project Overview

Lightsource bp propose the development of the Goulburn River Solar Farm, located approximately 36 kilometres southwest of the township of Merriwa, and approximately 200 kilometres to the northwest of the closest capital city of Sydney, in the Upper Hunter Shire, New South Wales (NSW). Other regional population centres nearby include Muswellbrook, Scone, and Mudgee.

The Project Area is proposed on cleared freehold land surrounded by the Goulburn River National Park, which is owned by two private landholders. The Project will involve the construction, operation and maintenance and decommissioning of the solar farm, with operations proposed for 35 to 40 years.

The site is approximately 1,020 hectares and will have a capacity of producing approximately 520-megawatts (MW) of renewable energy. The solar farm is comprised of solar photovoltaic (PV) modules and a battery energy storage system (BESS) to store the energy produced. The energy will be transferred into the existing electricity network utilising the existing transmission infrastructure adjacent to the site.

Additionally, the Project includes associated infrastructure including operation and maintenance buildings, civil works, and electrical infrastructure. The site will be accessed from the northern and southern directions of Wollara Road.

Subject to development approval, construction would commence by mid-2023, with a construction phase of between 18 to 24 months. It is anticipated that between 300-500 jobs would be generated during the construction period, and an ongoing workforce of 10 during operations. Lightsource bp intend to source employees locally where possible to provide opportunities for local job seekers and contractors and to reduce travel time for workers.

Further Project information in relation to the local and regional context can be found in **Section 2.0**.

1.2 Report Purpose

The purpose of this Report is to:

- obtain an understanding of the Project's social locality, including the community's socio-economic and demographic characteristics
- identify stakeholder groups who may have an interest in, or be affected by, the Project

- document outcomes from community consultation undertaken during the scoping phase
- identify issues or opportunities that the Project presents within the social locality
- provide an initial evaluation of predicted social impacts associated with the Project
- consider potential Project refinements in response to identified social impacts
- describe the approach for undertaking the remaining phases of the Social Impact Assessment (SIA).

1.3 Methodology

SIA is an approach to predicting and assessing the likely social consequences of a proposed action and developing options and opportunities to improve outcomes for people. Best practice SIA is participatory and involves understanding impacts from the perspectives of those involved in a personal, community, social or cultural sense, to provide a complete picture of potential impacts, their context, and implications.

1.3.1 Assessment Requirements

This Report has been prepared in accordance with the NSW Government's *Social Impact Assessment Guideline for State Significant Development Applications* (The Guideline) (DPIE, 2021), as part of the initial project development and scoping phase, as illustrated in Figure 1.1.

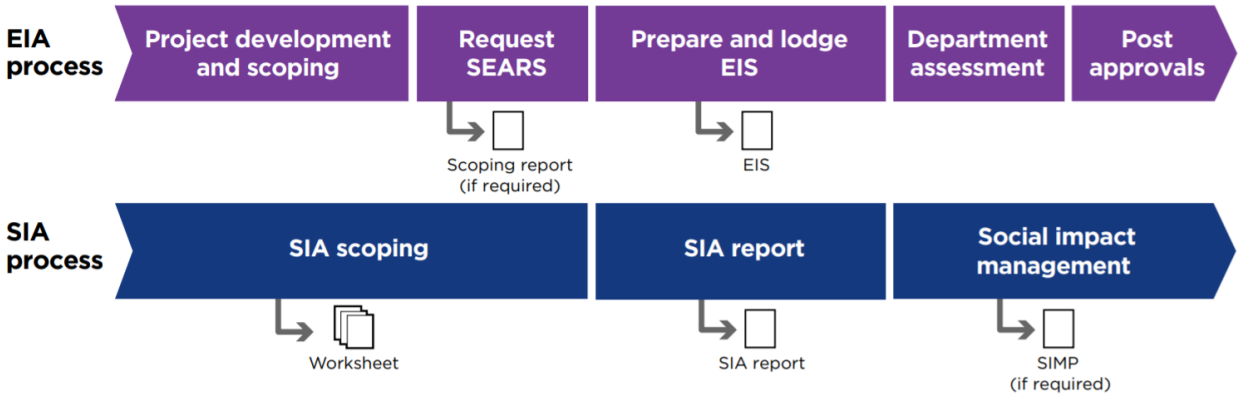


Figure 1.1 SIA and EIA Process Alignment

Source: DPIE, 2021

This Report has been informed by community and stakeholder engagement, which affords opportunities to effectively assess and integrate social outcomes within the detailed Project planning, design, and assessment phase. As is the case with any type of change, some individuals or groups within the community may benefit, while others may experience negative impacts. If negative impacts are predicted, it is the role of the SIA to determine how such impacts may be addressed effectively to reduce the degree of disruption to those affected. If positive impacts are predicted, the aim of the SIA is to maximise these opportunities and identify how they might be further enhanced and realised.

According to the Guideline, and as outlined in **Figure 1.2**, social impacts can be grouped according to a number of different categories and may involve impacts and changes to people's way of life, community, accessibility, culture, health and wellbeing, surroundings, livelihoods, and decision-making systems.

Figure 1.2 DPIE Social Impact Categories

Source: Department of Planning, Industry and Environment, 2021 © Umwelt, 2021

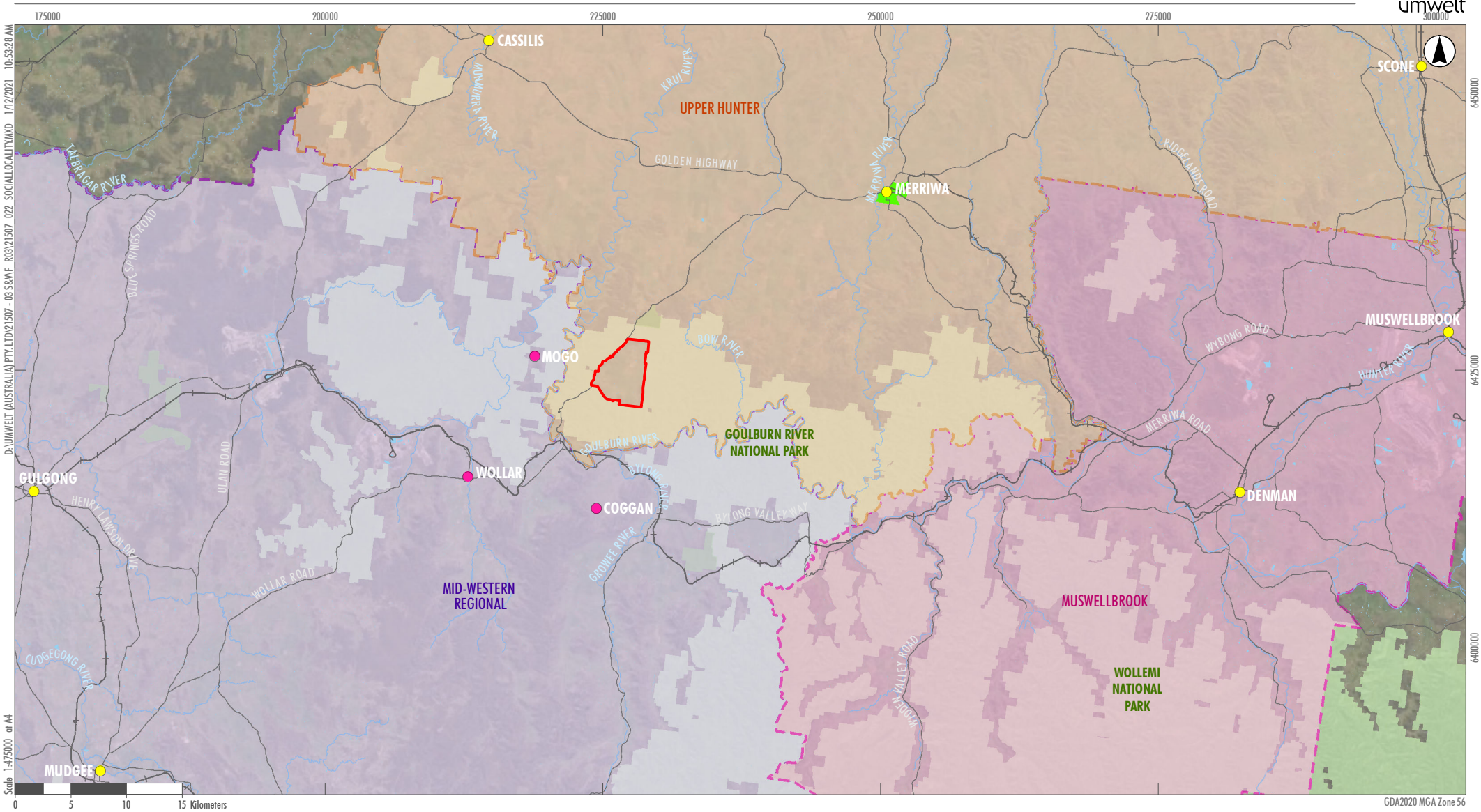
1.4 Defining the Social Locality

Statistical areas defined by the Australian Bureau of Statistics (ABS), as well as the land tenure composition of properties in or nearby the Project Area have been used to determine the social locality (or 'area of social influence'), as represented in **Figure 1.3**. The primary communities of interest that comprise the social locality for the purpose of this assessment are outlined in **Table 1.1**.

Table 1.1 Communities of interest in the social locality

Community of interest and purpose	Statistical area
Localities proximate to the Project	- Coggan - Wollar - Mogo
Key townships proximate to the Project	- Merriwa - Cassilis - Mudgee - Gulgong - Rylstone - Denman - Muswellbrook - Scone
Local Government Areas (LGAs)	- Upper Hunter Shire LGA - Mid-Western Regional LGA - Muswellbrook LGA
Region	- Hunter - Mid-Western
State averages have been used for comparative purposes	- NSW

The extent of influence of a project, its impacts, and associations may change as projects and communities develop and evolve over time. Consequently, the social locality may be adapted, minimised, or extended beyond the parameters identified in **Table 1.1** at subsequent stages of Project planning and assessment, to include locations where construction workforces may be based and where suppliers and/or materials may be sourced for the Project.



Legend

- Project Area
- Mid-Western Regional Local Government Area
- Muswellbrook Local Government Area
- Upper Hunter Local Government Area
- Merriwa UCL Statistical Area
- Proximate Localities
- Townships
- NSW State Forests
- NSW National Parks
- Road
- Railway
- Creeks/ Rivers
- Waterbodies

FIGURE 1.3

Social Locality

Image Source: ESRI Basemap (2021) Data source: NSW DFSI (2021)

1.5 Social Baseline Profile

A baseline social profile gathers knowledge from both primary and secondary data sources to increase understanding of the existing social environment in which a project is proposed, and of potentially affected stakeholders and communities.

The social baseline profile is a foundational component of a SIA, as it provides the basis and foundation for which social impacts associated with the Project may be predicted, assessed, monitored, and managed over time.

The Guideline (DPIE, 2021) outlines the key components of a social baseline profile, to include:

- The scale and nature of the project
- Who may be affected, including any vulnerable or marginalised groups
- Any built or natural features on or near the project
- Relevant social, cultural, and demographic trends and other change processes
- The history of the proposed project and/or development in the area, including community response to previous change.

1.5.1 Sustainable Livelihoods Approach

To understand the communities of interest to the Project and to evaluate their resilience and adaptive capacity to change, the social baseline has utilised the Sustainable Livelihoods Approach or 'community capitals' analysis (U.K. Department for International Development [DFID] 1999).

According to this framework, people seek to maintain their livelihood within a context of vulnerability. Specifically, threats to their livelihood include shocks (such as sudden onsets of natural disasters, problems, conflicts, and economic crises), trends (for instance, those relating to the economy, health, resources, and governance) and seasonality (such as cyclical fluctuations in prices or employment). People draw upon these assets to build and maintain their livelihood. A livelihood is considered sustainable '…*when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base*'.

The DFID (1999) approach draws on broad categories of community capital as a fundamental basis to identifying and further enhancing community capacity and resilience. This methodology has been further developed by Coakes and Sadler (2011) to reflect the following key capitals - human, social, natural, physical, economic, and political. The vulnerability in each capital area can be assessed through the selection of a suite of indicators selected to assess a community's vulnerability to change, or conversely, their adaptive capacity. Elements of each capital area are further outlined in **Figure 1.4**.

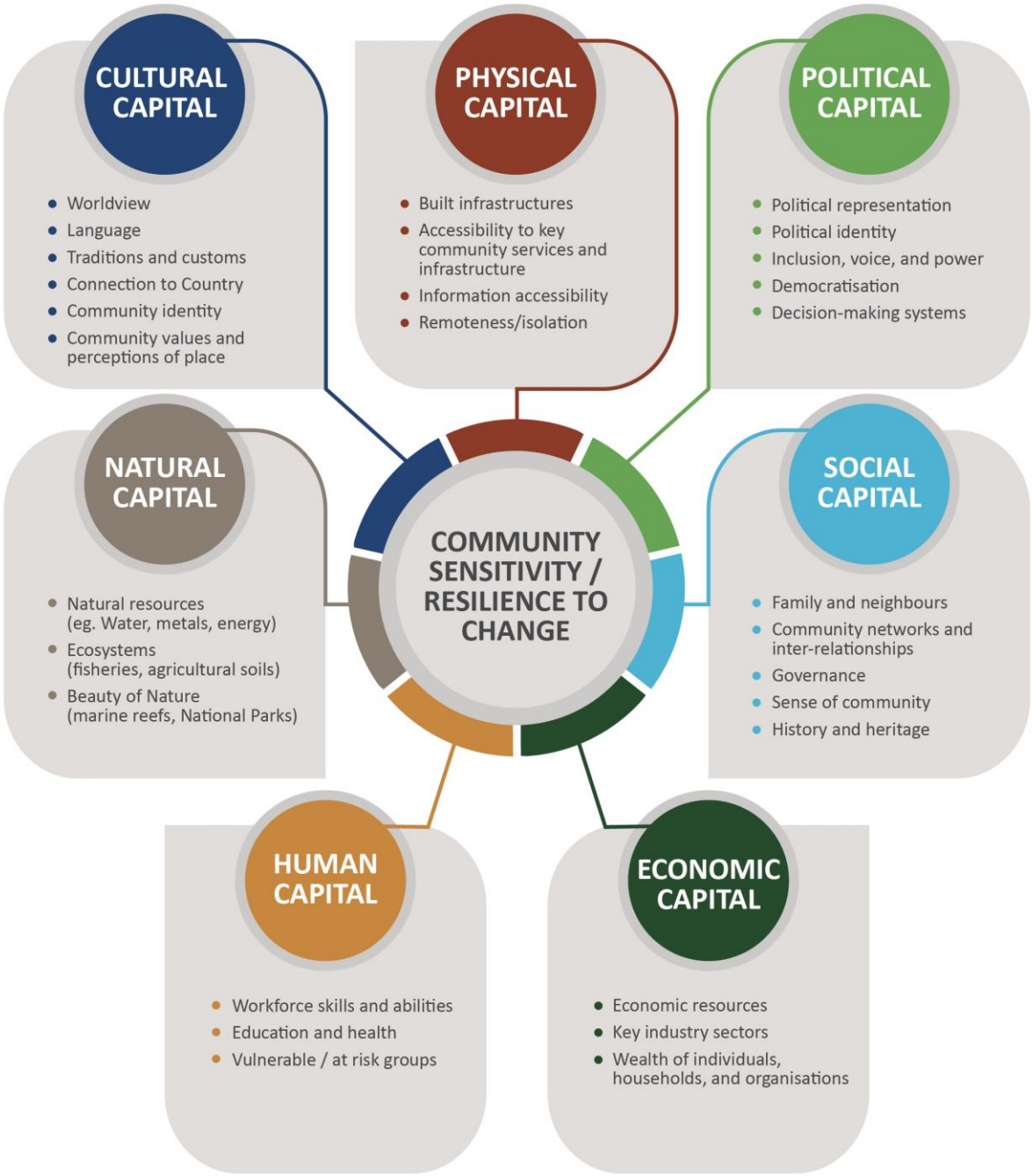


Figure 1.4 Community Capitals Framework (Coakes & Sadler, 2011)

1.5.2 Data Sources

The social baseline within this report has made use of a range of data sources to understand the socio-economic, cultural and demographic characteristics of the communities within the Project's locality. The social profile is used as a basis to determine how the Project may affect different aspects of people's lives - the Project's social impacts (refer to **Figure 1.2**). Data for the social baseline profile has been gathered and summarised from publicly available secondary datasets, including the most recent Australian Census (2016), as well as through a review of local media, government plans and strategies and other literature as it relates to the social locality.

Statistical and comparative analysis using ABS data has been undertaken at the LGA level to capture key characteristics and trends across local communities. Township (UCL) level data for the nearest town of Merriwa has also been used. Key indicators compiled within the social baseline and the data sources utilised are outlined in **Table 1.2**.

Table 1.2 Social baseline profile indicators and data sources

Capital	Indicator	Data Source
Natural	- Land use profile - Vulnerability to natural disaster or severe climate events - Rate of tourism and recreation based on natural resources - Community values associated with natural or built environment	NSW Land Use 2017 (DPIE, 2020) Regional Statistics by LGA (ABS, 2018) Local Government Areas Council Strategic Planning Documents Goulburn River National Park and Munghorn Gap Nature Reserve Plan of Management (NSW NPWS, 2003) Tourism Research Australia Local Government Area Profiles (2016)
Political	- Existing political and governance structures at local, state, and federal levels - Representation and governance of Aboriginal and Torres Strait Islander people - Existing public participation systems - Existence of Project-specific community consultation strategy and feedback and response mechanisms	State representative and electoral information (Parliament of New South Wales, n.d.; Electoral Commission NSW, 2020)
Human	- Population size by gender, and by age - Population trends and projections - Median age - Aboriginal population size and proportion - Population diversity (proportion of population born overseas / languages spoken at home) - Highest level of formal education attainment - SEIFA Index of Education and Occupation - Public health status including self-assessed fair or poor health, level of psychological stress, rate of hospital admissions, life expectancy	ABS Community Profiles (2006, 2011, 2016) DPIE population projections (2019) MySchools (ACARA, 2020) Social Health Atlas of Australia (PHIDU, 2021) MyHospitals (AIHW, 2021)

Capital	Indicator	Data Source
Social	- Household size and composition - Volunteering rates - Incidents and rates of selected crimes and top crimes committed - Population mobility/stability (proportion of population with a different address 1 and 5 years ago) - Index of Relative Advantage and Disadvantage (SEIFA)	SEIFA Indexes for Australia (ABS, 2018) NSW Bureau of Crime (2021)
Economic	- Proportion (%) of the labour force that are: employed full-time, part-time, unemployed, and trends - Key industries of employment - Median household income - Median mortgage repayment - Median weekly rent - Level of housing stress (median housing costs as a proportion of median household income) - Indices of economic resources (SEIFA)	ABS Community Profiles (2016) Rental vacancy rates (REINSW, 2021) SEIFA Indexes for Australia (ABS, 2018) Herfindahl Index (ABS Tablebuilder Pro, 2016)
Cultural	- Native Title claims and/or determinations - Aboriginal ethnography and histories - Aboriginal heritage places - European heritage places - Cultural values - Language, dialect, and belief-systems	ABS Community Profiles (2006, 2011, 2016) Register of Native Title Claims (National Native Title Tribunal, 2021) Local Government Areas Council Strategic Planning Documents Heritage Management Systems (Heritage NSW, 2021)
Physical	- Housing typology – proportion of occupied private dwellings that are: owned with/without a mortgage, rented, public housing - Number of dwellings by type (housing stock) - Commuting distances to work - Private-car dependency (car ownership by household) - Availability of health and educational facilities - Availability of short-term accommodation - Health services and infrastructure (proximity of health services, resident to GP ratio, availability of specialist services) - Access to Internet from dwelling	ABS Community Profiles (2006, 2011, 2016) SEIFA Indexes for Australia (ABS, 2018) Central West and Orana Regional Plan 2036 (NSW Government, 2016) Local Government Areas Council Strategic Planning Documents MyHospitals (AIHW, 2021) NSW State Tourism Statistics (Destination NSW, 2016, 2020) Census of Population and Housing: Commuting to Work (ABS, 2016

1.6 Stakeholder Identification

SIA involves the participation and collaboration of people who have an interest in, or those that are affected by, a project. As Burdge (2004) outlines, stakeholders may be affected groups or individuals that:

- live, work, or recreate near the Project
- have an interest in the proposed action or change
- use or value a resource associated with the Project
- are affected by the Project e.g., may be required to relocate because of the Project.

A stakeholder identification process was undertaken during the scoping phase for the Project to support the planning and delivery of community consultation and stakeholder engagement to inform the SIA. This process involved identifying stakeholders with an interest in the Project, or those directly and indirectly affected by the Project to identify potential issues or opportunities (refer to **Appendix A**).

Stakeholder Group	Mechanism	Timing	Number of People in Attendance/ Respondents
Information Provision			
Broader community	Project website launch	27 August 2021	n/a
Broader community	3 x local media statements	15 October 2021	n/a
Nearby residents and landholders **Broader community**	Maildrop of Project Information Sheet to localities of Merriwa, Cassilis, Wollar, Cogan and along Wollara Road.	15 October 2021	3,226
Broader community	Email correspondence with invitation to Community Information Session	13 October 2021	11
Nearby residents and landholders	Phone call attempts or correspondence	October 2021	27
Consultation			
Federal Government – Department of Agriculture, Water and the Environment	Project briefing	10 September 2021	3
State Government – NSW Department of Planning, Industry and Environment (DPIE)	Project briefing	21 September 2021	1
State Government – NSW National Parks and Wildlife Service	Project briefing	15 September 2021	1
Local Government	Project briefing	21 October 2021	4
Nearby residents and proximal landholders	Informal phone discussions	October 2021	8

Stakeholder Group	Mechanism	Timing	Number of People in Attendance/ Respondents
Nearby residents and proximal landholders	Feedback survey	October and November 2021	5
Broader community	Community information sessions (2)	28 October 2021 30 October 2021	18
Local Government	Personal meeting and site visit	2 November 2021	1
Local Government - Councillors	Project briefing	9 November 2021	4
Host landholders	Personal meeting	2 November 2021	2
Community Group	Personal meeting	1 November 2021	1
Community Group	Personal meeting	2 November 2021	8
Community/Industry Group	Personal meeting	3 November 2021	1
Traditional Owners	Personal meeting	26 November 2021	1

Subsequent phases of the SIA will seek continued involvement across the stakeholder groupings identified. Further detail of the stakeholders consulted is outlined in **Section 1.7**. Additional detail on the approach and plans for stakeholder engagement and community consultation can also be found in **Appendix A**.

1.7 Stakeholder and Community Engagement

As outlined in the Community Consultation and Stakeholder Engagement Strategy (Umwelt, 2021), a number of engagement mechanisms have been utilised to obtain the input of various stakeholder groups during the scoping phase, and to inform the development of this SIA Scoping Report. Information provision and consultation activities that have been undertaken are outlined in **Table 1.3** below.

Table 1.3 Engagement undertaken during scoping phase

Figure 1.5 represents the private properties that were contacted (or where contact was attempted) during this first round of consultation.

Discussion guides used for the community consultation can be found in **Appendix C**.

Further engagement with key stakeholders and community residents will be undertaken in the impact assessment and evaluation phase.

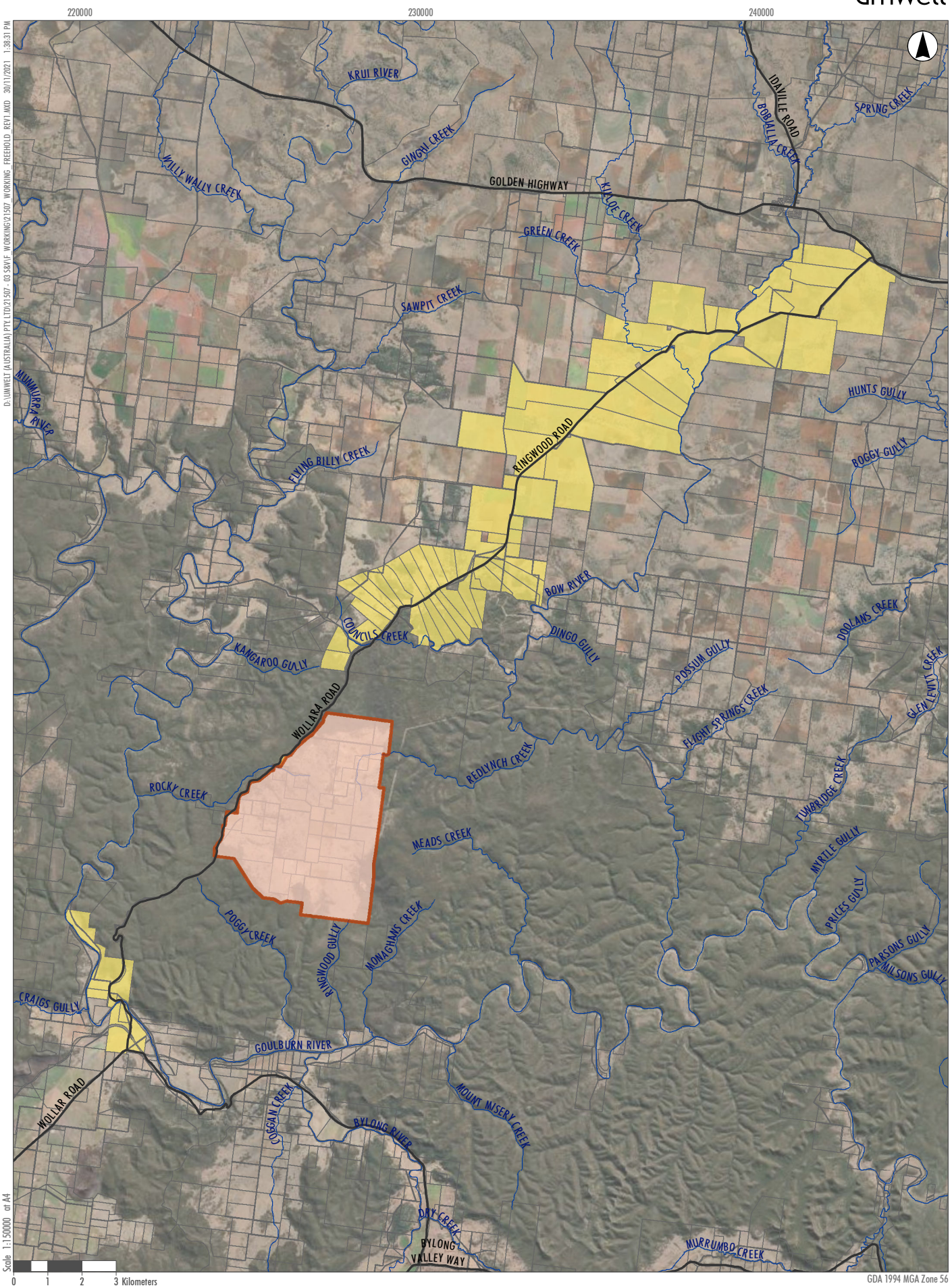


FIGURE 1.5

Properties Contacted for Scoping Phase Consultation

Image Source: ESRI Basemap (2021) Data source: NSW DSFI (2021)

1.8 Issues Scoping and Preliminary Impact Evaluation

Quantitative and qualitative information collected through engagement activities has been compiled and analysed to inform the identification of potential perceived social impacts associated with the Project (refer to **Section 3.0**), from the perspectives of affected parties, and to afford the preliminary evaluation of social impacts.

The Social Scoping Worksheet (DPIE, 2021) is a decision support tool to consider the social impacts of a project and is used to demonstrate how issues scoping will inform the level of assessment undertaken for each identified impact in the SIA.

Each project activity is assessed by its potential impacts on people, whether previous investigation of the impact has been undertaken, the potential for cumulative impacts, and possible mitigation or enhancement measures to reduce negative impacts and enhance positive impacts. Social impact characteristics that have been considered in this preliminary evaluation include:

- extent – geographical area and stakeholders identified that are affected directly, indirectly, or cumulatively by the impact
- duration – the timeframe over which the impact occurs
- severity or scale – likely scale or degree of change from the existing condition because of an impact (e.g., mild, moderate, severe)
- intensity or importance – sensitivity susceptibility or vulnerability of people, receivers or receiving environments to adverse changes caused by the impact, including value or importance to the community, the extent to which it is tied to their identity and their capacity to cope with or adapt to change.

Based on an assessment of these impact characteristics, the likelihood and magnitude of the potential impact (positive or negative) and its occurrence across differing stakeholder groups is determined making use of the impact significance matrix in the Guideline (DPIE, 2021).

		Magnitude level				
		1 Minimal	2 Minor	3 Moderate	4 Major	5 Transformational
Likelihood level	A Almost certain	Medium	Medium	High	Very High	Very High
	B Likely	Low	Medium	High	High	Very High
	C Possible	Low	Medium	Medium	High	High
	D Unlikely	Low	Low	Medium	Medium	High
	E Very unlikely	Low	Low	Low	Medium	Medium

Figure 1.6 Social Impact Significance Matrix

2.0 Social Baseline Profile

This section describes the profile of the communities in the social locality. It provides a compilation of the defining characteristics of the communities considering a range of indicators as outlined in **Table 1.2**. The social baseline is a critical component of SIA as it provides the foundations from which social impacts associated with the Project may be predicted and assessed, with the following components considered:

- **geographic and spatial** – identification of communities of interest and relevant stakeholders in the social locality and their respective socio-economic and demographic characteristics and values
- **governance** – an understanding of the relevant governance structures including those of traditional owners and local, State and Federal government jurisdictions
- **development context –** a review of the other major projects and other development factors, as well as previous experiences with comparable projects, to ascertain the response of local communities to potential change processes
- **key community values, challenges, and priorities** – identification of community values through both primary and secondary sources, documentation of current community needs or issues, and goals or priorities, as identified in key strategic planning documents, regional plans or studies as well as within local and regional media
- **level of vulnerability or resilience** across the communities of interest and people's capacity to cope with change.

The following section outlines the strategic planning and regional development context of the Project.

2.1 Strategic Planning Context

The current Project is well-aligned with current policy priorities of both the Federal and State Governments.

Australia's commitment at the international level to the 2015 Paris Climate Accord has influenced the growth of and investment in the renewable energy sector across the country in recent years, with further commitments to reduce national greenhouse gas emissions by 26-28% below 2005 levels by 2030 and achieve net zero emissions by 2050 committed to as part of the 2021 UN Climate Change Conference.

In 2013, the NSW Government released the NSW Renewable Energy Action Plan outlining the State Government's intention to work with communities and the renewable energy industry to increase renewable energy generation across the State. The Plan was implemented alongside the Energy Efficiency Action Plan, with the successful implementation of the Plan completed in December 2018.

In 2020, the NSW Government announced plans to invest $32 billion into renewable energy over the next decade as part of its NSW Electricity Infrastructure Roadmap. The Government noted the investment would generate 6,300 construction jobs and 2,800 ongoing jobs, along with $1.5 billion in lease payments for landowners, especially in regional NSW, as a result of the development of wind and solar farms.

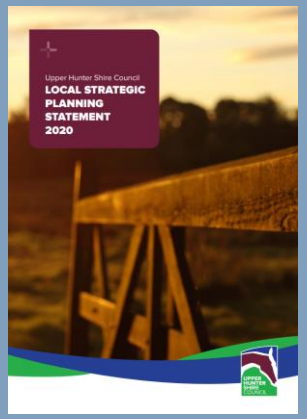
The Hunter region also contains critical transmission networks connecting key energy suppliers to consumers across the State. Approximately 30% of NSW's current energy supply is currently sourced within the Hunter region from the Bayswater and Liddell Power stations alone (NSW Government, 2018).

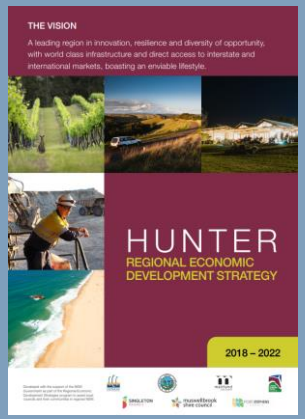
Table 2.1 contains an overview of local and regional strategic plans relevant to the social locality to inform an understanding of the development priorities and interests for the region.

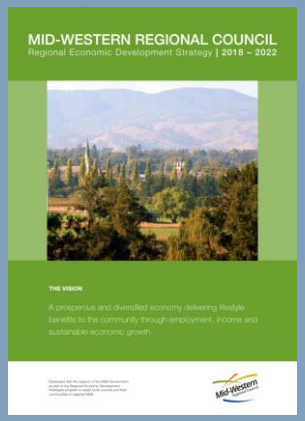
Table 2.1 Strategic plans and their relevance to the Project

Plan	Overview and Relevance to the Project
Hunter Regional Plan 2036 (NSW Government, 2016) 	Outlines the goals and actions for the Hunter Region to achieve a sustainable future; the plan applies to 10 local government areas including the Upper Hunter and Muswellbrook Shires. The Plan establishes the following 4 goals: 1. The leading regional economy in Australia 2. A biodiversity-rich natural environment 3. Thriving communities 4. Greater housing choice and jobs Growth and diversification in the energy sector is a key direction noted in the plan. Priority actions for the energy sector include: - Diversify and grow the energy sector by working with stakeholders, including councils, communities, and industry - Enable Opportunities for renewable energy industries by reviewing local planning controls. - Promote opportunities arising from the closure of coal-fired power stations that enable long term sustainable economic and employment growth in the region. The Upper Hunter is recognised as undergoing a transition with major transformation occurring in power generation and emerging technologies. Priority actions for the Upper Hunter include: - Prepare for the diversification and innovation of the economy in response to industry restructuring in coal and power generation and the growth in new high-technology primary industry. - Identify the land and infrastructure requirements to develop the Hunter's coal and alternative energy resources. - Protect the availability and quality of resources to sustain agricultural industries in the region. - Improve land use certainty and enable innovation by reviewing and amending planning frameworks. - Plan for water security to shape regional infrastructure investment and economic development. The towns of Scone and Muswellbrook are identified as strategic centres for the region, providing educational, administrative, government, retail, and commercial functions. The regional priorities for these areas include: - Review land use compatibility. - Review Viticulture Critical Industry Cluster development to achieve a balance between scenic amenity and ongoing tourism. - Support diversification of the energy and agricultural sectors. - Protect the Equine Critical Industry Cluster. - Protect Biophysical Strategic Agricultural Lands and other important agricultural lands. - Support the tourism economy. - Encourage the establishment of employment-generating rural industries, value-adding industries, and intensive agriculture. - Support the diversification of the energy sector and ongoing extractive industries.

Plan	Overview and Relevance to the Project
Central West and Orana Regional Plan 2036 (NSW Government, 2016) 	Outlines the goals and actions for the Central West and Orana Region to achieve a sustainable future; the plan applies to 19 local government areas including the Mid-Western Region LGA, being the closest to the Project. The Plan identifies the following 4 goals for the Region: 1. A growing and diverse regional economy 2. A region with strong freight transport and utility infrastructure networks that support economic growth 3. A region that protects and enhances its productive agricultural land, natural resources, and environmental assets 4. Strong communities and liveable places that cater for the region's changing population. The Plan also characterises the Mid-Western Regional LGA as being well known for its built heritage, food and wine tourism, and mining. The regional importance of the area is emphasised throughout the plan, with particular reference to supporting the mining and resources sector and associated businesses. Increasing renewable energy generation is a key direction in the Plan, with actions identified to achieve this direction including: - Identify locations with renewable energy generation potential and access to the electricity network. - Facilitate small-scale renewable energy projects using bioenergy, solar, wind, small-scale hydro, geothermal or other innovative storage technologies through local environment plans. - Promote best practice community engagement and maximise community benefits from all utility-scale renewable energy projects. The Plan highlights the need across the region for diverse accommodation options to support mining workforces, as well as other seasonal and itinerant workers (in large-scale infrastructure, renewables and agriculture).
Upper Hunter Council Community Strategic Plan 2027 (Upper Hunter Shire Council, 2017) 	The Upper Hunter Community Strategic Plan provides a road map for the development of the community over a shared 10-year vision to 2027. The vision for the CSP is: *A Quality Rural Lifestyle – in a vibrant, caring, and sustainable community* The Plan identifies the following key community priorities: 1. Increased and innovative tourism and visitor opportunities 2. Rural lifestyle and country feel are valued and protected 3. Well-maintained, safe, reliable, and additional infrastructure 4. A stronger economic base to attract and retain residents, particularly youth 5. Upper Hunter has improved and well-maintained roads and bridges 6. Increased focus on local business, shop occupation and revitalisation of town centres 7. Reliable and safe water supply 8. Protect the natural environment A number of strategies are identified to achieve the community priorities, with key priorities of interest to the Project including: - Encourage a diverse economy whilst promoting and preserving our agriculture and equine industries. - Encourage and support innovative industry and a diversity of businesses that provide a range of services and employment opportunities for current and future generations - Facilitate and provide access to a range of local educational and training opportunities that complements the economy. - Maintain and advocate, facilitate and/or provide traffic management and public transport facilities to meet the needs of the community.

Plan	Overview and Relevance to the Project
Towards 2030: Mid-Western Region Community Plan (Mid-Western Regional Council) 	The Mid-Western Regional Council's Community Plan identifies the community's aspirations for the area. The Vision of the Plan is: *A prosperous and progressive community that we are proud to call home* The Plan identifies the following key community priorities: 1. Strong budget and economy 2. Building infrastructure 3. Protecting the vulnerable 4. Better services 5. Safer communities A number of strategies are identified to achieve the community priorities. Key priorities of interest to the Project include: - Ensure land use planning and management enhances and protects biodiversity and natural heritage - Support the attraction and retention of a diverse range of businesses and industries - Encourage the development of a skilled and flexible workforce to satisfy local industry and business requirements - Support projects that create new jobs in the Region and help to build a diverse and multi-skilled workforce - Build strong linkages with institutions providing education, training and employment pathways in the Region - Provide a roads network that balances asset conditions with available resources and community needs.
Upper Hunter Shire Council Local Strategic Planning Statement 2020 	The Local Strategic Planning Statement (LSPS) is the Upper Hunter Shire Council's plan for the community's social, environmental, and economic land use needs over the next 20 years. The following themes and planning priorities of relevance are identified in the LSPS: 1. Sustainable Development: - Avoid long-term degradation of natural ecosystems - Planning for climate change - Facilitate the use of renewable energy 2. Caring Community: - Planning anticipates and responds to the rapidly ageing nature of the population 3. Rural Economy - Promote sustainable primary industry - Protect agricultural land - Agriculture is the largest most visible lad use - Provide a sufficient supply of land to accommodate employment generating activities 4. Vibrant towns - Encourage economic diversification The town of Merriwa is identified as a key area for the diversification of the NSW's energy resources sector. Managing the growth and change of the town over the long-term is a priority. The LSPS also highlights the following actions to facilitate the use of renewable energy: 1. Facilitate wind farm development in the Upper Hunter and Liverpool Range areas, and any other potential new renewable energy ventures by developing a public position supporting renewable energy development. 2. Support the investigation of renewable energy opportunities throughout the region and infrastructure requirements

Plan	Overview and Relevance to the Project
Our Place 2040: Mid-Western Regional Local Strategic Planning Statement (Mid-Western Regional Council, 2020) 	The Mid-Western Regional LSPS sets out the 20-year vision for land use planning in the Mid-Western Regional Council LGA. The vision for the plan is: *To provide for sustainable growth and development, having regard to the Region's unique heritage, environment, and rural character, and to support agricultural enterprises and the Region's economic base* The following planning priorities are identified: - Maintain and promote the aesthetic appeal of the towns and villages within the Region - Provide infrastructure and service to cater for the current and future needs of our community - Minimise the impact of mining and other development on the natural environment - Support the attraction and retention of a diverse range of businesses and industries - Identify resources and infrastructure required to drive investment and economic growth - Support the expansion of essential infrastructure and services to match business and industry development - Develop a regional transport network. Renewable energy development is considered within the planning framework where it is proposed in appropriate areas that avoids impacts on the scenic rural landscape and preserves valuable agricultural land. Regarding workforce provision, future growth and development in the region will drive the demand for a new skilled workforce. Skilled workers such as engineers, builders, tradespeople, child and health professionals, are expected to be in highest demand over the near future to cater for new major projects.
Hunter Regional Economic Development Strategy (Supported by the NSW Government, 2018) 	The Hunter Regional Economic Development Strategy articulates a framework for identifying actions crucial in achieving the following vision for the Hunter region: *A leading region in innovation, resilience, and diversity of opportunity, with world class infrastructure and direct access to interstate and international markets, boasting an enviable lifestyle.* The following core strategies are identified: a. Improve inter and intra-connectivity in the Region to boost business opportunities in the 'engine' industries of Agriculture, Mining, and Manufacturing b. Manage transitions and risks to the Coal Mining and Electricity Generation Sectors c. Improve infrastructure, services, and amenities The Strategy recognises 'Energy Generation' (comprising existing power stations, high voltage transmission, and grid and gas infrastructure) as an industry cluster. It also acknowledges the transition taking place in the region, and is planning for other opportunities (including wind, solar, biofuels, and hydro), following the schedules closure of Liddell Power Station in 2022 and Bayswater Power Station in 2035. Managing the transitions and risks to the coal mining and electricity generation sectors is therefore a key focus area in diversifying the Region's economy. A number of key infrastructure priorities are identified to support this, including: - Manage potential land-use conflicts arising from mining expansions - Develop land-use plans for the Region (specially to provide investment certainty to the wine and equine industry) - Support transition to power generation - Support transitioning and expansion of the workforce

Plan	Overview and Relevance to the Project
Mid-Western Regional Council Regional Economic Development Strategy (2018-2022) (Balmoral Group Australia Pty Ltd on Behalf of Mid-Western Regional Council) 	The Regional Economic Development Strategy articulates a framework for identifying actions crucial in achieving the following vision for the Mid-Western Regional Council area: *A prosperous and diversified economy delivering lifestyle benefits to the community through employment, income, and sustainable growth* Relevant aims to the Project include: a. Grow industry clusters around mining, manufacturing & agriculture – Healthy environment for agricultural processing, metals and related manufacturing, and mining and agricultural support services b. Support the attraction and retention of an increased number of diverse businesses and industries. Within these aims are a number of identified priorities, priorities of relevance to the Project include: - Maintaining the quality of the inter-regional road and air networks; with the Bylong Valley Way Road project taking the highest priority, and Wollar Road upgrades also being important - Support for Technical training to ensure a steady supply of workers - Strategies to lower the cost of electricity in the Region to support businesses should be a priority
Upper Hunter Economic Diversification Action Plan: Implementing Priorities (NSW Government, 2018) 	The Upper Hunter Economic Diversification Action Plan sets priorities for business growth and sustainable economic transitions in the region. This Plan is driven by the need to plan for global and regional economic shocks, and to support new emerging industries. One key opportunity identified is: - Working with power asset owners, industry and research partners to foster growing renewable energy capacities and support agribusiness development The following items are identified in the Plan to achieve a successful transition for the power and energy sector: 1. Business - Transitions: generation capacity; existing workforces; future site use; dispatchable renewable power; and circular bioeconomy - Investment: existing capacity; new facilities; renewables; R&D/innovation 2. Industry - Maintain required generation capacity across regional, state, and national grids - Invest in renewable and smart technologies - R&S support for Hunter Research Centres

2.2 Regional Development Context

There are several other large-scale projects which have been recently approved for development, or currently in a planning phase across the social locality. Such developments may further intensify impacts experienced by local communities across the region or could result in cumulative changes to the community when considered in conjunction with the Project; particularly in relation to impacts associated with concurrent construction phases.

Table 2.2 provides an overview of other large-scale projects that are proximal to the Project and at comparable stages of development.

Table 2.2 Other major projects in the social locality

Project Name	Sector	Proximity to Goulburn River Solar Farm	Overview	Status	Social Impact Considerations
Central-West Orana REZ Transmission (Transgrid, 2021)	Infrastructure	At its closest, the TransGrid Project is 15km north of the Project Site.	Proposed instalment and operation of new electricity transmission infrastructure as part of the Central West Orana REZ. The proposed transmission lines will run northwest from the existing network near Merriwa, passing south of Dunedoo, before heading south-west to connect to the existing network east of Wellington. There is also an option to extend further south near Lake Burrendong. Wollar substation will be upgraded as part of the project. The current study corridor is 180 km long and 3-6 kilometres wide. The final transmission line easements will be either 60 - 80 metres wide.	Project feasibility and route planning ongoing. Construction planned to commence at the end of 2022.	Construction workforce: 3,900 jobs during peak construction Landowner and community consultation ongoing. Social impact considerations pending.
Bowdens Silver, Bowdens Silver Pty Limited (Umwelt, 2020)	Mining and Extractives	Project located 45km south-west of the proposed Goulburn River Solar Farm Project	Project comprises the development of an open cut silver mine and associated infrastructure 26 km east of Mudgee and approximately 2-3 km northeast of the town of Lue. When fully operational the project will have a maximum annual ore extraction of approximately 2.07 Mt.	EIS submitted Response to public submissions report being prepared in 2021	246 on-site workers and 74 off-site workers during construction, and between 192 – 228 workers over 15 years for the operational workforce. Economic benefits to local community Impacts on human health and social amenity; dust, noise, vibrations, and visual disturbances

Project Name	Sector	Proximity to Goulburn River Solar Farm	Overview	Status	Social Impact Considerations
Stubbo Solar Farm (UPC\AC Renewables, 2021)	Renewable Energy	Project is 48km west of the proposed Goulburn River Solar Farm Project.	Development of a 400MW solar farm, with battery storage of up to 200MWH. The project is located between Blue Springs Road and Barneys Reef Road, approximately 10km north of Gulgong.	Approved June 2021 Construction planned to commence early 2022	Construction workforce: 400 direct jobs Operational workforce: 10 ongoing jobs Potential impacts to existing and future land use. Impacts/disturbance to Aboriginal artefacts Impacts to landscape character and visual amenity. Operational and construction noise and vibration Increased road traffic movements, and associate impacts to roadways. Positive socio-economic impacts such as employment opportunities, local procurement, and a diversifying economy. Cumulative impacts associated with other renewable energy projects.
Barneys Reef Wind Farm (RES, 2021)	Renewable Energy	Proposal is located 50km west of the proposed Goulburn River Solar Farm Project.	Proposed 440MW wind farm consisting of 63 turbines, a BESS, and associated infrastructure.	SEARs issued September 2021 EIS preparation ongoing Construction planned to commence 2023	Construction workforce: 340 direct jobs; operational workforce: 10 ongoing jobs Changes to the landscape's visual character Increased traffic and road safety risks Changes to local population and increased demand for local services

Project Name	Sector	Proximity to Goulburn River Solar Farm	Overview	Status	Social Impact Considerations
Mangoola Continued Operations Project, Glencore (Umwelt, 2019)	Mining and Extractives	Project located 55km east of the proposed Goulburn River Solar Farm.	The Project involves the extension of open cut mining at Mangoola Coal Mine to a new mining area immediately north of the existing operation. The Project would extract approximately 52 million tonnes of additional run-of-mine coal.	Project approved April 2021	Proximal property value impacts Impacts to sense of community, lifestyle, and local amenity Construction traffic impacts to road safety and road conditions. Physical health conditions resulting from dust pollution Mental health conditions due to noise, stress and anxiety. Employment and community investment.
Liverpool Range Wind Farm (Tilt Renewables, 2021)	Renewable Energy	Project is 55km to the north of the proposed Goulburn River Solar Farm Project.	Proposed 1000MW wind farm project. Proponent is currently investigating modification approval to increase the maximum tip height of the turbines to 250m, decrease in maximum number of turbines from 267 to 217, include a BESS, and update the native vegetation clearing limits. The modification is proposed as the new turbines will be more efficient than the originally proposed, allowing for a maximum potential capacity of 1300MW.	Approved March 2018 Report to modify consent currently being prepared Construction pending approvals	Construction workforce: 800 direct jobs Operational workforce: 47 FTE staff Visual impacts of turbines on the local community and significant vistas Shadow flickering Operational noise Damage to local roads from construction vehicle movement

Project Name	Sector	Proximity to Goulburn River Solar Farm	Overview	Status	Social Impact Considerations
Tallawang Solar Farm (RES, 2021)	Renewable Energy	This project is 55 km west of the Goulburn River Solar Farm Project.	Proposed solar farm development located adjacent to Barneys Reef Wind Farm, involving a 500MW solar farm, a BESS, and associated infrastructure.	SEARs issued September 2021 EIS preparation ongoing Construction planned to commence 2023	Construction workforce: 430 direct jobs; operational workforce: 7 direct jobs Competing land uses Changes to the landscape's visual character, including glare and glint from solar panels Increased traffic and road safety risks Changes to local population and increased demand for local services.
Valley of the Winds Wind Farm (UPC\AC Renewables, 2021)	Renewable Energy	Project located 57km northwest of the Goulburn River Solar Farm.	The project comprises the development of 175 wind turbines and supporting infrastructure including a high voltage transmission line which would run approximately 65 km to the existing Bayswater to Mt Piper 500 kV transmission line. The wind farm would be located close to the township of Coolah, in the Warrumbungle LGA and is being developed by UPC\AC Renewables.	SEARs issued June 2020 EIS preparation ongoing	Construction workforce: 400 FTE jobs; operational workforce: 50 FTE jobs Opportunities for employment, training and skills development, local procurement, and community investment Construction amenity Incoming workforce may impact community cohesion
Dalswinton Sand and Gravel Quarry (Rosebrook Sand and Gravel Pty Ltd, 2018)	Mining and Extractives	Project located 60km east of the proposed Goulburn River Solar Farm Project.	The proposed development is expected to extract approximately 15-20 Mt of material over an expected life of 25 years. The quarrying operation will expand across 89ha of the site, with an estimated annual maximum production capacity of 500,000 tpa. The site is located adjacent to the Hunter River and is 7.5 km southeast of Denman.	SEARs issued August 2018 EIS preparation ongoing	Social impact considerations to be determined

Project Name	Sector	Proximity to Goulburn River Solar Farm	Overview	Status	Social Impact Considerations
Dunedoo Solar Farm (Ib Vogt gmbH (ib Vogt) 2021)	Renewable Energy	Project located 70km northwest of the Goulburn River Solar Farm	Proposed 55 MW solar farm with BESS and associated infrastructure. The Dunedoo Solar Farm proposal site is located approximately 2 km north of the township of Dunedoo.	Approved September 2021 Construction planned to commence late 2022	Construction workforce: 100 direct, and 160 indirect positions Operational workforce: 3 direct, and 9 indirect positions. Habitat clearance and impacts to natural biodiversity and ecology Impacts to Aboriginal heritage items Visual amenity concerns and changes to landscape Agricultural land use conflict Dust and noise generation during construction

2.3 Community Capitals Analysis

The social baseline profile has been structured according to the community capitals framework as outlined in **Section 1.5.1** with **Appendix B** containing the complete social baseline profile dataset. The following sections outline each community capital in further detail.

2.3.1 Natural Capital

Natural capital refers to the natural assets and resources that contribute to community sustainability. Natural capital can include resources such as minerals, land, forests, and waterways, which provide benefit to the community, as well as environmental assets that provide social, cultural, or recreational value. A summary of the natural capital in the social locality is provided below.

2.3.1.1 Land Use

The Upper Hunter and Mid-Western regions have temperate climates with hot summers and cool winters, which is favourable for rural industry. Within the Upper Hunter Shire, rural industries represent the predominant land use, with key economic and employment sectors including the equine industry, agricultural production (predominately beef, viticulture, and dairying), coal and other mineral mining, and tourism (NSW Landuse 2017 (DPIE, 2020); Upper Hunter Shire, 2017).

Farm holding comprise around 80% of the Upper Hunter Shire land area, with large extents classified as prime agricultural land. Consequently, the Upper Hunter LGA contains 50% of the agricultural area, 25% of the farms, and over 30% of the agricultural production value of the Hunter Region as a whole (DPIE, 2013). As discussed in **Section 2.3.1.1**, most of the land in the Upper Hunter is used for agriculture, specifically for grazing and growing crops. Surrounding the Project Area is the Goulburn River National Park, representing large areas of nature conservation land usage.

Challenges associated with the region revolve around maintaining and developing agricultural productivity whilst also supporting the development of competing industries. Key challenges will continue to emerge in relation to balancing the benefits and risks associated with mining, coal seam gas, and continued urban expansion (NSW Government, 2012). The regions' agriculture, tourism, and mining industries are also highly sensitive to climate change, with a greater risk of hazards expected into the future for these key land uses.

Further, of note, the recent mouse plague appears to have had severe impacts on farmers and residents in the area, particularly in the town of Merriwa and surrounding regions (ABC News, 2021).

The land use profile of the properties most proximal to the Project Area is outlined in **Table 2.3**, as gathered through consultation with proximal landholders and property owners to the Project. Of the five near neighbours that responded, 100% stated that they owned their property. Three respondents described their properties as running horses and/or cattle.

Table 2.3 Land Use and Property Profile of Proximal Properties to Project Area

Respondent	No. dwellings on property	No. residents	No. years on property
1	2	7	20
2	1	1	39
3	0	0	37
4	3	5	69
5	2	6	27

From the responses provided, it is apparent that most nearby properties to the Project have multiple dwellings, with between 1-7 residents per property. It is also notable that all landholders are long-term residents, having lived at their properties for a minimum of 20 and up to 69 years. This indicates the immediate community nearby the Project Area are stable and likely have high levels of attachment to the land and their surrounds.

A snapshot of the local community values and aspirations were captured through the consultation, with most values identified related to people's surrounding natural environment from their rural properties, and the quiet lifestyle that comes with country-living. For instance, when asked to describe what people value about their community and where they live, responses provided included:

The peaceful outlook of the bush

Country landscape and outlook of hills, grass, countryside

Clear countryside, no mines close by and no dust

Wide open space and our ability to roam around the property.

2.3.1.2 Environmental Assets and Ecosystem Services

The Upper Hunter and Mid-Western region are highly disturbed landscapes, in which there has been significant loss of natural habitat since European occupation. Approximately 8.4% of land in the Upper Hunter Shire is protected for conservation, which is slightly lower than in the Mid-Western Regional LGA (11.5%). Muswellbrook Shire, which contains large portions of the Wollemi National Park, had approximately 42% of its' land area protected for conservation (ABS, 2018). The Project Area is surrounded by the 723km^2 (72,300 ha) Goulburn River National Park, which was gazetted in 1983, and is managed by the NSW National Parks & Wildlife Service.

A waterway of importance to the Project Area and the social locality is the Goulburn River, which flows through the Goulburn River National Park, from twenty-one tributaries north and northwest of the Project Area, to downstream into the Hunter Valley. The Project Area itself is a contributing catchment for the Goulburn River.

The area has also historically experienced extended periods of intense drought, the most recent of which was from 2017 to 2020. The implications of climate change on agricultural viability are particularly relevant to the social locality. Changes to agricultural growing seasons, impact of water availability, and higher temperatures may place significant demand on water and land resources in the area (Upper Hunter Shire Council, 2017).

2.3.1.3 Recreational Assets and Values

As previously noted, the Project Area is surrounded by the Goulburn River National Park which is situated partly within the LGAs of Mid-Western, Muswellbrook, and Upper Hunter and covers approximately 70,161 hectares. The area was reserved as Goulburn River National Park in 1983, following extensive environmental assessment identifying the area's significant natural and cultural heritage (NSW National Parks and Wildlife Service, 2003).

The Park attracts relatively few visitors compared to other national parks that are located closer to major metropolitan centres. The main recreational feature of the park is the Goulburn River, with facilities including the Spring Gully camping and picnic area, Big River campground, and Lees Pinch Lookout Walking Track. Milan Dhiiyaan, a local Aboriginal company, also provides guided Aboriginal cultural tours.

In terms of recreational and leisure facilities, the Upper Hunter Shire Council manages more than 119 hectares of public parks, reserves and ovals which provide for activities such as walking, bike riding, picnics and barbecues, playgrounds, and organised sport. The most popular parks in the Merriwa and surrounding areas include the Merriwa Apex Oval and Merriwa Tennis Course, with other recreation facilities in the Upper Hunter Shire including Bill Rose Sports Complex, Jefferson Park, and Scone Park (Ross Planning, 2014).

2.3.2 Political Capital

Political capital refers to the governing and organisational structures of the population, including formal and informal systems, and the existing means for public participation in various aspects of civil life. The following sections outline the governance arrangements of relevance to the Project.

2.3.2.1 Aboriginal Governance and Traditional Owners

The land of the Project Area was traditionally occupied by the Wonnarua Nation (AIATSIS, 1996), with the Wonnarua Nation being the traditional owners of what is today the Upper Hunter region. The Project Area is subsequently located on land represented by the Wannaruah Local Aboriginal Land Council (LALC) and is proximate to land represented by the Mudgee LALC.

Wonnarua people in the Hunter Valley are also represented by the Wonnarua Nation Aboriginal Corporation (WNAC). The Corporation, established in 1999, is committed to the ongoing advancement of Aboriginal interests in the region and supports a number of projects on behalf of the Wonnarua community, mostly relating to education and health, as well as including purchasing culturally important properties to develop tourism and agriculture, and to preserve cultural artefacts (Wannarua Nation Aboriginal Corporation, 2021). Further, the WNAC is currently developing a map to define the traditional boundaries of Wonnarua country, based on written and oral historical records.

Also of importance, the Wiradjuri Nation are the traditional landowners of the adjacent land comprising the Central West region to the south and south-west of the Project Area. The Wiradjuri Nation covers approximately one fifth of NSW and represents the largest Aboriginal nation in NSW.

Local Aboriginal Land Councils operate under the *Aboriginal Land Rights Act 1983* (NSW) and aim to improve and foster the best interests of all Aboriginal persons within or surrounding their Council areas. The Wanaruah LALC represent the land and people comprising the Project site within the social locality. The development is proximate to land represented by the Mudgee LALC. Therefore, the rights and interests of Aboriginal people within the social locality (excluding the Project site) may also be represented by the Mudgee LALC.

Under the *Aboriginal Land Rights Act 1983*, an adult Aboriginal person can apply to become a member of a LALC on the grounds that they:

- live within the LALC area; or
- have an association with land in the LALC area; or
- are an Aboriginal Owner in relation to land in the LALC area as listed on the Register of Aboriginal Owners.

Services offered by these LALCs include cultural education, housing assistance, aid in legal matters and advocate on behalf of individuals within the community. Whilst services tend to be local to each LALC, services may extend Council boundaries.

2.3.2.2 Local Government

At a local government level, the Project sits within the Upper Hunter Shire LGA. At the State and Federal level, the Project falls in the Upper Hunter Region, and the New England division respectively.

The town of Merriwa, and the Upper Hunter LGA, is represented by the Upper Hunter Shire Council and consists of nine councillors, including Maurice Collison as Mayor. A vacancy for the tenth councillor currently exists due to a resignation. An election is scheduled to be held on 4 December 2021, having been postponed in September 2020 and September 2021, due to the COVID-19 Pandemic restrictions in place throughout NSW.

Mudgee, and the Mid-Western Regional LGA, is represented by the Mid-Western Regional Council which comprises nine councillors including the mayor, Des Kennedy.

The town of Muswellbrook, and the Muswellbrook Shire LGA, is represented by the Muswellbrook Shire Council which comprises 9 councillors including the Mayor, Rod Scholes. Elected local government councillors for the study LGAs are provided in **Table 2.4**.

Table 2.4 Upper Hunter Shire, Mid-Western Regional, and Muswellbrook Shire Mayor and Councillors

Role	Councillors
Upper Hunter Shire Council	
Mayor	Maurice Collison
Deputy Mayor	Kiwa Fisher
Councillors	Sue Abbott, James Burns, Ron Campbell, Lorna Driscoll, Lee Watts
Mid-Western Council	
Mayor	Des Kennedy
Deputy Mayor	Sam Paine
Councillors	Paul Cavalier, Russell Holden, Alex Karavas, Esme Martens, John O'Neill, Peter Shelly, Percy Thompson
Muswellbrook Shire Council	
Mayor	Rod Scholes
Deputy Mayor	Jacinta Ledlin
Councillors	Mark Bowditch, Jason Foy,Graeme McNeill, Steve Reynolds, Janelle Eades, Stephen Ward, Brett Woodruff

Source: Upper Hunter Shire Council, 2021; Mid-Western Shire Council, 2021; Muswellbrook Shire Council, 2021

Note: Only seven of nine councillors are listed on Upper Hunter Shire Council's website.

2.3.2.3 State Government

The Project is located within the boundaries of the Upper Hunter State Electorate, which covers seven local government areas: Dungog Shire, Muswellbrook Shire, Upper Hunter Shire, Liverpool Plains Shires, Singleton Shire (partially covered), the north-east of the Mid-Western Regional Council, and the Mid-Coast Council (partially covered). Dave Layzell of the National Party is the incumbent member for the Upper Hunter following the 2021 Upper Hunter state by-election, replacing National Party member Michael Johnsen who was the member since March 2015.

The town of Mudgee and surrounding areas in the Mid-Western Regional Council, located near the subject site, is located within the State Electoral district of Dubbo. Dugald Saunders of the National Party is the incumbent member for Dubbo following the 2019 ordinary state elections (Electoral Commission NSW, 2020).

2.3.2.4 Federal Government

The Upper Hunter Shire is within the Australian electoral division of New England in NSW. Barnaby Joyce of the Nationals Party was elected to the House of Representatives for New England in 2017 and re-elected to the position in 2019. Mr Joyce is also the Deputy Prime Minister and Minister for Infrastructure, Transport and Regional Development.

2.3.3 Human Capital

The level of human capital within a community is assessed by considering population size, age distribution, education and skills, general population health and the prevalence of at-risk groups within the community. The following characterises the human capital of the social locality.

2.3.3.1 Population Trends

In 2016, there were 14,110 people living in the Upper Hunter LGA, 6.9% (985) of which lived in the Merriwa UCL itself. The social locality includes the small rural settlement areas of Coggan, Wollar, and Mogo, which each have populations of approximately 50 people or less.

The largest communities in the social locality include Muswellbrook, located within the Muswellbrook Shire Council, Mudgee, located in the Mid-Western Regional Council, and Scone located in the Upper Hunter Shire Council. Key population change projections across the social locality to 2041 are summarised in **Figure 2.1**. This shows that the population in the Mid-Western and Muswellbrook LGAs will increase by approximately 7% a piece, and in the Upper Hunter LGA the population will decrease by approximately 10% to 2041.

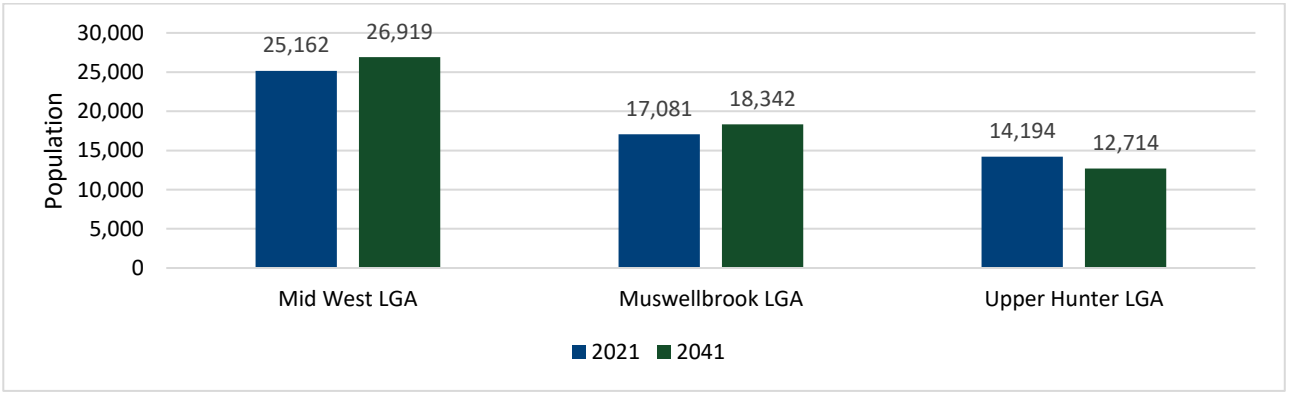


Figure 2.1 Population Change Projections (2021-2041) by Selected LGAs

Source: NSW Government ASGS 2019 LGA Population Projects

Figure 2.2 depicts population rise and fall across the different age groups within the respective LGAs and illustrates the differences in age projections between 2021 and 2041. It shows that from the three LGAs considered, the Mid Western Regional LGA has the largest population, with the population in the Upper Hunter LGA by 2041 expected to be less than half the size of the Mid-Western Regional LGA. Across all study LGAs, the largest proportional increase in population among age groups to 2041 will occur among the 80-84 years age bracket (1.3% to 2.3% proportional growth across LGAs), and the 85+ years age bracket (2.3% to 3.1% proportional growth across LGAs). At the same time, small proportional decreases in the number of younger people living in the study LGAs are anticipated relative to older age persons. Whilst population is anticipated to increase in the Mid-Western and Muswellbrook LGAs, population growth will be driven by older aged persons. This finding suggests that the populations in the study communities are ageing, with younger age populations declining across all LGAs. Strong population decline is projected to 2041 in the Upper Hunter LGA.

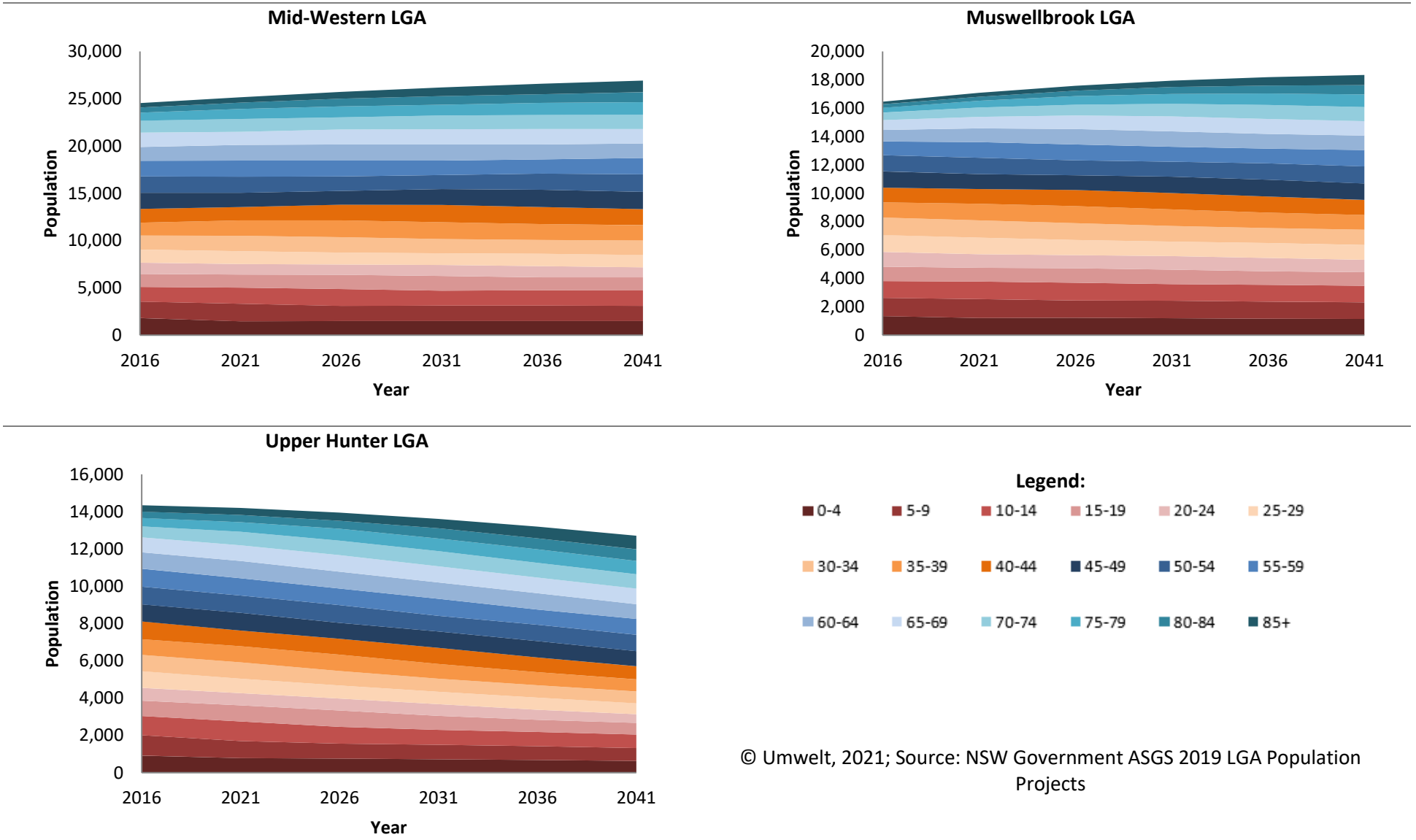


Figure 2.2 Population Projections (2016-2041) in Selected LGAs by Age

There is a proportionally higher Aboriginal population across all localities when compared to wider NSW (3%). Merriwa and the Muswellbrook LGA have the highest proportional of Aboriginal residents across the social locality with 10% and 8% of their populations identifying as Aboriginal in 2016. Around 5% of the Mid-Western Regional LGA and Upper Hunter LGA's populations reported that they had Aboriginal or Torres Strait Islander origins.

Across the social locality, the Aboriginal population has increased at a higher rate than the general population. Merriwa experienced the highest proportional growth in its Aboriginal population relative to the general population, increasing by 6% over the 2006 to 2016 census periods. In 2016, Muswellbrook recorded the largest overall population of Aboriginal and Torres Strait Islander people at 1,342 persons.

The median age in the Mid-Western LGA, Upper Hunter LGA, and Merriwa UCL is 42, 41, and 44 respectively, which is slightly higher than the NSW State median of 38 years. Muswellbrook LGA had a median age lower than the state average at 35 years. The Aboriginal and Torres Strait Islander population is substantially younger than the non-Aboriginal population, with a median age of 20 in Muswellbrook LGA, 21 in Mid-Western LGA, and 20 in the Upper Hunter LGA.

The number of Upper Hunter LGA residents in the 65+ year age bracket is predicted to increase by 8.9% between 2021-2041, and it is estimated that this cohort will comprise 28.9% of the Upper Hunter LGA population by 2041 (Figure 2.2). Similar increases are predicted in the Muswellbrook LGA and the Mid-Western Regional LGA with resident populations over 65+ years increasing by 8.7% and 4.6% respectively between 2021-2041. By 2041, the proportion of the population over 65+ years will be 24.7% in the Mid-Western Regional LGA, and 23.3% in Muswellbrook LGA.

The community broadly contain a largely consistent relative ratio of males to females when compared to the state average (50.7% female: 49.3% male). Lastly, the proportion of people born in Australia in the area is high compared to the State average (65.5%), with 85% of Muswellbrook LGA, 82% of the Upper Hunter LGA, and 81% of Mid-Western LGA residents born in Australia.

2.3.3.2 Vulnerable Groups

The following population groups within the social locality have been identified through this community profile as having existing vulnerabilities, potentially being more sensitive to changes to their environment, surroundings or circumstances, or more broadly may have lower levels of adaptive capacity to cope with change.

Young persons

Figures from the Australian Early Development Index (AEDI) report that children across the subject LGAs were similarly developmentally vulnerable in one or more AEDI domains (physical health and wealth being, social competence, emotional maturity, language and cognitive skills, communication skills and general knowledge) at a rate of 16.5% to 20.9% of all children. These values are similar to the State average, with 20.8% of all children being developmentally vulnerable in one domain. However, within Merriwa and surroundings rates of development vulnerability were significantly higher at 34.4%, and the rate of children vulnerable in 2 domains was 25%, more than double the State at 9.6%.

People living with a disability

Across the general population in the social locality, there were a similar number of residents living with a profound or severe disability, at 5.8% in the Mid-Western LGA, and 5.1% across the Muswellbrook and Upper Hunter LGAs, compared with the State at 5.6%.

Elderly people

People 65 years and older are higher than the State average (16.3%) in the Mid-Western LGA (19.6%), and in the Upper Hunter LGA (18.5%). In Merriwa, the number of people aged 65 years and older is higher than elsewhere across the social locality, at 25.3%.

In comparison, Muswellbrook LGA had a proportionally younger population with only 12.9% of residents being aged 65 years and older. This suggests that the social locality has a high proportion of aged residents, with the elderly at greater risk of vulnerability.

Aboriginal and Torres Strait Islander People

Merriwa UCL and Muswellbrook LGA contained the highest proportional Aboriginal population across the social locality with 10% and 8% of their populations identifying as Aboriginal or Torres Strait Islander, respectively (ABS, 2016). Around 5% of the 24,074 and 14,110 people counted in the Mid-Western LGA and Upper Hunter LGA reported that they identified as Aboriginal or Torres Strait Islander. Closing the Gap data (HNE Local Health District, 2019) indicates that Aboriginal people generally experience a higher level of health and disease burden when compared to the non-Aboriginal population.

2.3.3.3 Educational Attainment

Year 12 is the highest year of school completed for 39% of Mid-Western LGA residents, 34% of Muswellbrook LGA residents, and 39% of Upper Hunter LGA residents. Of the study communities, the Merriwa UCL had the lowest rate of year 12 completion amongst residents at 31%. Figures across all LGAs are lower than the State at 59%. More than 1 in 7 Merriwa residents had not completed school beyond Year 8, compared to 1 in 20 for NSW.

Levels of post-secondary education (including Certificate III & IV, Diploma and bachelor's degrees) differ across the study communities with over a third of people in Mid-Western LGA (39%), Muswellbrook LGA (37%), and Upper Hunter LGA (38%) having post-secondary qualifications. This is slightly lower than State and regional averages (47% and 40%, respectively). Across all the study communities Merriwa had the lowest rate of post-secondary qualification attainment at 30%.

Levels of post-secondary educational attainment are high amongst the Aboriginal and Torres Strait Islander population, with almost half of all Aboriginal people in the Mid-Western LGA (45%), Muswellbrook LGA (39%), and Upper Hunter LGA (42%) having a qualification. However, qualification types for Aboriginal people are heavily weighted towards technical certificates (59%-62%), with lower levels of bachelor's degree attainment (6.4%-8.2%), and postgraduate degree level qualifications (0.8-2.5%).

A lower proportion of young adults are engaged in education, training, or employment in the Upper Hunter, Mid-Western, and Muswellbrook LGAs, with 80%, 77.2%, and 74.6% of young adults, respectively, participating in 'learning or earning' compared to 85% for young adults across the State.

The SEIFA Index of Education and Occupation (ABS, 2018) reflects the relative educational and occupational level of communities, whereby a low score indicates relatively lower education and occupation status of people in the area in general. **Figure 2.3** presents the differences in education and occupation scores across the study communities, with levels of school educational attainment lower, if not significantly lower, than State average (59%) across all study communities.

Merriwa township contains two schools, St Joseph's Primary School and Merriwa Central School. The Index of Community Socio-Educational Advantage (ICSEA) places each school in the lower 20th and 6th percentile meaning that most schools in the state have a comparatively higher level of socio-educational advantage when compared to the student body within the study area (MySchool, 2020).

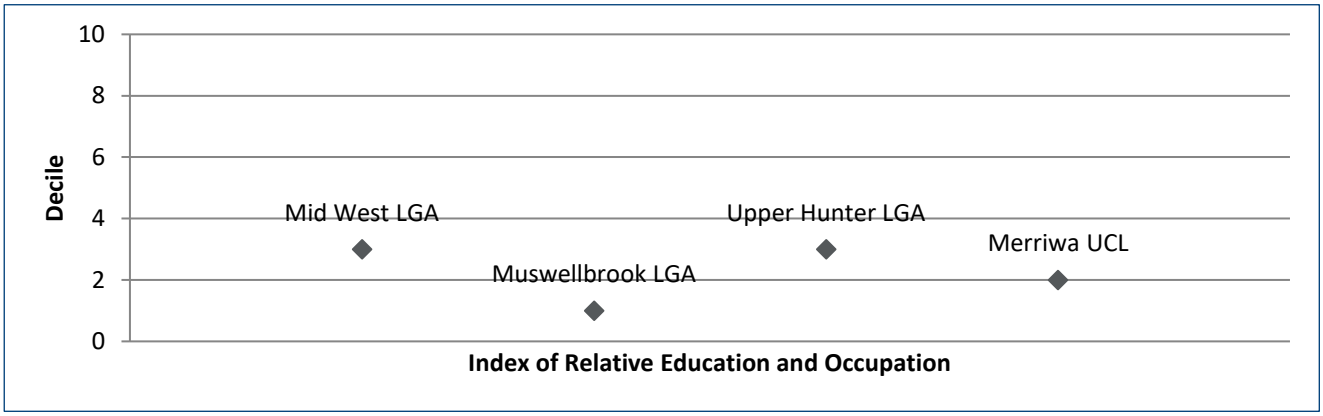


Figure 2.3 SEIFA Index of Education and Occupation

Source: SEIFA (ABS, 2018)

2.3.3.4 Public Health Conditions

The communities within the social locality have comparable rates of hospital admission to the State average, whereas the Aboriginal population's rate is much lower. Further, the rate of presentation to emergency departments is high across the social locality as compared to the State, and is also substantially higher again for Aboriginal residents, with Aboriginal people on average visiting the emergency department for treatment at least once a year. This indicates a difference in health service provision and access to care between the local Aboriginal and non-Aboriginal population and suggests that social, cultural or economic factors could be affecting people's capacity to access preventative health care. This is evident through the following:

- There are approximately 37,000 hospital admissions per 100,000 people per year in the Upper Hunter LGA, 37,500 in the Muswellbrook LGA, and 30,000 in the Mid-Western LGA, compared to the State average of approximately 36,000 per 100,000 people per year.
- There are a comparatively lower number of hospital admissions amongst the Aboriginal population in the Upper Hunter Indigenous Area (IARE)[1] and the Mudgee IARE (comparative to Mid-Western LGA), with 29,500 hospital admissions per 100,000 people per year, and 23,000 hospital admissions per 100,000 people per year respectively.
- The rate of presentation to emergency departments among the general population in the social locality is however, more than double the State average, with approximately 67,700-72,500 hospital admissions per 100,000 people per year across the LGAs, compared to an average of approximately 36,000 per 100,000 people per year across NSW.
- Despite rates of general hospital admission being lower for the Aboriginal population, presentation to emergency departments are roughly 3 times the state average. Rates of presentation to emergency departments for the Aboriginal population are 78,000 admissions per 100,000 people per year in the Mudgee IARE. Rates in Muswellbrook IARE and Upper Hunter IARE were 102,000 admissions per 100,000 people per year and 92,000 admissions per 100,000 people per year respectively. These figures indicate that, on average, most Aboriginal people in the Muswellbrook and Upper Hunter IARE visit the emergency department for treatment at least once a year. This indicates a lower engagement with health providers for preventable and routine treatment, and a higher rate of access to emergency treatment. Based on this data, it may therefore be inferred that a higher burden of disease is experienced amongst the Aboriginal population compared to the non-Aboriginal population.

[1] Source data from the Social Health Atlas of Australia provides Aboriginal and Torres Strait Islander Data by the ABS defined Indigenous Area (IARE), and by the Primary Health Network. Comparative datasets are therefore not exact to the geographic specificity of the LGA boundaries, instead serving as the best available approximation. Further information about the Indigenous Area (IARE) structure can be found in the following: https://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/1270.0.55.002~July%202016~Main%20Features~Indigenous%20Area%20(IARE)~7

Life expectancy is consistent across the Mid-Western (81.9), Muswellbrook (82) and Upper Hunter (82.2) LGAs with the State overall (82 years). However, rates of avoidable deaths are higher in the Mid-Western and Upper Hunter LGAs (147.9 and 139.9 per 100,000 people) compared to the State average (118.1 per 100,000 people) and regional and rural NSW (146.6 per 100,000 people). Rates of death from all avoidable causes were significantly higher still in Muswellbrook LGA at 191.5 avoidable deaths per year per 100,000 residents.

Avoidable deaths from respiratory systems disease were 21.7 and 20.3 deaths per year per 100,000 people in the Mid-Western Region, and in the Muswellbrook LGA, over double the state average (10.8 deaths per year per 100,000 population).

The above statistics suggest that populations in the study communities experience a much higher burden of disease when compared to the NSW average. Several factors may contribute to this, notwithstanding a number of identified health risk factors as identified in **Table 2.5**.

Table 2.5 Prevalence of Selected Health Risk Factors by LGA

Indicators	Mid-Western Regional LGA	Muswellbrook LGA	Upper Hunter Shire LGA	NSW
Harmful use of alcohol (% of population)[2]	21.9	18.0	23.2	15.5
Current smokers (% of population)[3]	21.0	22.1	20.6	14.4
High or very high psychological distress (% of population)[4]	12.6	14.4	11.3	12.4
Obesity rates (% of population)	41.0	46.1	40	30.9
Low or no exercise (% of population)[5]	69.2	73.6	64.4	65.3
Fair or poor self-assessed health (% of population)[6]	16.8	17.7	15.5	14.1

Source: PHIDU, 2021, Social Health Atlas of Australia, Data by LGA

Closing the Gap data published by the Hunter New England Health District (HNE Local Health District, 2019), outlines important measures of disaggregation between the health outcomes of Aboriginal and Non-Aboriginal people. A number of indicators are provided which track the performance of health outcomes, with a summary of key findings by indicator provided in **Figure 2.4** showing that health outcomes for Aboriginal people in the social locality are substantially different, and in most cases worse-off, as compared to the non-Aboriginal population.

[2] Estimated number of males aged 18 years and over who consumed more than two standard alcoholic drinks per day on average (modelled estimates)

[3] Estimated number of people aged 18 years and over who were current smokers (modelled estimates)

[4] Estimated number of people aged 18 years and over with high or very high psychological distress, based on the Kessler 10 Scale (K10) (modelled estimates).

[5] Estimated population, aged 18 years and over, who undertook low, very low or no exercise in the previous week (modelled estimates)

[6] Estimated number of people aged 15 years and over with fair or poor self-assessed health (modelled estimates)

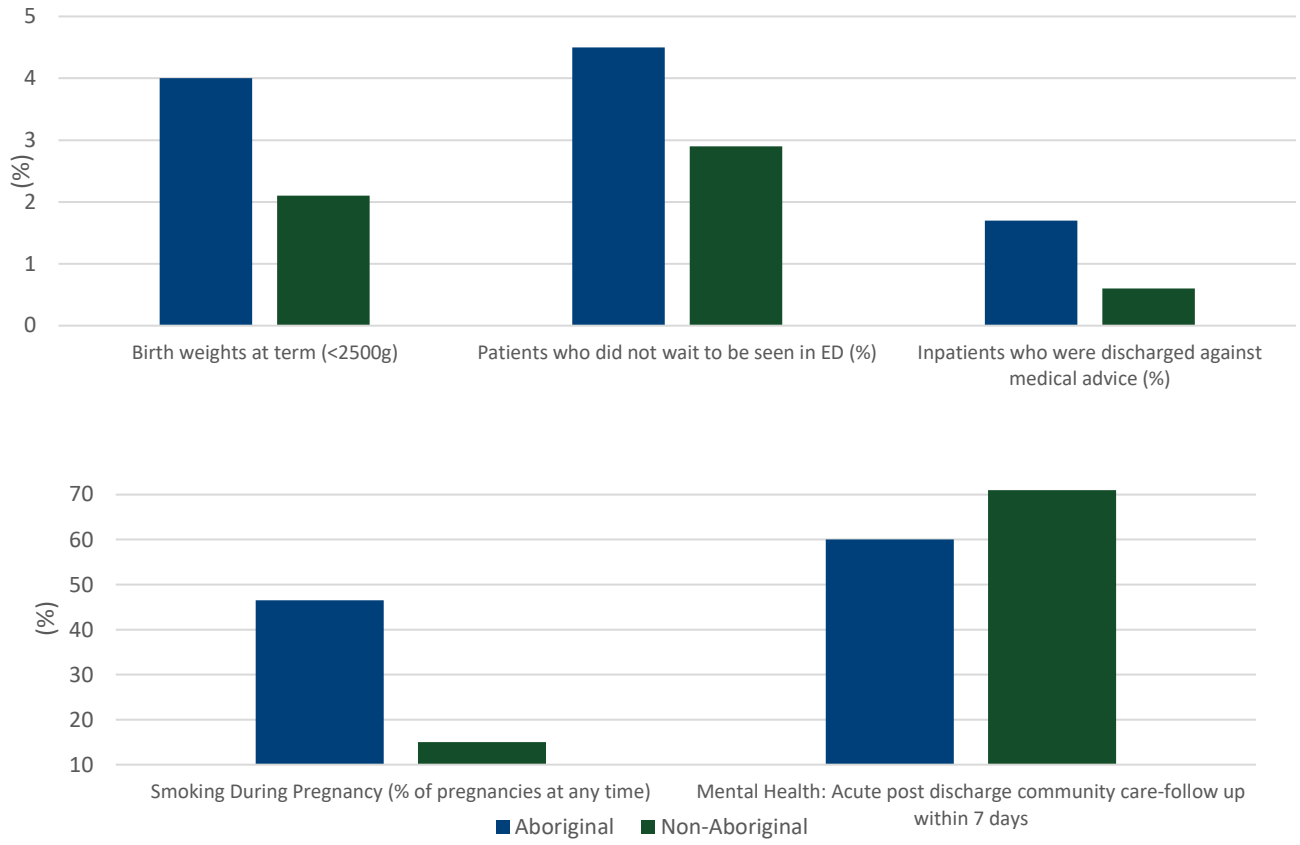


Figure 2.4 Selected Closing the Gap Data Indicators; Aboriginal and Non-Aboriginal Persons

2.3.4 Social Capital

Various indicators can be used to examine and assess social capital, including the level of volunteering, population mobility, crime rates, and the demographic composition of the community, such as the percentage of people born overseas and language proficiency. The following provides a summary of the key characteristics of the social locality from a social capital perspective.

2.3.4.1 Household Size and Composition

Figure 2.5 indicates the family composition and household type characteristics in the selected study communities. Merriwa is home to a lower proportion of couples with children (32%) relative to the proportion of families in the State (46%). Across the broader study communities, most families comprised couples with children. Within the broader community, children of school-age (5-14 years) comprise 19-21% of the total population, slightly higher than the State at 18%.

The community composition across the Muswellbrook, Upper Hunter, and Mid-Western LGAs is generally consistent with the State average in that couples with children, and families without children, each comprise approximately 37-46% of the respective communities. Notably, one parent families in Merriwa are considerably high. Lone person households in Merriwa also comprise a higher proportion of the community's total household composition, when compared to the broader community and the State.

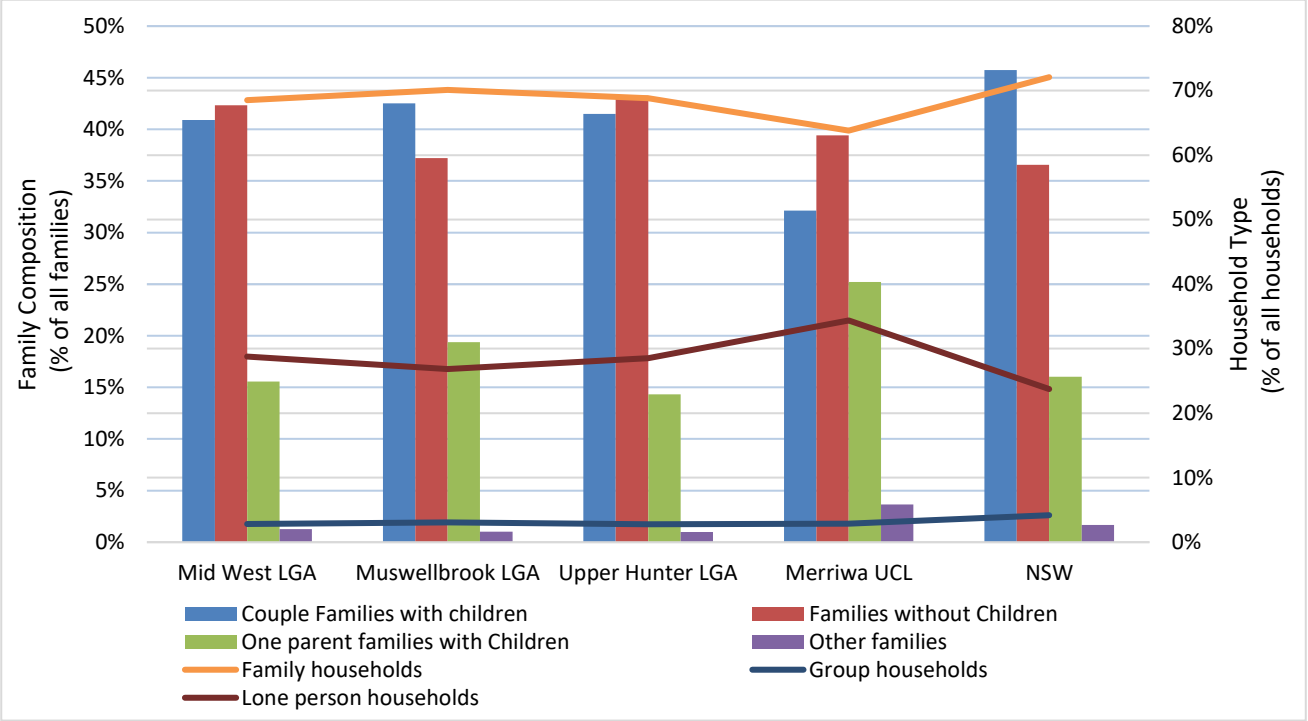


Figure 2.5 Family Composition and Household Type

Source: ABS, 2016

Household sizes in the study communities are generally slightly smaller than the State average (2.6 people), with the average number of people per household in Merriwa the lowest out of the communities within the social locality at 2.2 people.

Residents in the study communities generally have homes with enough rooms to meet housing needs, with just 1 person per bedroom, which is also in line with the State average. Levels of overcrowding in dwellings across the social locality are lower than the State (with 4.1%-7.1% compared to 9.1% of people living in crowded dwellings).

2.3.4.2 Population Mobility

The residents of the area have comparable levels of mobility to the wider State average, with 51% of residents in the Mid-Western, 49% in Muswellbrook, and 57% in the Upper Hunter living at the same address in 2016 as in 2011 (compared to the average of 54% for the State). The smaller community of Merriwa measured a similar level of mobility, with 53% of residents living in the same address in 2016 as in 2011. Communities across the area of social influence are therefore relatively stable with low levels of population mobility. This is further qualified through the values attributed to people's way of life and sense of belonging as described through the following responses from consultation with proximal landholders to the Project Area:

We value our family history and our connection to land

We have three generations of people living on the land

I grew up in Sydney and moved to here for a country lifestyle

We use the property to get out of the busy surroundings of Sydney.

2.3.4.3 Socio-Economic Disadvantage

The SEIFA Index of Relative Socio-economic Advantage and Disadvantage shows inequalities in access to resources across the study communities, with all localities experiencing higher levels of disadvantage relative to other areas across the State (**Figure 2.6**) (ABS, 2018).[7] .

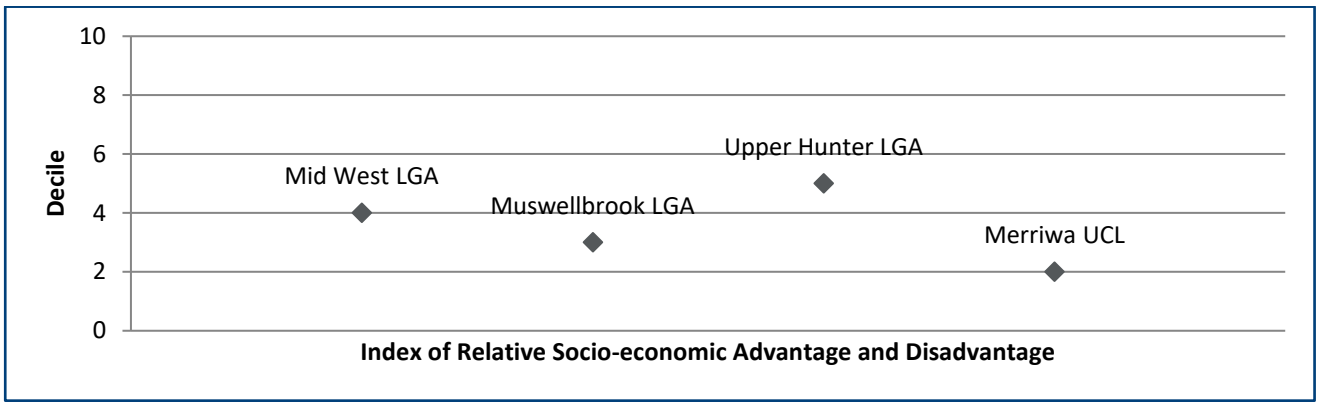


Figure 2.6 SEIFA Index of Socio-economic Advantage and Disadvantage

Source: SEIFA (ABS, 2018)

2.3.4.4 Levels of Social Cohesion

Approximately one quarter of people in the Mid-Western LGA, Upper Hunter LGA and in Merriwa in particular participated in voluntary work, which is higher than the State average (18%), whereas volunteerism in the Muswellbrook LGA was comparable to the State average.

Regarding crime, malicious damage to property is the most reported crime in the LGAs as recorded in **Figure 2.7**, with Muswellbrook LGA with significantly higher rates than the Mid-Western = or the Upper Hunter Shire LGAs.

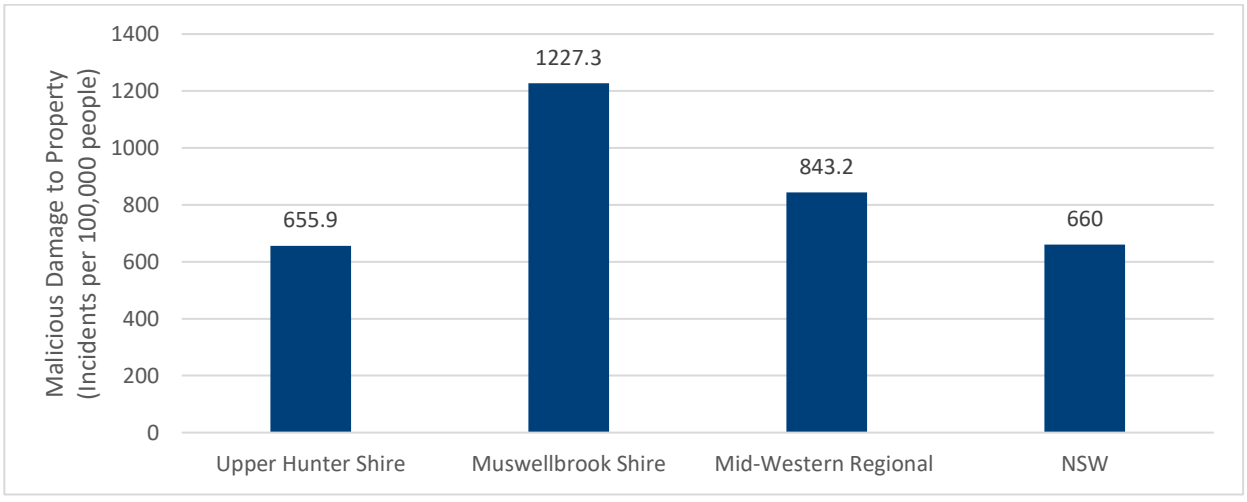


Figure 2.7 Malicious Damage to Property Incidents by Study Areas (BOSCAR, 2020)

[7] The SEIFA Index of Relative Socio-economic Advantage and Disadvantage provides a rank of geographic areas across Australia (or a State of Territory) based on Census information to provide an indication of people's access to material and social resources, and their ability to participate in society, relative to all other SSC (or LGA) ranked scores in NSW. In this report, rankings within the State of NSW are used. As a ranked index for the State, the New South Wales median score is the 5th (median) decile. Therefore, half of all LGAs is ranked either below or above the 5th decile. The SEFIA index is a useful tool for comparing LGAs (or localities) by comparative advantage or disadvantage relative with the other localities in the State.

Excluding rates of malicious damage to property, the top three offence types are summarised in **Table 2.6**.

Table 2.6 Top Offence Types by LGAs and Highest Ranked Offence Type

#1 Offence Type	#2 Offence Type	#3 Offence Type	Highest Ranked Offence Type by NSW LGAs
Upper Hunter Shire LGA			
Domestic violence related assault (528.9 incidents per 100,000 people)	Intimidation, stalking and harassment (528.9 incidents per 100,000 people)	Breach apprehended violence order (345.6 incidents per 100,000 people)	Break and enter non-dwelling (37th out of NSW LGAs)
Muswellbrook Shire LGA			
Intimidation, stalking and harassment (1,184.6 incidents per 100,000 people)	Breach bail conditions (958.7 incidents per 100,000 people)	Domestic violence related assault (799.9 incidents per 100,000 people)	Stealing from dwelling (5th out of NSW LGAs)
Mid-Western LGA			
Intimidation, stalking and harassment (962.3 incidents per 100,000 people)	Domestic violence related assault (558.3 incidents per 100,000 people)	Breach bail conditions (554.4 incidents per 100,000 people)	Sexual assault (10th out of NSW LGAs)
NSW Averages			
Breach bail conditions (624.5 incidents per 100,000 people)	Fraud (552.3 incidents per 100,000 people)	Intimidation, stalking and harassment (506.8 incidents per 100,000 people)	NA

Source: BOCSAR; 2020 NSW LGA excel crime tables, NSW Recorded Crime Statistics July 2016 – June 2021

Additional to these findings, the following key statistics regarding rates and use of prohibited drugs were recorded in 2020:

- Rates of possession and use of cannabis are on par with NSW (223.7 per 100,000 people) in the Upper Hunter LGA (204.5 per 100,000 people), higher in Muswellbrook LGA (458.0 per 100,000 people), and lower in the Mid-Western LGA (194.1 per 100,000 people).
- Rates of possession and use of amphetamines are comparable with NSW (98.9 per 100,000 people) in the Mid-Western and Upper Hunter LGAs. Rates of possession and use in Muswellbrook LGA are significantly higher than the state at 225.9 offence per 100,000 people.

This data suggests that there are generally high levels of crime in the communities of interest, and in particular the Muswellbrook Shire LGA. This indicates a potential higher prevalence of antisocial behaviour and potentially low levels of community cohesion across the community.

2.3.5 Economic Capital

Examining a community's economic capital involves consideration of characteristics which could include industry and employment, levels of workforce participation, household income and cost of living, such as weekly rent or mortgage repayments. The following provides a summary of the key characteristics of the study areas from an economic capital perspective.

2.3.5.1 Key Industries of Employment

Agriculture, forestry, and fishing is central to livelihoods in many of the study communities and is the top industry of employment in the Upper Hunter LGA, and a significant industry of employment in Merriwa, and the Mid-Western LGA. Mining was also a significant contributor to the share of industries by employment, particularly in the Mid-Western and Muswellbrook LGAs, where it is a top industry of employment. In Merriwa, the largest industry of employment is health care and social assistance. Figure 2.8 identifies these industries of employment with respect to NSW averages.

In addition to the above, retail and health and social care employ comparable proportions of the workforce in the Mid-Western LGA at 10.5% and 9.9% respectively, likely due in part to the regions larger service towns like Mudgee. However, primary industries (mining, and agriculture, forestry and fishing) remain dominant across the Muswellbrook and Upper Hunter LGAs.

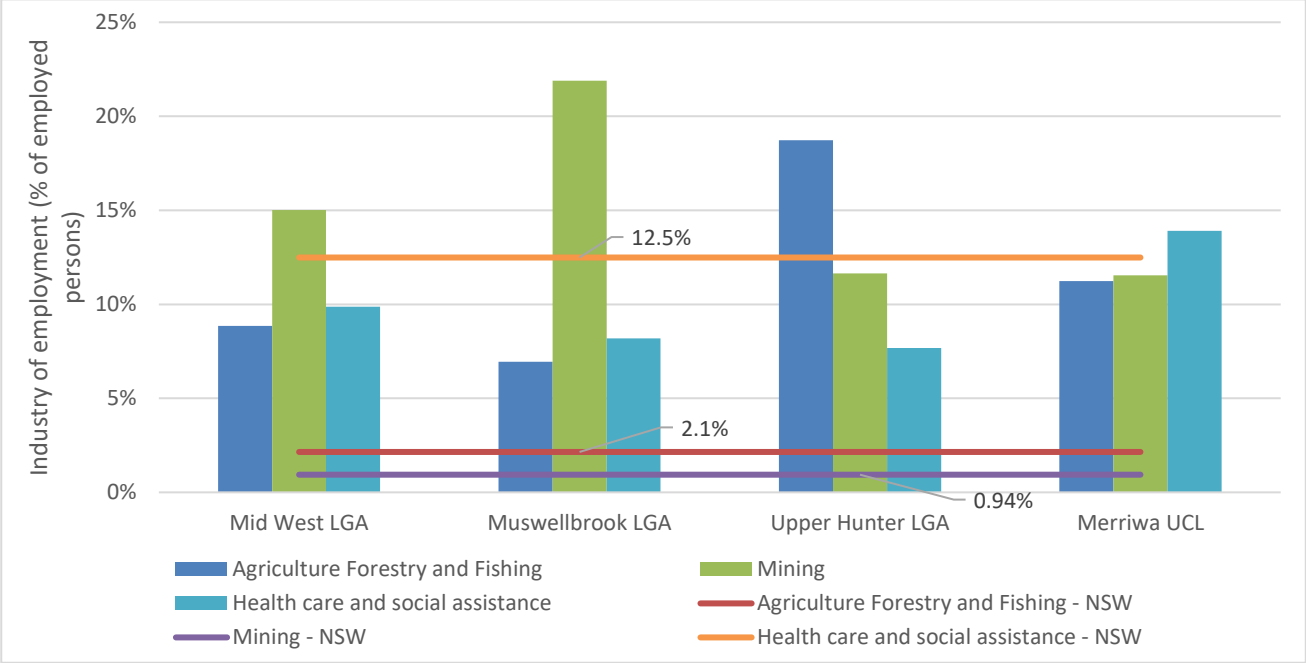


Figure 2.8 Key Industries of Employment by LGA

Source: ABS, 2016

2.3.5.2 Labour Force Participation and Unpaid Work

At the time of the 2016 Census, unemployment in the Muswellbrook LGA (8.2%), and the Merriwa UCL (7.6%) was higher than regional (6.2%) and State levels (6.3%). Unemployment is substantially higher for the Aboriginal and Torres Strait Islander population, standing at 21.2% in Muswellbrook LGA, 15% in Mid-Western LGA, and 9.9% in the Upper Hunter LGA.

In addition, 46.6% of Merriwa residents are participating in the labour force, with most being employed full-time (54.1%). This figure is slightly lower than the State labour force participation rate (59.2%). Across the study LGAs, labour force participation was comparable with the State across all the LGAs (54%-59%).

Figure 2.9 identifies the unemployment rate in the subject LGAs, and the combined labour force size in the previous five years to the June 2021 quarter. Over this period Muswellbrook has maintained the highest level of unemployment out of the respective LGAs. Unemployment trended downwards over the period, whilst labour force participation trended upwards.

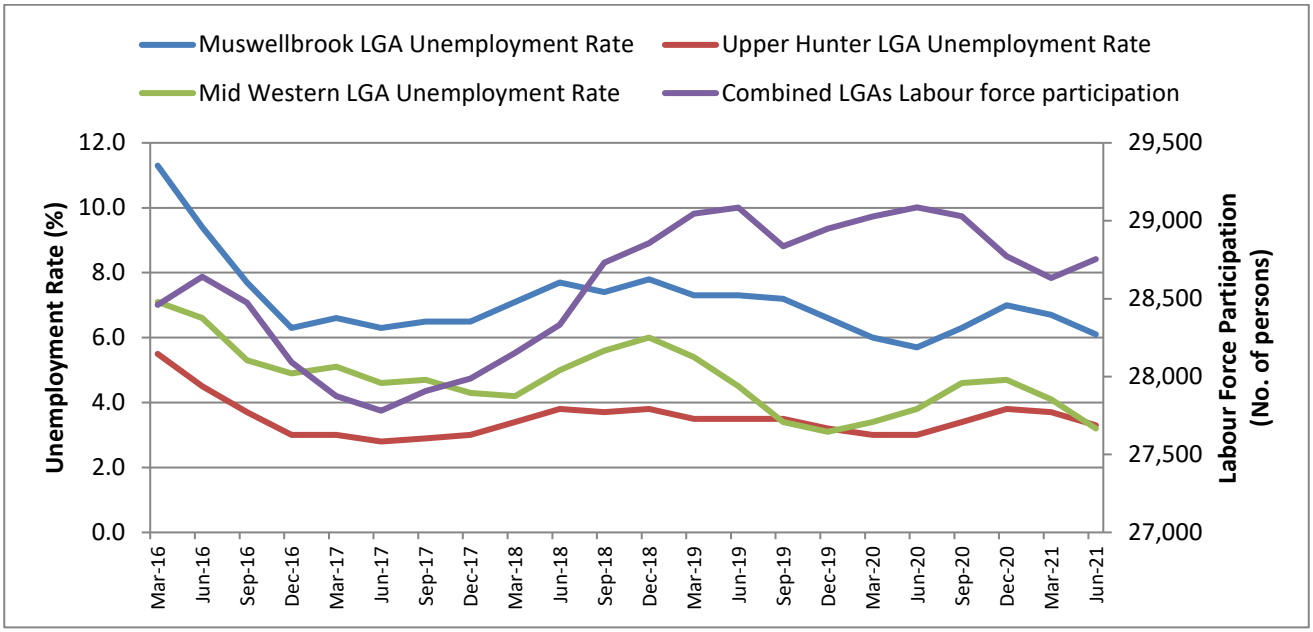


Figure 2.9 Unemployment Rates and Labour Force Size

Source: Labour Market Information Portal, SALM, June Quarter 2021

A slightly higher proportion of the Muswellbrook and Upper Hunter LGA residents are involved in unpaid domestic work (68.2% and 68.5%, respectively) compared to the State average (67.7%). Rates in the Mid-Western LGA were comparable to the State at 67.7% and slightly lower in Merriwa at 65.5%. Across all study regions there is also a slightly higher proportion of people doing 15 hours or more of unpaid domestic labour work when compared to the total State average (20.3%).

2.3.5.3 Household Income and Level of Housing Stress

The cost of living across the study communities is lower than the NSW average, but household incomes are also lower than the State average. The median household incomes for Mid-Western, Muswellbrook, and Upper Hunter LGAs are $1,131, $1,346, and $1,242 per week, respectively, which is slightly lower (4% less) than regional median incomes ($1,286 per week in the Hunter Region) and notably lower (27% less) than the State average ($1,486 per week). Merriwa had a significantly lower household income per week ($922) when compared to the wider social locality (26% less), and the State (38% less).

Differences in median incomes between the Aboriginal and non-Aboriginal population are evident across the LGAs as indicated in **Figure 2.10**. As shown, Aboriginal households in the Mid-Western LGA received 8% more income than the general population. Whereas Muswellbrook's Aboriginal residents received 17% less income per week than the general population, with this reduction also evident in the Upper Hunter Shire.

Figure 2.10 Median Household Income; Aboriginal and Non-Aboriginal Persons

Source: ABS, 2016

The median mortgage repayments (per month) in the Mid-Western, Muswellbrook, and Upper Hunter LGAs are $1,690, $1,733, $1,688, and $997 in Merriwa. These values are subsequently 17%, 15%, 17%, and 50% lower, respectively, then the State average repayment per month ($1,986).

The median rental costs (per week) in the Mid-Western, Muswellbrook, and Upper Hunter LGAs are $270, $250, $220, and $200 in Merriwa. These values are subsequently 29%, 34%, 42%, and 47% lower than the State average rental payment per week ($380).

Financial stress from mortgage or rent amongst low-income households[8] in the study localities are comparable with State levels, except for the Mid-Western Regional LGA where the proportion of households experiencing stress (22.4%) is lower than the NSW average (29.3%).

Despite this, a much higher proportion of households living in rented accommodation are experiencing housing stress than those living in homes with a mortgage. For instance, of the households living in private mortgaged dwellings in the Mid-Western Regional LGA, 9.4% were experiencing mortgage stress in 2016, compared to 6.1% in Muswellbrook, 8.8% in the Upper Hunter, and 9.6% in NSW. In contrast, 32.3% living in private rented dwellings in the Mid-Western, were experiencing rental stress in 2016, compared to 30.2% in Muswellbrook, 24.1% in the Upper Hunter Shire, and 27.9% in NSW overall.

The demand and cost of housing in the study communities is likely to have changed over the past 12 to 18 months due to intrastate migration from cities to regional towns across much of NSW, as a result of the COVID-19 pandemic. Demand for housing is estimated to be greater than current supply with rental vacancies across the Hunter Region (excluding Newcastle) remaining low at 0.7% in July 2021, and 0.8% in June 2021 (REINSW, 2021).

The Upper Hunter Shire Council have identified the need in their Land Use Strategy (2017) to plan for a small increase in overall population, with limited growth or decline expected in predominantly rural areas. There is also the ongoing potential for the demand for housing to increase overall because of additional mining operations proposed and emerging industries. Housing an ageing population is also an ongoing and emergent concern for the Shire and surrounding areas, particularly as younger people migrate away from the regions and as more older people migrate to the regions in search of a ‘tree change’.

[8] Low-income households are those in the bottom 40% of the income distribution, i.e., those with less than 80% of median equivalised income. Households under financial stress are those in spending more than 30% of their income on mortgage repayments or rent.

2.3.5.4 Economic Diversity

The Herfindahl Index provides an indication of market concentration within a region, and specifically provides an indication of how many industries are competing for market share within a given locality. The higher the index, the closer the market is to a monopoly, demonstrating a low level of economic diversity; while a low index indicates a greater number of industries and occupations being serviced within the social locality.

The Herfindahl Index for New South Wales is 0.0092, which suggests a high degree of economic diversity and market competitiveness. The Mid-Western and Upper Hunter have considerable economic diversity, whilst economic markets in Muswellbrook are less diverse compared to the wider Hunter Valley (**Figure 2.11**).

In all LGAs, coal mining is the primary industry of employment. Across the broader social locality other dominant industries include beef cattle farming, horse farming, fossil fuel electricity generation, construction (all types), supermarkets and grocery stores, food services, local government administration, primary and secondary education, hospitals, and aged care residential services.

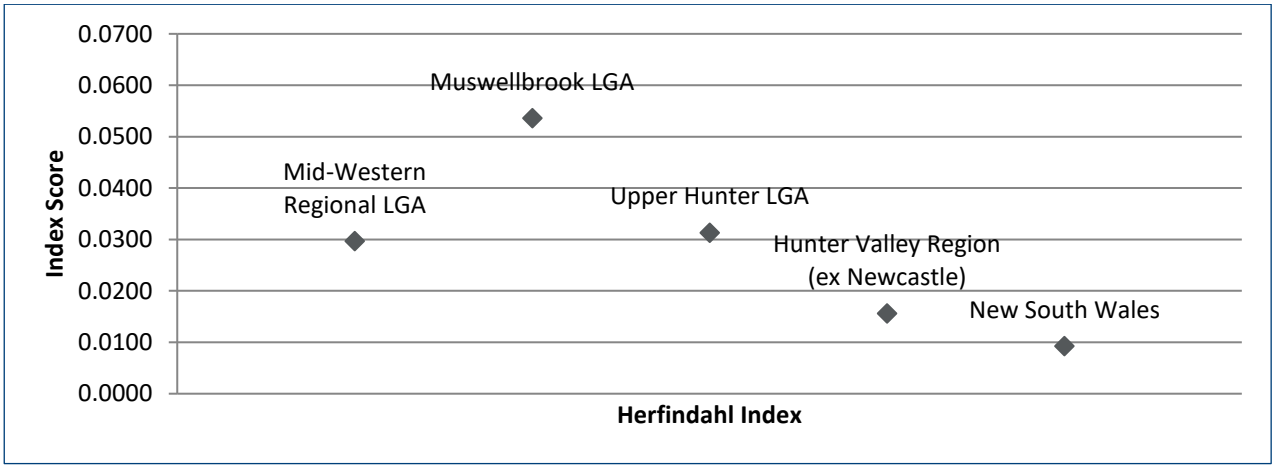


Figure 2.11 Herfindahl Index

Source: ABS Table Builder (2016)

The SEIFA Index of Economic Resources summarises variables directly related to income and wealth, whereby a low score indicates a relative lack of access to economic resources in general, and vice versa for a high score (ABS, 2018). Access to economic resources and economic disadvantage varied widely across the study communities (**Figure 2.12**). Upper Hunter LGA residents have greater economic advantage relative to Muswellbrook and Mid-Western LGA residents. Interestingly, residents in Merriwa experience considerably higher levels of economic disadvantage, ranking in the lowest 20% of all locations across the State.

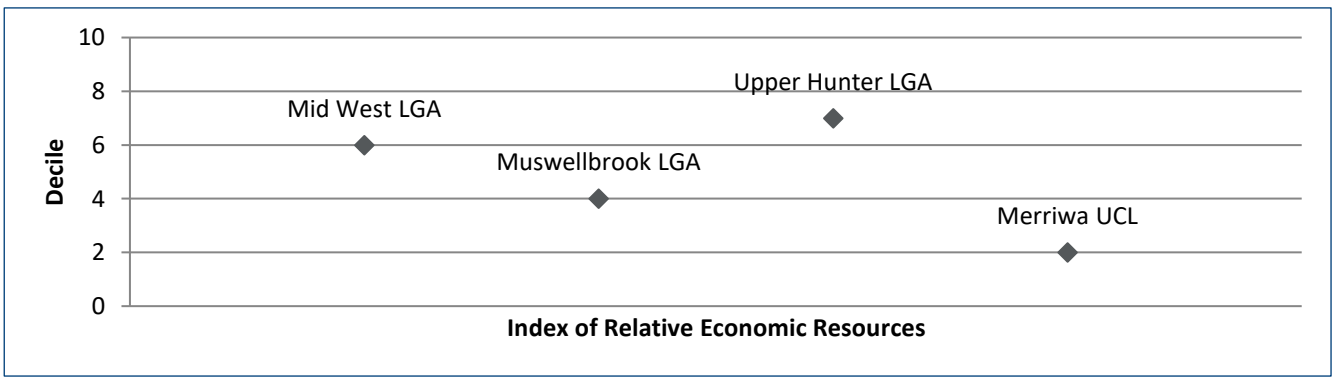


Figure 2.12 SEIFA Index of Relative Economic Resources

Source: SEIFA (ABS, 2018)

2.3.5.5 Tourism and Visitation

While the Upper Hunter serves as a stopover destination for people travelling through and for meetings of government agencies across regions, the LGA tends to have fewer overall visitor numbers, and shorter average stays compared to the Lower Hunter and the Central West regions (Buchan Consulting, 2011). Leisure visitation in Muswellbrook and the Upper Hunter is seasonal; with the majority of influx in the summer, however the winter period also has a busy festivals and events calendar. 113,000 domestic overnight visitors per year travelled to the Upper Hunter Shire, compared to just 3,000 international visitors (Tourism Research Australia, 2016). Despite lower relative tourist visitation compared to other areas in NSW, the Upper Hunter Country Destination Management Plan (Upper Hunter Country Tourism, 2013) notes that the region is unique for strong business visitation. The industries providing the strongest demand for accommodation were the equine, resources, and energy market sectors. Due to the cyclical nature of these industries, there may be insufficient accommodation supply to meet market demand during key project development, or events. Due to the extensive mine and mine servicing sectors in the Hunter Valley, business demand for accommodation is highest during the mid-week.

Domestic tourism visitation in the neighbouring Mid-Western Regional LGA is strong, particularly for the food and wine market in the localities surrounding Mudgee. Yet still, compared to the domestic tourism market, international visitation remained relatively low 66,000 visits in 2016, compared to 715,000 domestic visits to the Mid-Western region (Tourism Research Australia, 2016). This indicates that that there may be less overall demand for tourism facilities such as short-stay accommodation and hospitality services in the Upper Hunter as compared to neighbouring LGAs.

2.3.6 Cultural Capital

Cultural capital refers to underlying factors that provide human societies with the means and adaptions to maintain themselves in their environment (Cochrane, 2006). It includes the way people know and understand their place within the world. It may also refer to the extent to which the local culture, traditions, or language, may promote or hinder wellbeing, social inclusion, and development (IAIA, 2015). The following provides a summary of the key characteristics of the social locality from a cultural capital perspective.

2.3.6.1 Native Title

At the time of writing, two Native Title claimant applications have been registered for the Upper Hunter LGA. They are registered as NC2011/006 - Gomeroi People (20 January 2012), and NC2018/002 - Warrabinga-Wiradjuri #7 (31 August 2018) (National Native Title Tribunal). Determinations for the subject claimant applications have not been made. Claim NC2011/006 – Gomeroi People, comprises land on which the proposed Project is located.

Figure 2.13 Registered Native Title Claimant Applications in the Social Locality

Source: Native Tittle Tribunal (2021)

2.3.6.2 Aboriginal Cultural Heritage Values

Aboriginal cultural heritage sites and places represent a direct link to Aboriginal traditional and spiritual life. These sites are important in themselves as well as the landscape in which they are situated given Aboriginal people's relationship and connections to Country. As identified in the Goulburn River National Park Plan of Management (NSW NPWS, 2003), 347 Aboriginal sites have been recorded in the Goulburn River National Park which surrounds the Project. The recorded sites provide a wide range of evidence about different types of living places, locations where tools were made and used, and sites of artistic expression. There are shelters with evidence of habitation, art, open campsites, grinding grooves, scarred trees, a quarry source for particular stone artefact production (axes), and ground areas used for food processing.

The Project Area itself also contains remains of the historical 'Mawbey homestead', which carries heritage and cultural value due to the Jimmy Governor murder which took place on the property in 1900 (Britton, 2013).

2.3.6.3 European Heritage Values

The State Heritage Register (Heritage NSW, 2021) lists one heritage item of State significance in Merriwa and twenty-three items of local significance within the Merriwa township (Upper Hunter Local Environmental Plan). The Bow Palaeontological site, located on the Golden Highway (Merriwa-Cassilis) 12km west of Merriwa, is also located within the social locality. Located beside a road, this site is particularly open to destruction by road works or amateur fossickers. In addition, the Redwell Cemetery, located along Ringwood Road (toward the Project Area) from Merriwa, is a site of significance registered on the State Heritage Register.

2.3.7 Physical Capital

Physical or built capital includes the provision of infrastructure and services to the community and what is currently available or accessible to people. Within this, it is important to consider the type, quality, and degree of access to public, built and community infrastructure (including amenities, facilities, services, and utilities) as well as the provision of, and diversity of, housing (refer to **Appendix A** for the complete dataset).

2.3.7.1 Housing Typology

The vast majority (>88%) of homes across the social locality broadly are standalone houses, with semi-detached/terraced homes and apartments featuring as only a minor contributor (>4%) of the overall housing stock in the social locality. Merriwa UCL, Upper Hunter LGA, and Mid-Western LGA recorded the highest proportion of standalone houses across the social locality at 91% of the total housing stock.

The proportion of households that own their home outright is above the State average of 32.2% for most localities, with 38% of dwellings in Mid-Western region, 35.5% of dwellings in the Upper Hunter, and 36.2% of dwellings in Merriwa owned outright. The Muswellbrook LGA displayed a lower proportion of occupied dwellings owned outright when compared to the State at 26.3%. Dwellings owned with a mortgage are slightly below the state average (32.3%) for all social localities, with 31% in Mid-Western and Muswellbrook, 32% in Upper Hunter, and 27% in Merriwa.

2.3.7.2 Health Facilities

Improvements in health were identified as a key focus area in the Upper Hunter and Mid-Western Regional communities (Upper Hunter Shire Council, 2017; Mid-Western Regional Council, 2017). Approximately 2% of adults within the social locality experience a barrier to accessing healthcare when needed, with the main reason being cost – a figure slightly lower than the State average (2.5%).

In 2018, the availability of general medical practitioners was lower in the social locality than the State average (91.8 GPs per 100,000 people), with 83.7, 70.3, and 79.4 GPs per 100,000 people in the Mid-Western Regional, Upper Hunter, and Muswellbrook LGAs respectively. Health outcomes and access to health and hospital services in rural, regional, and remote New South Wales is currently subject to a State Parliamentary Inquiry following multiple reports of poor-quality healthcare outcomes (Parliament of New South Wales, 2020).

The health network in the Muswellbrook and Upper Hunter LGAs are managed by the Hunter New England Local Health District, with the Mid-Western Regional LGA covered by the Greater Western Local Health District. The Merriwa community is broadly serviced by one private medical practice, and the Merriwa Multi-Purpose Service (MPS) operated by Hunter New England Health. Provision is available for visiting specialists; however low rates of specialist provision have occurred due to the provision of larger hospitals across the Hunter Region and Mid-Western Region.

Merriwa provides limited specialist health services to its residents through the MPS, these include imaging, occupational therapy, social work, physiotherapy, speech pathology, and dietetics. A much wider provision of services such as hearing specialists, several dentists, physiotherapists, chiropractors and an imaging and radiography service are available in Muswellbrook and Singleton.

The broader social locality is serviced by the Mudgee Public Hospital, Scott Memorial Scone, Singleton Hospital, and Muswellbrook Hospital. The largest and most diverse specialist health facility servicing the Hunter Region is the John Hunter Hospital located in Newcastle.

Hospital bed availability across the social locality is counted as total beds available, 29.8 in Mudgee, 23in Merriwa (MPS), 54.3 in Muswellbrook, 36.5 in Scott Memorial Scone, and 46.8 in Singleton.

All LGAs in the social locality have specialised Aboriginal health services; the Upper Hunter Community Services centre supports a number of Aboriginal health services including outreach services to Merriwa and a medical outreach Aboriginal chronic diseases program. Ungooroo Aboriginal Corporation also operates a dedicated Aboriginal health service from Singleton and Muswellbrook.

Eleven aged-care facilities, retirement facilities, and independent living services have been identified across the nearby townships of Merriwa, Muswellbrook, and Scone. Merriwa is supported by an Aged Hostel with 16 available spaces, and the Merriwa MSP aged care facility with 15 available spaces.

2.3.7.3 Education Facilities

Merriwa has one early learning centre, one primary school, and one combined (central) school. A wider variety of early learning centres, and primary and secondary schools are provided in the larger service towns of Muswellbrook, Scone, and Mudgee. For instance, Muswellbrook contains eight early learning centres, and five primary and combined (central) schools, including a mix of public and non-government providers. There were four preschools identified in Scone, two primary schools, one secondary school, and one combined school. There are also branches of TAFE NSW located in Muswellbrook, Scone, and Mudgee.

2.3.7.4 Community Services and Facilities

The geographic scale of the social locality is broad and therefore consists of several parks, community recreation facilities, gardens, historic villages, nature reserves and national parks. There are a range of community halls, clubs, pubs, sports and show grounds in the Upper Hunter Shire that are used for art, teaching, live music, exhibitions, festivals and events. Particular emphasis is placed within the Upper Hunter Shire Community Strategic Plan 2027 to increase, enhance and maintain civil infrastructure, community assets and open spaces to meet the needs of current and future generations (Upper Hunter Shire Council, 2017).

Upper Hunter Community Services (UHCS) is a community based incorporated organisation primarily located in Muswellbrook to service the Upper Hunter region, including Merriwa. They provide social assistance, Aboriginal family support, community capacity building, childcare, mental health services, children's mobile outreach service, community and youth development, and family support services.

The NSW Department of Communities and Justice also funds the Upper Hunter Youth Services Inc. which provides free services such as adolescent and family counselling, youth and family support work, a dedicated youth centre in Muswellbrook, and regular youth activity programs to young people aged 10-18 years. The Upper Hunter Shire also manages the Merriwa Youth Centre, providing life skills, support, referrals, activities, and counselling to young people.

There is a local skate park and BMX track in Merriwa, as well as a multi-purpose sports club as well as service clubs such as the RSL, Merriwa Country Women's Association, Men's Shed, Women's Social Club, Merriwa District Progress Association, Can Assist, Children's playgroup, and Health Environment Group Inc. Major events in Merriwa include the Festival of Fleeces, Morgans Cup Races, and the Springtime Show. There are numerous places of worship, including a Catholic, Anglican Parish and Uniting Church.

There are several community spaces in and around the Upper Hunter Shire, including a library network in Aberdeen, Cassilis, Merriwa, Murrurundi, and Scone. Across the area the Shire manages 8 community halls. 3 public swimming pools, 2 community technology centres, 3 youth centres, and more than 119 hectares of sports grounds (Upper Hunter Shire Council, 2017).

2.3.7.5 Accommodation

Merriwa has a generally limited provision of short-term accommodation with three facilities in total being identified: a bed and breakfast, a motel, and a motor inn. Across the Upper Hunter LGA, the supply of rooms across all types of accommodation establishments in the 2015-16 period totalled 167-168 rooms, with room occupancy rates averaging 51.9% (Destination NSW, 2016).

The largest markets for short term accommodation within the social locality are the townships of Muswellbrook, Mudgee, and Scone. Within Muswellbrook, a total of 14 service providers were identified, comprising a mixture of hotels, motels, and serviced apartments, with approximately 15 separate accommodation providers identified in Scone.

The greater Mudgee area was identified as containing approximately 96 providers of short-term accommodation. This high level of service provision is attributable to the surrounding wineries and tourism facilities, attracting significant domestic visitation each year and demand created by a number of mining operations in the region. The Central West and Orana Regional Plan 2036 (NSW Government, 2017) identifies the delivery of a range of accommodation options for seasonal, itinerant, and mining workforces as a key direction of the NSW Government for this neighbouring region to the Project. The Plan goes on to state that the construction of large-scale projects and seasonal agricultural employment can increase transient populations in local towns, which places pressure on the local housing and accommodation supply, and suggests that large-scale developments with a likely impact on local accommodation facilities could be managed by project specific workforce accommodation facilities.

Excluding Mudgee and surrounds, the Mid Western Region contains a small provision of accommodation providers in the surrounding areas of Gulgong and Rylstone, with a total of ten and seven small service providers identified, respectively. A smaller amount of short-term accommodation was identified in Denman, with a total of 5 service providers identified, 3 rural retreats in surrounding areas, and a tourist park with RV facilities in the small township of Sandy Hollow. Limited accommodation services were identified in Cassilis, with just one hotel identified.

2.3.7.6 Telecommunication Services

All households across the social locality have below average internet access when compared to the State, as reflected in Figure 2.14. As indicated, across the Mid-Western Regional and Muswellbrook LGAs, Aboriginal households have a lower level of internet access compared to other households. However, in the Upper Hunter LGA, Aboriginal households had greater access.

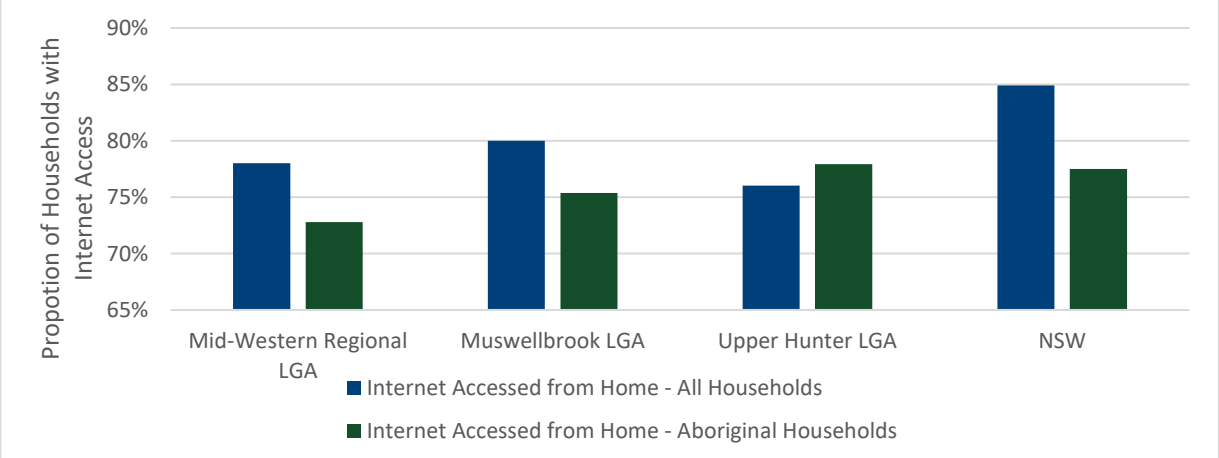


Figure 2.14 Internet Access

Source: ABS, 2016

2.3.7.7 Transport Infrastructure and Usage

The Upper Hunter LGA is located at the convergence of key transport routes from Newcastle and Sydney. Scone, the administrative centre of the Upper Hunter LGA, has its own airport and is located on the New England Highway, a major inland road and freight route connecting the Central West and North West regions to the Hunter region. Scone is also located on the Main North railway line, an important freight link connecting the region to the wider NSW railway network.

Federal funding for major and minor infrastructure upgrades are planned to support the future development of the region's energy resources, enabling the Upper Hunter to respond to new and emerging opportunities (NSW Government, 2016). Several priority areas of the Upper Hunter Council are to invest in the maintenance and upgrade of the road and bridge networks to support the growth of emerging industries in the region. In addition, upgrades to, and the development of, roads, rail and air services are envisioned to link capital cities and ports with regional NSW, with a primary focus on the selling, processing, manufacturing, and transport of key services.

Similar levels of car ownership were recorded across the social localities, with at least 89%-90% of households in the Mid-Western, Upper Hunter, and Muswellbrook LGAs owning one or more cars. The number of motor vehicles per household is slightly higher than the State average of 1.7, with all study communities owning 1.7 to 1.9 motor vehicles per household.

Approximately 76% of people employed in the Muswellbrook LGA, and 70-71% employed in the Upper Hunter and Mid-Western LGAs, travel to work by car as a driver or passenger and <0.6% of all people across the social locality use public transport to access their place of employment. The Mid-Western and Upper Hunter LGAs had a higher number of people who worked from home (7.4% and 8.1% respectively) compared to the State (4.8%) and the Muswellbrook LGA (4.2%). In Merriwa, 70% of residents travelled to work by car as either the driver or passenger. Merriwa also has a higher proportion of its households owning one motor vehicle or more at 86.2% when compared to the State. Higher rates of car ownership is likely linked to predominantly rural land use pattern of the surrounding areas and limited public infrastructure and alternative transport solutions.

The average commuting distance in the Mid-Western LGA is 23.2km, which is comparable to the Upper Hunter LGA at 20.8km. Residents on average in the Muswellbrook LGA travelled further, commuting on average 33.2km. However, it is likely that many people have much shorter commutes than the average, as the median commuting distance is 5.0 km and 6.5 km for the Mid-Western and Upper Hunter LGAs. However, people living in Muswellbrook still exhibit higher median commuting distances at 17.6km (ABS, 2018). It is noted that this data considers commuting distance to place of work. Muswellbrook, with its larger mining industry captures workers from a wider area likely contributing to these higher average and median values.

These statistics suggest that traffic volumes may be high during peak periods across the social locality and indicate a high level of road use in the region especially along main roads connecting workers to sites of employment.

3.0 Issues Scoping and Impact Identification

This section summarises the scoped issues and impacts (positive and negative) in relation to the Project and has been framed in accordance with the social impact categories outlined in the SIA Guideline (DPIE, 2021). The issues scoping exercise has been compiled based on outcomes and responses from community consultation undertaken during the scoping phase in combination with the findings of the social baseline profile.

Figure 3.1 illustrates the scoped social issues or impacts associated with the Project organised by category. The overview presented has been derived through analysis of the outcomes of consultation undertaken during the Scoping Phase with stakeholders outlined in **Section 1.7**.

When stakeholders and community members were asked directly about potential negative impacts of the Project, outlined in red in **Figure 3.1,** their top concerns included impacts on biodiversity and the natural environment (n=14), given the project's location within the Goulburn River National Park and impacts relating to public safety and conditions of local roads (n=11). The potential strain on local services due to an influx of construction workforce (n=11) and the cumulative effects on local infrastructure and services due to workforce influx across regional projects (n=10) were also identified.

When community members were asked directly to identify potential positive impacts of the Project, outlined in green in **Figure 3.1,** the most frequently cited response related to the potential for the Project to benefit local livelihoods, through opportunities for local employment and procurement (n=9) and the sharing of project benefits at the local community level (n=9). Other positive impacts of the Project raised by those consulted, included the positive contribution of the Project to the environment broadly, given its renewable energy focus, and to the community, through the potential provision of local sustainable energy.

The Project was also perceived to be aligned with local and regional sustainability objectives, as outlined in the Upper Hunter Shire Council's planning documents. The Project was also perceived to be aligned with local and regional sustainability objectives.

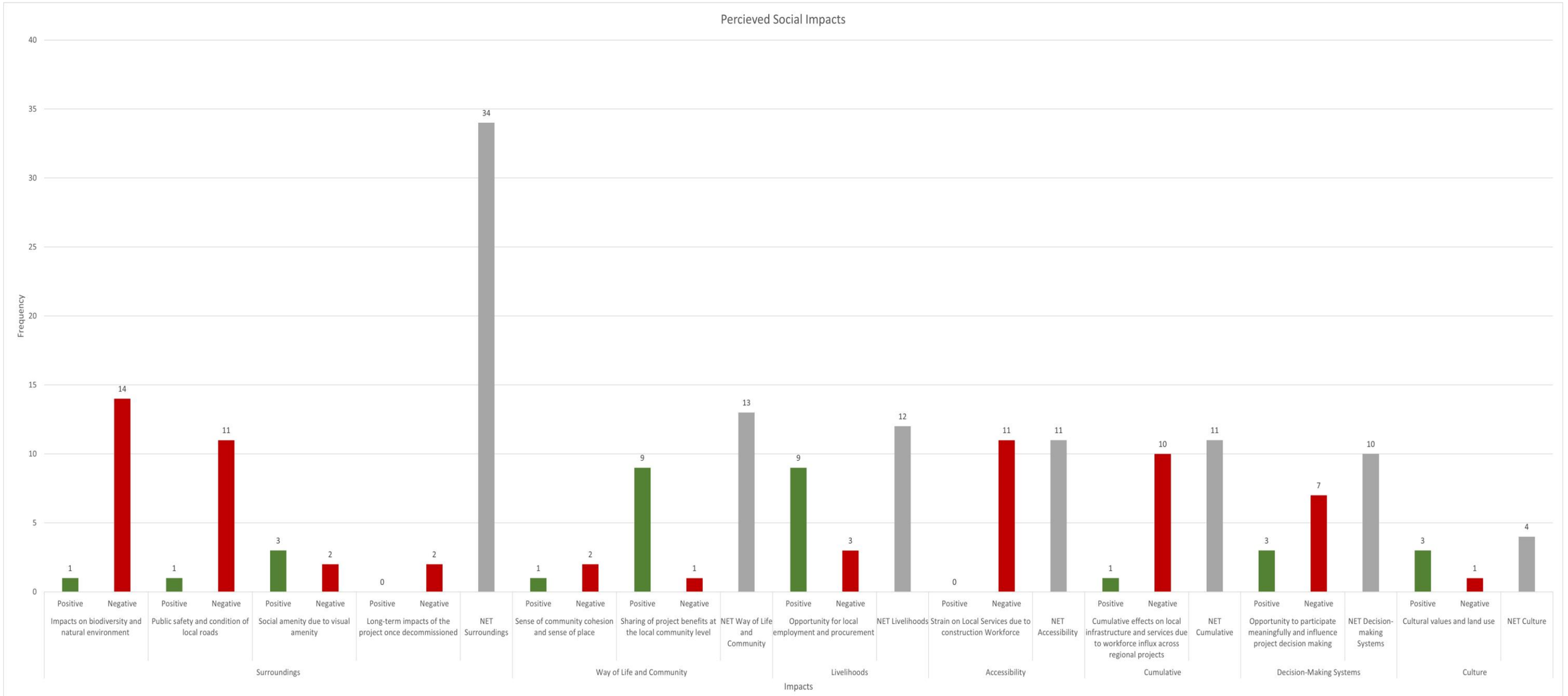


Figure 3.1 Perceived Issues and Impacts (Positive and Negative)

When proximal residents to the proposed Project were asked to rate their attitude towards renewable energy projects in general and the Project on a scale of one (1) to ten (10), with one (1) being extremely negative and ten (10) being extremely positive, ratings of 7.4 and 7.6 were obtained respectively, indicating a more positive attitude towards renewable energy development and the proposed Project.

Further description of the scoped impacts, as gathered through consultation with key stakeholders and community members, is described within the following section and has been organised in the order in which the impact categories were raised.

3.1 Accessibility

Impacts to community accessibility refers to people's ability to access and use infrastructure, services, and facilities and how the Project may result in access issues.

3.1.1 Strain on Local Services

In relation to the Project, the accommodation needs of the Project's workforce has been raised as a key concern, with stakeholder perceptions questioning whether the Project will impact on accommodation / housing availability and capacity in Merriwa, and broader service provision, given the number of workers proposed to be employed during the construction phase. These views are reflected in the following comments:

> '*There is not enough accommodation for workers' – Local landholder*
>
> '*There are not enough shops to meet the needs of the incoming population, there is just one grocer, one butcher and four takeaway places' – Local landholder*
>
> *I'm not sure there will be enough accommodation for them all. – Traditional Owner*

Additional pressure on local accommodation provision can affect access and affordability for other user groups, including workers from other sectors, visitors, and tourists, who may also experience an increase in housing and accommodation prices during the construction period.

Local government representatives also raised concerns regarding the cumulative impact of construction on the housing and accommodation market, due to the potential for two other projects in the region to be constructed at the same time. In this regard, it was noted that the Project may need to consider the development of temporary accommodation facilities to reduce social impact (refer to Section 3.7 below for further discussion of cumulative effects).

Additionally, due to the limited capacity of health services within Merriwa, it is also possible that the incoming construction workforce may place further strain on health services and facilities, impacting on broader community use of these services.

3.1.2 Use of Local Roads

Community members also raised concerns about the accessibility and quality of public roads near the Project, namely Wollara Road and Ringwood Road. Concerns in this regard included the serviceability of the road for large or heavy vehicle movements, that would likely be required for the Project's construction phase, describing that the road currently has sharp corners, dirt and gravel surfaces, narrow crossings, rough conditions, and single lane width; as well as safety concerns for other residents, other road users and wildlife (refer to **Section 3.2.2**). Given the likely increase in traffic the Project may generate, such concerns were further exacerbated.

In contrast, other stakeholders suggested that should the Project proceed, there was potential for local roads to be improved for all road users, with the potential for upgrades to Redwell and Wollara Roads. It was specifically mentioned that Wollara road would need to be sealed prior to construction to alleviate run off issues.

3.2 Surroundings

Impacts upon people's surroundings refer to changes that the Project may cause on a community's experience of the landscape, environmental assets, and resources and/or ecosystem services. This can include people's amenity, their access to and use of the natural and built environment, and the aesthetic value of the surrounds.

3.2.1 Impacts on the Natural Environment

In relation to the proposed Project, several near neighbours raised concern around the importance of protecting local wildlife and biodiversity within and near the Project Area, due to its proximity to the Goulburn River National Park; and the importance of ensuring that the Project reduces any adverse effects on ecological communities. Traditional owners consulted also emphasised the importance of ensuring the conservation of local biodiversity values, as noted below:

> *'Biodiversity impacts is about managing the land, looking after the land, and ensuring we are caring for Country.' – Traditional Owner.*

Further, members of the community also identified issues in relation to the risk of bushfires in the Project Area, and impacts on local wildlife, the surrounding bushland and conservation area. In this regard, it was suggested that traditional techniques be utilised to alleviate this issue:

> *'We recommend doing a cultural cool burning to manage the risk of bushfire and recommend that Lightsource bp develop a fire management plan to exclude the risk of fire. Also, this will create a potential employment opportunity for Aboriginal people'- Traditional Owner.*

While bushfire was identified as a concern by some, other landholders also acknowledged that the Project site was in a low-risk area and that previous bush fires may have prepared the land for subsequent events. It is understood that should the Project be approved; a Bush Fire Management Plan (BFMP) would be required to be developed in accordance with the Rural Fire Service requirements and in consultation with key stakeholders.

In relation to future land use of the Project Area, Lightsource bp are proposing to enable continued grazing of livestock on the Project site to afford coexistence of solar and agricultural activities. This strategy was viewed favourably by those consulted. However, it was noted that there would be a continued need to manage pests within the Project Area, given the prevalence of wild dogs in the area.

The impact on local dams and waterways because of increased traffic movements on local roads was also noted, with one landholder explaining that an increase in traffic on the dirt road would cause an increase in silt runoff into dams, thus affecting drinking water supply for livestock.

> *'Make sure the road gets done beforehand [commencement of construction], if this doesn't get done there are safety concerns, and the environmental impacts would be negative. Sealing the road with bitumen would improve run off, prevent dams from filling with dirt, and ensure less erosion' – Local Landholder*

3.2.2 Public Safety on Local Roads

Safety of road users was particularly noted, as previously outlined, with a landholder concerned that glare and glint from the solar panels would create a hazard for passing drivers and could become a road safety issue. It was suggested that solar panels should be located away from the road, should blend into the environment, and should be screened where possible. Relevant panel placement was also seen to be a strategy to reduce damage to solar panels from vehicle movements.

A further concern for stakeholders was safety of the construction workforce travelling on local roads, such as Wollara Road, due to the condition of the gravel road and the presence of a series of sharp turns. Stakeholders were also concerned about the ongoing degradation of the road because of increased traffic, and the subsequent safety impacts associated with worsening road conditions.

> *'The first and second crossings of Ringwood Road are deteriorating, and the unsealed road could really be improved. I see this project as a way to bring positive impacts to the community by making this road more fit for purpose. It would benefit the community and the Project.' – Community group representative*

3.2.3 Social Amenity

The visual amenity of the Project's transmission connection to the existing electrical infrastructure and power lines was a matter raised in consultation with local government as well as by members of the community, with people interested to understand whether the power lines connecting the solar farm to the transmission lines would be overhead or underground. Lightsource bp have confirmed that no new powerline construction would be necessary for the Project, as Project plans include connecting into the existing transmission network, with any new cabling required for the Project being underground.

Impacts of noise on social amenity was not considered a significant issue for those consulted, considering the location of the Project is some distance from the Merriwa community.

3.2.4 Project Decommissioning and Future Land Use

Community members raised concerns in relation to the lifespan of the solar panels and what happens to them at the end of the Project's life, including whether the material and equipment used on site would be recyclable. Stakeholders were also interested in understanding how the land would be rehabilitated and potential future land uses.

During the life of the Project, Lightsource bp would consider options for panel recycling, for those either damaged during the project life or at decommissioning. At the end of the Project life, Lightsource bp would consider whether to either continue operations, where infrastructure would be replaced and upgraded, or the Project could be decommissioned and therefore the Project Area returned to agricultural use.

3.3 Livelihoods

Impacts upon people's livelihoods refer to the capacity of community members to sustain their livelihood through income-generating activities such as employment or business. This impact category considers the changes that economic conditions caused by the Project may have on individuals and businesses and whether people experience any personal disadvantage.

3.3.1 Opportunity for Local Employment and Procurement

In relation to the Project, the community has identified that local employment and procurement opportunities, to be generated by the Project, are considered of high importance. Ensuring that local businesses, including accommodation services, hospitality, and retail services, are utilised throughout the Project's construction phase was raised by multiple community members and groups.

> '*Spending money at the shops and cafes for lunch and dinner* and *encourage businesses to open, like the pub for lunches' – Local Landholder*

> *'Rural towns such as Merriwa need all they can get to generate economic activity, and this Project would be great in reviving the town' – Community group representative*

Several key stakeholders raised questions regarding the Project's commitment to consulting with industry/business groups regarding the Project's development and whether this would occur proactively in the preparation for construction. It was stressed that large-scale projects being developed in the region should support fair, full-time employment and training opportunities for local workers. Such groups expressed a desire to work with Lightsource bp proactively to ensure local businesses are included in tenders and job notifications for construction works, to ensure local participation is planned and maximised. Other community members wanted to ensure that all local opportunities were explored before sourcing services, materials, and/or equipment from international markets.

> *'Does the company have an Indigenous Inclusion Plan for Aboriginal people or a Reconciliation Action Plan? Aboriginal people need jobs out of it [the Project]. They also need more awareness of the Project through information provision and consultation to get more understanding of what it means for the community, the environmental outcomes and increased consultation. What's the percentage of Aboriginal people who will be a part of the construction phase? They should have a percentage of Aboriginal employees during construction as part of their NSW participation commitments. There is a need to have something in place. – Traditional Owner*

This was considered particularly important given other project experiences in the region:

> '*Local contractors not being paid, employees not being paid, exploitation of foreign labour, unsafe work practices, no training or apprenticeship for people in the Orana region, bullying and harassment of workers and no engagement with the local community in terms of jobs prospects and ongoing opportunities.'*

Some community members, however, felt that a large proportion of the community in Merriwa were already employed, and consequently local benefits may be more limited. Merriwa's unemployment rate (ABS, 2016) totalled 5.2%. Others consulted, questioned the longevity of the project, in relation to sustainability of employment and community support, which is proposed to be for approximately 30 years.

3.4 Decision-Making Systems

Impacts in relation to decision-making systems relate to people's ability to make meaningful contributions to decisions that affect their lives, including their ability to influence change.

3.4.1 Community Participation and Consultation

In this regard, community members have emphasised the importance of open, transparent, and responsive engagement in relation to the Project. Some residents in the Merriwa community emphasised the need for face-to-face or personal meetings, rather than online or virtual methods, as many residents advised that they did not have access to the internet. It was suggested that many of the mechanisms used by groups in the community are largely informal and in-person and are important to build rapport. For example, one landholder expressed their concern with disclosing private information and commenting on the Project over the phone with strangers. Email updates were also seen to be good method for providing information.

> Local government and community group representatives also emphasised the importance of developing comprehensive community consultation programs. It was noted that other projects had not done so well in this regard, with residents outlining that they had not been heard and had been disregarded. There was also a desire to remain informed and connected as the Project progresses.
> *'Renewable energy projects need to go ahead but they need to have appropriate levels of consultation with varied stakeholders.' – Community group representative*

3.5 Way of Life and Community

Impacts in relation to way of life refers to the potential impacts on how people live, work, play and interact with one another; with community impacts referring to changes in the composition, cohesion, and character of the population, as well as how the community functions and impacts on sense of community and sense of place.

3.5.1 Community Sense of Place

Views expressed by those consulted varied in this regard, with some residents believing the Project's proposed location, away from the town of Merriwa, would have a minimal impact on the Merriwa community; with other community members feeling that the Project would impact negatively on their peaceful rural town.

> *'the town already 'feels safe, with low crime rates and it doesn't feel like the town needs anything else'*

Others felt that new workers and their families may also contribute positively to the community:

> *'There may be new families coming to town, which could help revive the town and bring new energy'*

Concerns were also raised in relation to the broader impact of renewable energy infrastructure being developed on existing agricultural properties, and the co-existence of the industry with the current agricultural landscape. Such concerns have been raised due to people's patterns of work, their connection and attachment to the land, and were raised due to the perceived cumulative effect of multiple renewable energy projects either proposed or in development across the region. This was of particular concern given the importance of agriculture as a key sector in the social locality, with some stakeholders very supportive if the dual use of the Project area would maintain agricultural activities such as grazing.

3.5.2 Sharing of Community Benefits

Community benefits and social investment opportunities were also identified as a potential positive impact of the Project for the local community, through the development of a dedicated community fund or benefit sharing program.

Local benefit sharing programs can over time generate improvements in a community's sense of place, social cohesion, wellbeing, and in the capacity of local organisations and services. A participatory process of identifying local needs and opportunities can result in a greater understanding of community, and in turn, the delivery of more targeted strategies to facilitate improved social/community outcomes. Strategies identified by those consulted that may positively contribute to the local community include:

- Provision of cheaper electricity, given the presence of a renewable energy project in the social locality
- Local Aboriginal community health and education services such as literacy and numeracy programs in line with the Closing the Gap targets
- Support for culturally appropriate land management practices
- Provision of further retail services in Merriwa e.g., grocery store (as there is only one at present)
- Support for local health and medical services, considering that Merriwa does not have specialists such as a physiotherapist, psychologist, paediatrician, or dentist
- Support for the Westpac Helicopter for improved access to medical care
- Improved funding for the provision of aged care accommodation and facilities
- Support for the local school e.g., additional teaching staff
- Sponsorship of a school newspaper service
- Establishment of a local Clontarf Foundation branch through the Merriwa Central School (noting that up to 25% of enrolled students are Aboriginal identifying)
- Facilitate improved access to training through existing training providers to provide localised skill development or an apprenticeship program to the Merriwa community (considering that Muswellbrook is the closest TAFE NSW campus with no transport to and from Merriwa).

3.6 Culture

Impacts on culture include changes that may occur as a result of a Project to the values, shared beliefs, customs, and connections to place of the communities who reside within a social locality.

3.6.1 Aboriginal Cultural Values and Attachment to Country

The social locality in which the Project is located has been identified by some stakeholders as an area with significant historical Aboriginal cultural values, with the Goulburn River identified as a place of Aboriginal cultural importance. There is an understanding that the river had a crossing point within proximity to the Project Area, where differing clans used to gather and trade prior to European settlement. Furthermore, it was noted that approximately forty years ago, archaeological artefacts were found near the Goulburn River where a dam project was proposed, with these finds resulting in the project not proceeding due to the need to preserve culturally significant items.

Traditional owners described their attachment to the land and the cultural values held by the community as follows:

> *'Wonnarauh country has changed a lot over the years with all the coal mining, but it is where our family are, our people, our mob, our descendants, that's what created our sense of community. We own St Clair Mission and we visit our ancestors at Winningham Cemetery, Whinging Maid, Burning Mountain, Biame Cave, Lizard Rock and Tiddlick the Frog.' – Traditional Owners*

Within the Project Area itself, the remains of the historical 'Mawbey homestead', can be identified by 'posts in a paddock', the site of the well-known historical case of the Jimmy Governor murder in 1900. Jimmy Governor was an Aboriginal Australian born on the Talbragar River near Mudgee, who worked on farming properties across the Hunter Valley throughout his life. In 1900 while living with his young family on the Mawbey property, Jimmy Governor murdered a pregnant woman and her child in the Mawbey household following a dispute over wages. His story of lifelong racial and class oppression and the murderous rampage that proceeded has since inspired five novels, a theatre piece, musical tributes as well as the case itself having become an iconic event often referenced within Australia's present-day interracial collaboration and reconciliation efforts (Britton, 2013).

Community groups within Merriwa consulted as part of the Project have indicated that the Jimmy Governor case was an event in time, however '*is not a prominent issue in the community anymore'.* However, traditional owners described the history and significance of the Jimmy Governor event within the Project Area itself as highly important, providing the following context:

> *'Joe and Jimmy Governor is a relevant story to that area. The original tribal group/clan group are the Geawagal clan, who are a subgroup of the Wanaruah. But I don't know of anyone who is Gaewagal. Surely there are some ancestors still there though. The story is of two brothers, Joe and Jimmy Governor, who were bushrangers. They tried to fit into society and one of them married a white woman with red hair, but he was still ostracised, so they went on a rampage. They were actually both caught on St Clair Mission (which is owned by WNAC). Joe was laid out on the pool table of the local Hotel and had his head cut off and sent to England to see if his brain was different to others. They buried him on the outside of the Wingham Cemetery.'*

Further consultation with the Aboriginal community is planned in subsequent phases of the SIA process to seek a better understanding of the cultural values associated with this historical event and the Project Area more broadly.

3.7 Cumulative Effects of Renewable Energy Development

The rate of change across the region, due to the growing number of proposed and active renewable energy projects, and the associated cumulative changes to local communities, was noted by a number of stakeholders during consultation.

The development of other major projects in the region was identified as causing community division and reducing levels of community cohesion. In this regard, reference to the TransGrid Central West Orana REZ Transmission Project was frequently made (proposed to the north of the Project area), with local landholders expressing a degree of uncertainty in relation to the Project and broader renewable energy development in the region. Such uncertainty was described as having the potential to cause stress and anxiety about the future and how projects could impact on way of life and local surroundings.

> '*They are building electricity lines and not telling the truth to community'. – Local landholder*
>
> '*I'm concerned about the powerlines approaching the* area'.*– Local landholder*
>
> '*Farmers are fighting with electricity people about them building big electricity poles through the farmland*'. *– Local landholder 'There has been a lack of upfront research, consultation and available data for the corridor route'. – Community group representative*

Cumulative impacts were also raised regarding service provision in the area, particularly accommodation and health, given the number of projects proposed or underway.

Community members have also raised queries regarding the Project's relationship to the neighbouring Central West Orana Renewable Energy Zone (REZ), currently in planning by the NSW Government, with a stakeholder consulted enquiring as to how Lightsource bp has been able to acquire land outside of this allocated zone for renewable energy development, and another querying how the sector considers their role in changing land uses from agricultural production

> *'We are not opposed to renewable energy projects, but our members main concern is around the conflicting land use with agriculture. This is particularly the case in Merriwa as it is a highly intensive farming area. Yet we can see how these projects can coexist with agriculture'. – Community group representative*

There was also a desire to see renewable energy companies work together more collaboratively to address cumulative impact issues within the region, and through local employment and procurement opportunities do their part in facilitating a smoother energy transition from coal to renewable energy sources.

Once again it was reiterated that with an increasing number of projects across the region, that the industry transition needed to be fair with opportunities provided for secure employment for local people, including training, apprenticeships, and reskilling for both businesses and workers.

4.0 Preliminary Impact Evaluation

Table 4.1 outlines the preliminary impact evaluation undertaken using the DPIE Social Scoping Worksheet (DPIE, 2021a). Notably, it considers the range of social impacts relating to the Project and determines the level of assessment to be undertaken for each identified impact in subsequent phases of the SIA process. The ratings assigned to positive social impacts have been colour coded in shades of blue whereas the negative social impacts are represented in orange.

Table 4.1 Preliminary Social Impact Evaluation

Project Aspect	Potential Social Impact	Duration	Affected Group(s)	Preliminary Impact Significance	Possible Refinements/ Mitigation Measures	Residual Impact Significance	Level of Further Assessment
Establishment of Project infrastructure	Competing land uses, particularly any disruption to farming practices	Construction and operational phases	Host landholders	Low (Unlikely, Minimal)	Consider refinement to design and layout planning that allow for continued farming use of the land, in consultation with host landholders on a case-by-case basis. Consider visual screens to avoid visual amenity from drivers passing by Open, transparent, and accessible communication of Project information Investigate broader options for the Project to facilitate co-existence with agriculture and tourism/recreational sectors.	Low	Standard assessment

Project Aspect	Potential Social Impact	Duration	Affected Group(s)	Preliminary Impact Significance	Possible Refinements/ Mitigation Measures	Residual Impact Significance	Level of Further Assessment
Project planning and development	The development of other proposed projects in the social locality could affect the level of social acceptance of this Project	Planning and development phase	Broader community Proximal landholders	Medium (Possible, Moderate)	Implement thorough community consultation program throughout planning and development process Coordinate and liaise with key stakeholders, community groups and other developers to understand perceptions and concerns, and through consultation collectively mitigate or address issues	Medium (Possible, Minor)	Detailed assessment
Project construction	The provision of jobs and procurement opportunities can increase and/or diversify skills for people in the social locality, increasing levels of human and economic capital for the community	Construction phase	Broader community	Medium (Possible, Moderate)	Develop local employment and workforce management plan to preference local employment and to target training and capacity-building initiatives for local workforce	High (Likely, Major)	Detailed assessment
Project construction	Procurement of local suppliers, services and contractors could increase commercial activity in local towns which may improve economic capital, local service capacity and township stability	Construction phase	Broader community Local service providers and businesses	Medium (Possible, Moderate)	Coordinate efforts and liaise with key stakeholders to coordinate provision of accommodation and other services or suppliers giving preference to local contractors and services Develop local procurement and workforce management plan	High (Likely, Major)	Detailed assessment

Project Aspect	Potential Social Impact	Duration	Affected Group(s)	Preliminary Impact Significance	Possible Refinements/ Mitigation Measures	Residual Impact Significance	Level of Further Assessment
Project construction	Changes to local population and the composition and character of the community due to incoming workforce	Construction phase	Broader community	Medium (Possible, Moderate)	Develop local employment and workforce management plan Open, transparent, and accessible communication of Project information	Medium (Possible, Minor)	Detailed assessment
Project construction	Increased pressure on local facilities and services, particularly housing and accommodation, could affect affordability and availability for other users	Construction phase	Broader community Local service providers and businesses Tourists / visitors Other user groups / sectors	High (Likely, Moderate)	Consider current usage and occupancy and any pressure points e.g. tourist season in construction workforce planning Develop local participation plan and workforce accommodation strategy Liaise with key stakeholders to coordinate provision of accommodation and other services or suppliers	Medium (Possible, Minor)	Detailed assessment
Project construction	Incoming workforce may strain local health care and facilities, leading to an under supply and restricting access for other users	Construction phase	Broader community Local service providers Vulnerable community members	Medium (Possible, Moderate)	Develop local participation plan and workforce accommodation strategy considering placing workers in multiple locations/towns Liaise with key stakeholders to coordinate workforce requirements and impact on local services	Medium (Possible, Minor)	Detailed assessment

Project Aspect	Potential Social Impact	Duration	Affected Group(s)	Preliminary Impact Significance	Possible Refinements/ Mitigation Measures	Residual Impact Significance	Level of Further Assessment
Project construction	Effect on local community values (cultural and ecological) associated with the Aboriginal history of the Project Area and the surrounding conservation areas could affect people's sense of place and attachment to place	Construction and operations	Broader community Recreational users of surrounding conversation areas Local Aboriginal community Community groups	Medium (Possible, Moderate)	Consultation process during EIS and pre-construction to better understand local values and investigate options for responses to any impact Environmental management planning to consider project impacts on ecological, community and cultural values	Medium (Possible, Minor)	Detailed assessment
Project construction	Increase in traffic and change in road conditions could affect road safety of other users, and/or alter conditions of roadside properties, and/or may increase commuter travel times	Construction phase	Proximal landholders and residents Broader community Road users	High (Likely, Moderate)	Support upgrades to local roads prior to construction phase in consultation with Council Development and implementation of a Construction Management Plan in consultation with local communities and key stakeholders Detailed planning transport routes with public safety considerations and information disclosure, consulting with and notifying residents, considering any sensitive user groups (e.g., local school buses)	Medium (Possible, Minor)	Detailed assessment

Project Aspect	Potential Social Impact	Duration	Affected Group(s)	Preliminary Impact Significance	Possible Refinements/ Mitigation Measures	Residual Impact Significance	Level of Further Assessment
Project construction	Increase in noise, vibration, lighting, and dust in the Project Area could cause social amenity disruption for nearby residents, with the disturbance potentially affecting people's wellbeing and day-to-day way of life	Construction phase	Proximal landholders and residents Broader community	Medium (Possible, Moderate)	Development and implementation of a Construction Management Plan in consultation with local communities and key stakeholders Detailed planning of transport routes, local user consideration and information disclosure, consulting with and notifying residents, considering any sensitive user groups	Medium (Possible, Minor)	Detailed assessment
Community consultation	Perceived inadequate community consultation due to lack of face-to-face activities, affecting people's ability to contribute to Project design, planning and decision-making and therefore affecting the level of social acceptance	Planning phase	Nearby residents, broader community	Medium (Possible, Moderate)	Organise in-person community consultation and community information sessions during EIS preparation period, in line with COVID-19 restrictions Continue proactive personal engagement with community members and proximal residents Respond to community suggestions on preferred engagement mechanisms, prioritising personal and face-to-face consultation	Low (Unlikely, Minor)	Detailed assessment

Project Aspect	Potential Social Impact	Duration	Affected Group(s)	Preliminary Impact Significance	Possible Refinements/ Mitigation Measures	Residual Impact Significance	Level of Further Assessment
Community benefit fund	Recipients of the community benefit fund could experience improved social capital, community wellbeing and social cohesion, through improved local service provision and targeted support to the community	Construction and operation phase	Broader community Local service providers Community groups Local government Vulnerable community members	Medium (Possible, Moderate)	Robust community consultation process during EIS preparation and pre-construction period to understand local needs, priorities and aspirations Develop targeted community benefit program to meet local needs and priorities	High (Likely, Major)	Detailed assessment

5.0 Conclusion

This Social Impact Scoping Report has documented the SIA process undertaken during the scoping phase of the Goulburn River Solar Farm Project and forms part of the Scoping Report to inform the issue of SEARs by the NSW DPIE.

This Report has included the compilation of a social baseline profile for the Project, early-stage community and stakeholder engagement to inform the scoping of Project-related social impacts and opportunities, and preliminary social impact prediction and evaluation. The preliminary impact evaluation has been undertaken to inform and support the refinement of Project design and plans to reduce negative project impacts and achieve greater positive project benefits.

As an outcome of this Report, it is understood that a detailed assessment of social impacts is required as part of the EIS and should be informed by an ongoing process of community consultation. As part of the EIS, future stages of the SIA for this Project will include a comprehensive prediction and assessment of social impacts and development of relevant strategies to mitigate the negative and enhance the positive impacts associated with the Project. Further SIA and environmental impact studies will address perceptions of impacts raised by key stakeholders during this phase.

Subsequent phases of the SIA program will involve the following key activities:

- an update of the baseline social profile to ensure that any further data relevant to the impacts identified is obtained.
- further validation and identification of affected communities and vulnerable groups.
- provision of feedback to near neighbours, community members and key stakeholders on the outcomes of the issues raised in the scoping phase and communication of the Project's SEARs (once issued), including an outline of the next steps in the assessment process and opportunities for community input.
- further engagement with near neighbours, community members and other key stakeholders on key impact areas. This will involve feedback on the outcomes of the SIA and EIS and will provide opportunities for input to the development of appropriate mitigation and enhancement measures to address impacts and any residual effects and maximise Project benefits.
- a comprehensive assessment and evaluation of social impacts against existing baseline conditions.

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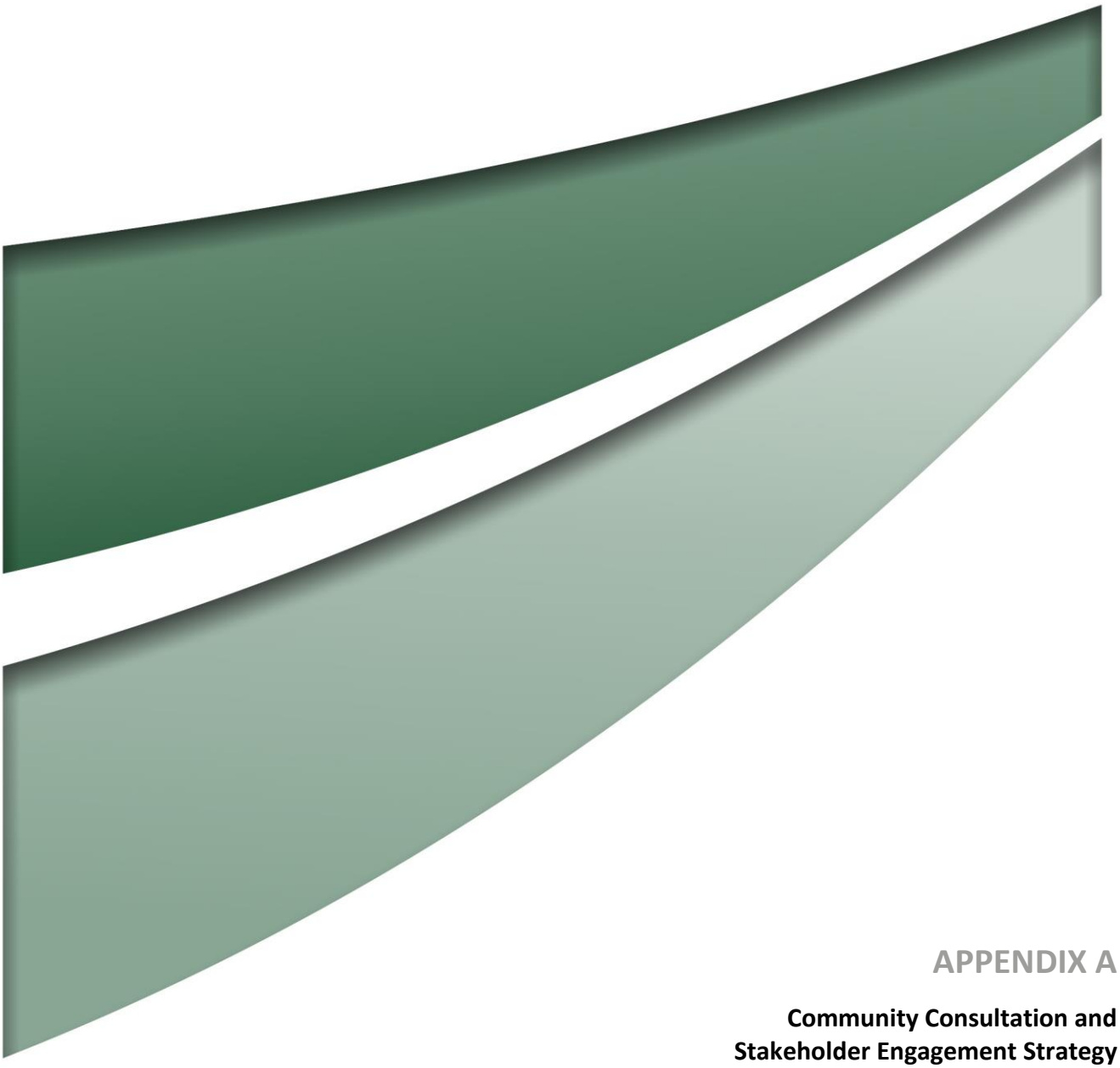

APPENDIX A

Community Consultation and Stakeholder Engagement Strategy

umwelt
Environmental & Social Consultants

lightsource bp

GOULBURN RIVER SOLAR FARM

Community and Stakeholder Engagement Strategy

FINAL

December 2021

GOULBURN RIVER SOLAR FARM

Community and Stakeholder
Engagement Strategy

FINAL

Prepared by
Umwelt (Australia) Pty Limited
on behalf of
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Report No. 21507/R06
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1.0 Introduction

The proposed Goulburn River Solar Farm (the Project) by Lightsource Development Services Australia Pty Ltd (Lightsource bp) (the proponent), comprises the construction and operation of a 520 megawatt (MW) photovoltaic solar farm and battery energy storage system (BESS), approximately 36 km southwest of Merriwa, in the Upper Hunter local government area of the Hunter region, and bordering the Central West region of New South Wales (NSW).

Lightsource bp was formed and commenced operations in Australia in December 2017 through a partnership between European solar farm developer Lightsource Renewable Energy and global energy company BP. Lightsource bp's existing projects under construction include Wellington Solar Farm (NSW), the West Wyalong Solar Farm (NSW) and the Woolooga Solar Farm (QLD). In addition, development approval has been obtained for Wellington North Solar Farm (NSW), Naring Solar Farm (VIC), and Mokoan Solar Farm (VIC).

1.1 Purpose and Objectives

This Community and Stakeholder Engagement Strategy (the Strategy) outlines the objectives, approach, and implementation program for engaging and consulting with the community and stakeholders on the Project during the Project's planning and assessment phase.

The Strategy's purpose is to inform the approach and process of community and stakeholder engagement for the scoping phase of the Project (as part of the Request for Secretary's Environmental Assessment Requirements (SEARs)) and the Environmental Impact Statement (EIS), as part of the Project's State Significant Development (SSD) application to be lodged with the NSW Department of Planning, Industry and Environment (DPIE). Further, the Strategy supports the Social Impact Assessment (SIA) process, one of the key technical studies of the EIS which relies heavily on community participation and input.

As noted in the NSW DPIE *Undertaking Engagement Guidelines for State Significant Projects* (2021), and the NSW DPIE *Social Impact Assessment Guideline for State Significant Projects* (2021), community participation objectives are for engagement to be: open and inclusive, easy to access, relevant, timely, and meaningful. Proponent-led engagement is understood as a fundamental part of project planning and development.

This Strategy has the following objectives:

1) To ensure people potentially affected by the proposed Project understand the project and its potential effects.

2) To consider the views of people in a meaningful way, including their values, interests and priorities, and how impacts may be experienced from their perspective.

3) To scope social and community interests or issues, by collecting relevant data, evidence, and insights to ensure representativeness and diversity of views.

4) To provide opportunities for people to input into project design and assessment matters and contribute to solutions to address impacts.

5) To ensure people know how their input has been considered, and what strategies will be put in place to address their concerns.

6) To listen, understand and respond to matters and concerns raised.

1.2 Project Overview

Lightsource bp propose the development of the Goulburn River Solar Farm, involving the construction, operation, maintenance and decommissioning of the solar farm. Additionally, the Project includes BESS infrastructure components, associated infrastructure including operation and maintenance buildings, civil works, and electrical infrastructure required to connect to the existing electricity network.

The solar farm and BESS are proposed to be located on two single freehold properties across multiple lots, currently used for livestock grazing activities. There are no identified immediate residential neighbours adjacent to the proposed Project Area due to it being surrounded by the Goulburn River National Park. The Project Area (Solar Farm and BESS) covers an area of approximately 800 hectares (ha). Access to the Project is proposed via Wollara Road, Merriwa from three existing driveways, providing northern, southern and central access to the site.

Locations of any powerline routes and potential road upgrades (if required) will be finalised as the Project design progresses.

Table 1.1 outlines the key Project milestones that relate to this Strategy.

Table 1.1 Key project milestones

Activity	Indicative Timing
CSEP development	August 2021
Launch of Project	September 2021
Round 1 stakeholder and community engagement	September - November 2021
Submission of Scoping Report to DPIE	November 2021
Issuance of SEARs	December 2021
Round 2 stakeholder and community engagement	January 2022
EIS Lodgement	May/June 2022
Public exhibition period	June/July 2022
Determination	December 2022

1.3 Approach

Best practice community and stakeholder engagement design and delivery is guided by the International Association of Public Participation (IAP2) Public Participation Spectrum, which outlines differing levels of public participation (refer to **Figure 1.1**).

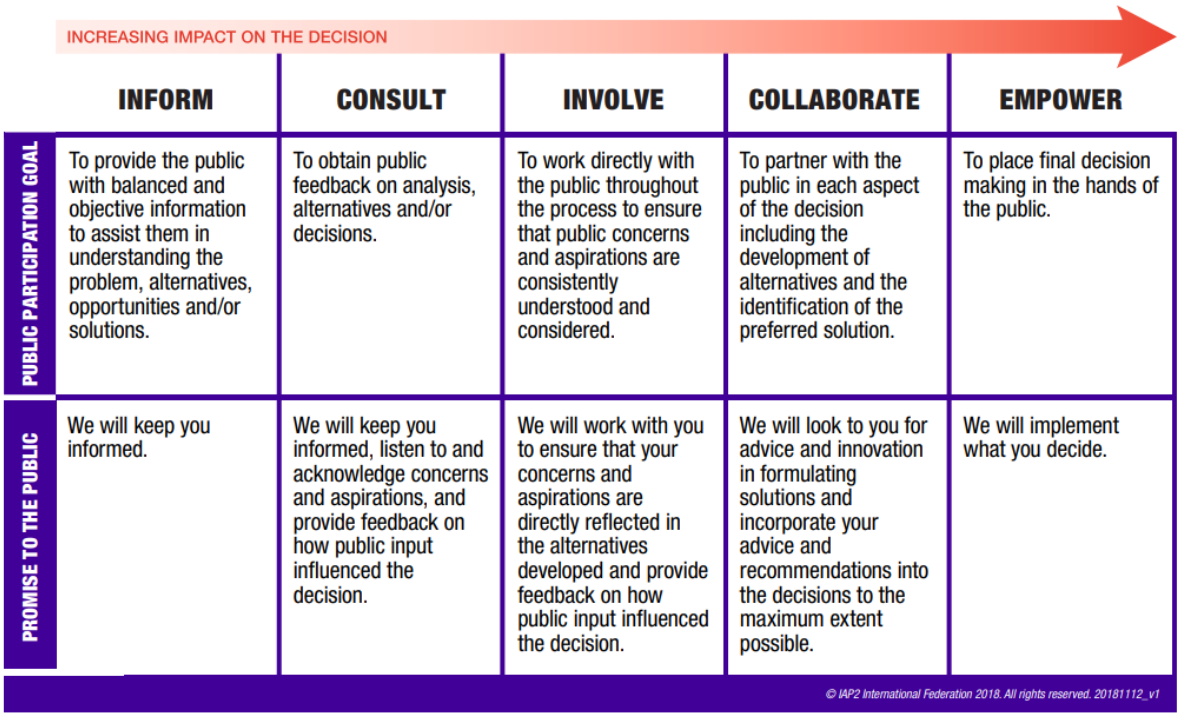

Figure 1.1 IAP2 Public Participation Spectrum

Source: IAP2 International Federation (2018)

In the context of NSW, the approach to stakeholder and community engagement will largely be informed by the DPIE *Undertaking Engagement Guidelines for State Significant Projects* (2021), which guides proponents:

- To plan engagement early
- To engage as early as possible
- To engage effectively, proportionately, innovatively, and transparently throughout the process.

The Project will also be informed by the NSW Government's *Large-Scale Solar Energy Guideline for State Significant Development* (2018), which requires proponents to include the following components of their stakeholder engagement program:

- To engage with communities about the proposed project, the likely infrastructure layout, access routes and potential location of ancillary infrastructure
- To listen to the community's concerns and suggestions
- To discuss potential noise impacts, the potential visual impacts and landscape changes, the proposed siting and potential alternatives
- To discuss issues for landholder agreement if the project is approved, including siting, access, compensation, responsibility for decommissioning and rehabilitation.

Further, as SIA is applicable to all SSDs in NSW, which is informed by, and reliant on, the outcomes of early, and ongoing community and stakeholder engagement through the assessment of the Project.

Two key rounds of engagement are proposed for the Project prior to lodgement of the EIS.

1.3.1 Round 1 (Scoping Phase)

The scoping phase will include community engagement activities to introduce the Project, share preliminary information, and to scope and understand stakeholder and community views, issues, interests and concerns in relation to the Project. This round of engagement will provide an opportunity for Lightsource bp to establish working relationships with key community groups and stakeholders. Information obtained will proactively inform the Project's design and planning.

The Scoping Report will include community views and any concerns, as well as Project constraints and opportunities identified as a result of engagement. Discussion items to include in consultation activities appropriate to this phase will include topics relating to:

- Awareness and attitudes towards solar farm development (and other renewables or industry development in the local or regional area)
- Awareness and public perceptions of Lightsource bp
- Community values, identity, local needs and aspirations
- Areas of value and use within and near the Project Area
- Potential issues, concerns or interests related to the proposed project
- Potential sensitive receivers and/or vulnerable community groups
- Preferred engagement mechanisms, frequency and content.

1.3.2 Round 2 (EIS Phase)

Proposed engagement activities undertaken during Round 2 will be focused on exploring and validating the matters identified during the Scoping Phase. The findings or results from the various technical studies that comprise the EIS will also be shared with Project stakeholders during this round. This assists in gathering feedback on the predicted project impacts and people's perceptions of them.

Therefore, engagement in this round will focus on:

- Sharing information and gathering feedback on the proposed design of the Project
- Assessment of perceived or key social and environmental issues, impacts and opportunities associated with the Project
- Potential mitigation or enhancement strategies to address and respond to issues, impacts and opportunities
- Existing capacity of local service provision and projected future demand as relevant to the predicted Project impacts
- Measures to improve collaboration between Lightsource bp and community or stakeholders, including potential community investment and benefit-sharing opportunities.

Engagement outcomes will be collated, integrated and documented within the Social Impact Scoping Study (Round 1) and Social Impact Assessment Report (Round 2). Engagement outcomes will also be disseminated throughout the EIS team to ensure that community and stakeholder inputs are considered, and where possible responded to and integrated, to ensure the best outcomes for the Project and the community.

2.0 Social Context

2.1 Policy Setting

The NSW Government's current energy security policy and approach to a clean energy transition is being delivered through the strategic development of the renewable energy sector, as outlined through the NSW Government's *Renewable Energy Action Plan* (2013), *Electricity Strategy* (2019) and the *Electricity Infrastructure Roadmap* (2020). This policy context is relevant to inform the public positioning and key messaging for the planning and development of the Goulburn River Solar Farm.

The Project Area is in close proximity to the Central West Orana Renewable Energy Zone (REZ) in NSW, situated to the west of the Project Area, and the proposed Hunter REZ to the east. This policy context has seen the development of numerous solar and wind farms in recent years planned across the region. In order to deliver renewable energy into the National electricity grid to support the REZ, transmission infrastructure continues to be required, resulting in upgrades to existing networks or the establishment of new transmission routes for projects within the region.

As a part of TransGrid's recently announced Central West REZ Transmission Project, TransGrid is planning new 500kV and 330kV transmission lines, substation(s) and related infrastructure to support the development of the Central-West Orana REZ. Investigations are currently underway for a study corridor running north-west from the existing 500kV network to the immediate north of the Project Area and south of Merriwa, then passing south of Dunedoo, and connecting to the existing network east of Wellington. The corridor also includes an option to extend further south to near Lake Burrendong and TransGrid's existing substation at Wollar will also be upgraded as part of the REZ Project. In recent months, some local groups have formed specifically in response to the Central West REZ Transmission Project, including the Merriwa-Cassilis Alliance who have established a working group with TransGrid to advocate for alternative routes for the Central West REZ Transmission Project, so as not to interfere with agricultural or private land uses.

It must be noted, however, that Goulburn River Solar Farm Project will be connecting into TransGrid's existing infrastructure, a 500kV line from Mt Piper to Liddell and therefore is not reliant on the TransGrid infrastructure proposed as part of the REZ.

2.2 Community Characteristics

The Project Area is located at the far west of the Upper Hunter Shire, approximately 36 kilometres southwest from the regional town of Merriwa. Merriwa has a population of 1,761 people (approximately 864 households) with a median age of 44 years (ABS, 2016). The broader community places high value on its farming heritage and present-day practice, with a rich agricultural history.

The Project Area is proposed to be situated on an area of cleared freehold land surrounded by the Goulburn River National Park. Historically, the land was occupied by the Wonnarua (or Wanaruah) Nation, with Gamileroi and Wiradjuri Peoples also frequenting the area. The Wonnarua Nation Aboriginal Corporation and the Wanaruah Local Aboriginal Land Council are existing governance structures to represent the traditional owners of the land today. There are over 300 known Aboriginal cultural sites within the Goulburn River National Park, however there is one known cultural site within the Project Area

Whilst the proposed site does not have direct neighbouring properties, the Merriwa community is considered close-knit and well-networked, with several organised community groups as identified in above and outlined further in **Section 3.0**.

The small villages of Cogan and Wollar, located within the Mid-Western Regional Council area, are the closest communities to the proposed Project Area, located approximately 15 and 16 km to the south and south-west, respectively (Six Maps, 2021). At the last census, 69 people (mean age of 41 years) are recorded living in 50 dwellings in Wollar and four people reside in Coggan (ABS, 2016).

Wollar has had significant population decline since the 2011 Census, with a decrease of 74% (191) of its population. In 2016, 82% of the remaining residents were employed in mining and agriculture activities (ABS, 2016), with Peabody's Wilpinjong Coal Mine only 1.5 kilometres to the south-east. Peabody has acquired all but one private property in Wollar as a part of the mine's expansion approval in 2018.

Development consent for the 280MW Wollar Solar Farm was granted to Wollar Solar Development Pty Ltd in February 2020 and is located on the western side of Barigan Road, approximately 7 km south of Wollar Village. Construction began late in 2020, with connection to TransGrid's existing infrastructure and is expected to take approximately 18 months to complete. The Solar farm is expected to operate for 30 years.

The Mid Western Regional Council area also includes the larger township of Mudgee, a popular regional tourist area, which is located approximately an hour away (77 km) from the Project Area. Unlike Merriwa, Mudgee has ample supply of short and long-stay accommodation providers which could potentially service the Project's workforce needs.

The infographics presented in **Figure 2.1** outline key demographic characteristics of Merriwa and Mudgee (the social locality) that will inform this Strategy.

Figure 2.1 Community demography snapshot

Source: ABS Community profiles

2.3 Key Project Considerations

Proposed solar energy projects across NSW have in recent years received diverse responses from local communities on the perceived environmental and social impacts of the developments, and the level of social acceptance. Following an initial review of public submissions received on recently announced or developed solar projects, as well as a scan of local media and other publicly available documentation, we understand the following potential community issues to be of relevance for consideration in planning and developing the Project:

- A perceived inadequacy with community engagement approaches by other proponents, including a lack of adequate community representation and limited information provision
- Land use conflict with productive agricultural areas
- Visual amenity – views of solar panels, glare and glint, lighting issues and lack of screening
- A lack of local economic benefit realised and detraction from local tourist areas and attractions
- Construction workforce changing local townships – effect on supply, demand, and accessibility of local services (housing, health, education, recreation, employment etc.)
- Little research demonstrated in the devaluation of properties and overall local property market changes, especially where location of site is close to townships and/or to residential properties
- Traffic issues for local roads, including road deterioration, effect on school buses, safety on roads and increased traffic noise
- Localised noise caused by construction activities
- Concerns about electromagnetic fields (EMFs), radiation issues for residents increasing health risks, hazardous material posing a hazard/safety risk, heat generation, the welfare of cattle and sheep, spread of noxious weeds, and wildlife deaths associated with heat
- Established community groups mobilising in response to other projects in the region could affect how communities perceive and respond to the project
- Cumulative community effects of multiple projects in the local area at once.

3.0 Stakeholder Identification

Stakeholder groups identified as relevant to the Project are outlined in **Figure 3.1** below.

Figure 3.1 Stakeholder Groups

A stakeholder identification process has been undertaken to further define relevant stakeholders for the Project within each of these stakeholder groupings. An overview of the stakeholder identification process is presented in **Table 3.1** which will be used to guide engagement planning throughout the EIS process as per the 'Level of Engagement' indicated**.**

Table 3.1 Stakeholder identification

Stakeholder Group	Stakeholders	Level of Engagement (IAP2)	Potential Interest/Concern
Nearby residents/ landholders	Approximately 17 Properties along Wollara Road, Merriwa are residential	Consult	Transportation route - Accessibility impacts from construction workforce Land use conflict Cumulative impacts from multiple projects Conservation and ecological values Sense of community/sense of place Commercial stimulus for local economy
Community and special interest groups	NSW Farmers Association – local branch Hunter Region Landcare Network Scone Landcare Inc Merriwa-Cassilis Alliance (MCA) Incorporated Merriwa Country Women's Association Cassilis Country Women's Association Merriwa District Progress Association Merriwa Healthy Environment Group Inc Merriwa Historical Society Merriwa Railway Society Wollar Progress Association	Consult	Conservation and ecological values Land use conflict Community values Site access Cumulative impacts from multiple projects Accessibility impacts from construction workforce Sense of community/sense of place Commercial stimulus for local economy Local infrastructure and services provision
Local industry groups, businesses and service providers	Chambers of Commerce (Scone, Mudgee, Gulgong) Service providers (employment, training, health, accommodation, recreation, tourism etc.) Utilities providers; TransGrid, Essential Energy, Telstra Bus companies Emergency services such as RFS, SES, Ambulance and Police	Involve	Increased demand/use of local and regional services by construction workforce Livelihood impacts Public safety for other road users (e.g., children and school bus drop off locations) Commercial stimulus for local economy
Local Government	Upper Hunter Shire Council	Collaborate	Cumulative impacts from multiple projects Accessibility impacts on local and regional services and businesses

Stakeholder Group	Stakeholders	Level of Engagement (IAP2)	Potential Interest/Concern
	Mid-Western Regional Council Muswellbrook Shire Council	Involve	Commercial stimulus for local economy Development of a Voluntary Benefit Agreement (VPA) if required Local infrastructure and services provision (e.g., road upgrades) Land use planning Concerns of community and local stakeholders
State/Commonwealth Government	DPIE Secretary DPIE Director - Energy Infrastructure and Renewable Energy Zones NSW Energy Corporation NSW Parks and Wildlife Service NSW Environment Protection Authority (EPA) Aboriginal Affairs NSW Transport for NSW Heritage NSW Commonwealth Department of Agriculture, Water and the Environment	Involve	Regulation and compliance with relevant legislation/regulation Planning and assessment process Cumulative impacts from multiple projects Alignment to NSW Government initiatives Transport accessibility and potential road upgrades
Traditional Owners and Aboriginal stakeholders	Wanaruah Local Aboriginal Land Council Mudgee Local Aboriginal Land Council Wonnarua Nation Aboriginal Corporation	Involve	Impacts on cultural connection to Country or place or on cultural values Inequity of impacts on Aboriginal community Cultural heritage surveys
Broader community	Residents of the Upper Hunter LGA Residents of the Mid-Western LGA Residents of the Muswellbrook LGA	Consult	Cumulative impacts from multiple projects Accessibility impacts from construction workforce Land use conflict Regional economic benefits Infrastructure and services provision
Local media	The Scone Advocate Muswellbrook Chronicle 2NM radio Hunter Valley/Power FM	Inform	Cumulative impacts from multiple projects Regional economic benefits

4.0 Engagement Methods

The engagement of stakeholders and community groups will include a combination of:

- **Consultation and engagement:** to facilitate stakeholder involvement in the identification of issues/impacts, areas of interest/concern and strategies to address the issues raised.
- **Information provision:** to improve knowledge and awareness of the company, its activities, the project, and key issues/impacts as they arise.

Various methods will be used to engage with the different stakeholder groups based on the type of information being conveyed, level of feedback required, understanding of the stakeholder needs regarding engagement and identified stakeholder engagement preferences. This will include existing or previous mechanisms utilised by Lightsource bp and additional mechanisms to target the stakeholders identified for this Project and the SIA and EIS requirements.

Table 4.1 outlines the engagement mechanisms that will be used to engage each stakeholder group, that aligns with the level of engagement as noted in **Table 3.1**.

Table 4.1 Engagement mechanisms

Stakeholder Group	Project Website	Social media	Media Release	Community Hotline	Project Email	Project Information Sheets	Community Information Sessions	Personal Interviews/ Meetings	Project Meetings	Community Feedback Form
Host landholder							✓	✓		✓
Residents of neighbouring or nearby communities	✓	✓	✓	✓	✓	✓	✓			✓
Local businesses and service providers	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Local Government	✓		✓					✓	✓	
State/Cth Government								✓	✓	
Aboriginal stakeholders	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Community and special interest groups	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Broader community	✓	✓	✓	✓	✓	✓	✓			✓
Local media	✓	✓	✓	✓	✓	✓				

4.1 Engagement Materials

Materials to be used to support the engagement activities outlined in **Section 5.0** will be prepared prior to delivery. Materials and tools to support the proposed engagement activities include the following:

- Meeting agendas/run sheets
- Website content
- Interview and survey guides
- Feedback forms for community information sessions
- Project information sheets/flyers/posters.

4.2 Key Project Messages

Key messages will be developed and refined throughout the EIS process, around the following categories. These will be used to inform the delivery of engagement activities and include:

1) **Project Messages** – details on the site and plans, 'quick facts' and profile of the proposed Project

2) **Process Messages** – the development planning and assessment process and current Project status, including key milestones for the EIS submission, public exhibition and determination, when stakeholders and the community can be involved through consultation to influence design and project outcomes, and the timing of the proposed Project, to create awareness on the anticipated stages of construction and operation.

3) **Issues and Benefits Messages** – key issues in relation to the Project i.e., engineering, layout and design, social and environmental issues, community interests or concerns, and positive outcomes of the Project for the community, including local benefit sharing opportunities to be delivered through the Project.

4.2.1 The Project

Who is Lightsource bp?

- Lightsource bp is a global market leader in the funding, development and long-term management of large-scale solar projects and smart energy solutions and we work closely with local businesses to deliver sustainable renewable energy projects. Lightsource bp entered Australia in December 2017 through a partnership between European solar farm developer Lightsource Renewable Energy and global energy company bp. Lightsource bp's has a total of 500 MWp across three projects underway with the Wellington Solar Farm in the final stages of commissioning, and the Woolooga and West Wyalong Solar Farms due to complete construction early 2021.

What is the Project and where is it located?

- Lightsource bp are proposing to develop a solar farm on 2,000 hectares of farmland, surrounded by and adjacent to, the Goulburn River National Park.
- The Project Area is located approximately 36 kilometres from the town of Merriwa and 16 kilometres from Wollar, NSW.
- The site will be accessed via Merriwa, along the Wollara Road.
- The Capital Investment Value of the Project is $750 million AUD.

Why was the site selected?

The Project Area is already cleared for agriculture and is relatively secluded from neighbouring residences, meaning it is less likely to affect many people or their properties.

There are two private property owners whose land is affected by the Project and each has already entered agreement with Lightsource bp to sell, access and utilise the land for the Project.

The site already has a transmission line traversing through it, therefore no new transmission lines are needed to connect to the grid. It is proposed that the Project will connect into this existing transmission line via installation of an on-site substation. Standard operations of Lightsource bp include low density grazing as a means of retaining an agricultural purpose and to reduce undergrowth and bushfire risk.

The Goulburn River National Park is not in an area identified as a Renewable Energy Zone. How has this area been approved for the Project? Has Lightsource bp leased or bought the land?

- Lightsource bp has entered an 'option to purchase agreement' with the two current landowners in the Project Area. The land is zoned RU1 – Primary Production (i.e. agricultural), with the surrounding land zoned as National Park. Energy generation is a permitted land use within land zoned RU1, and the Project does not plan to enter the National Park. The Central West Orana Renewable Energy Zone is nearby, however, this Project is located outside of its area and will not utilise any of the REZ infrastructure.

What will the Project deliver?

- The project will deliver up to 500 construction jobs over a 20-month period, and up to 20 full time positions.
- The Project Area is approximately 800 hectares in size and will have a capacity of powering 156,000 homes, at it's peak producing over 5% of NSW's average electricity demand.
- The solar farm is comprised of solar photovoltaic (PV) modules and a battery energy storage system (BESS) that deliver renewable energy on demand and help stabilise the electricity grid.
- The solar farm is proposed to be operational for a minimum of 35 years.

How long will the Project be operational?

- Current plans intend for the Project to be operational for 35-40 years, based on the expected lifecycle of the panels. At the end of the Project life, Lightsource will make the decision to either continue the operations of the Project where infrastructure would be replaced, or the Project could be decommissioned and return the land to agricultural use. Lightsource bp is soon to announce a commitment to ensure the solar panels are recycled where practical upon decommissioning, leaving minimal need for landfill.

What infrastructure will be required?

- Once constructed, the Project will include site offices, an operations and maintenance building, a substation, solar panels and invertors, BESS, carpark area, and storage facilities.

When will Lightsource bp bid for network access?

- Lightsource bp has been working with the Transgrid, the Network Operator over the past few months to explore options for the Project to connect to the network. Initial studies indicate a feasible connection option is available at the site and studies continue to define the technical aspects of the connection. This process is forecast to conclude in late 2022.

Who will own and operate the solar farm?

- Lightsource bp intends to own and operate the solar farm through the appointment of an operations and maintenance contractor, following the Engineering, Procurement and Construction (EPC) Contractor's term.

What will be done to manage the increase in local traffic and changes to the roads?

- A preliminary survey of the main access road to the Project Area has been undertaken and Lightsource bp have noted the current deteriorated state of Wollara/Ringwood Road. Lightsource bp plan to manage the road throughout the construction period to ensure the road is safe for existing traffic and for our construction workforce. In consultation with Upper Hunter Shire Council, Lightsource bp have committed to complete road upgrades and rehabilitation following the construction works. It is expected that the road will be returned to the same, or to a better standard than its current state.

4.2.2 The Process

What is Umwelt's role on the Project?

- Umwelt Australia (Umwelt) is an environmental and social consultancy with over 25 years' experience providing speciality services in ecology, heritage, environmental planning, community engagement, and social impact assessment. Lightsource bp have engaged Umwelt to prepare the Environmental Impact Statement (EIS) for the Project and as part of this, will undertake several technical studies guided by the Secretary Environmental Assessment Requirements (SEARs) to be issued by DPIE in late 2021 or early 2022. Several preliminary assessments are currently underway during the current scoping phase of the Project, including the Social Impact Assessment which includes consultation with local landowners, community groups, service providers and businesses to understand the potential impacts of the Project (positive and negative) on the community.

If approved, when will the Project commence?

- Pending the Project's planning and assessment process and determination, construction would commence in mid-2023. Due to the scale of the Project, the construction period is expected to be 18-24 months in duration.

What is the assessment process?

- The Project is currently in the early stage of planning and assessment. It will be assessed as a State Significant Development (SSD) under Part 4 of the NSW *Environmental Planning and Assessment Act 1979* (the EP&A Act). The NSW Department of Planning, Industry and Environment (DPIE) is the State planning authority for the Project. The Project will also be assessed under the bilateral agreement between the Commonwealth of Australia and the State of NSW relating to environmental assessment under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). This agreement allows the Commonwealth Minister for the Environment to rely on NSW environmental impact assessment processes for assessing actions under the EPBC Act.

- The EP&A Act requires a Scoping Report to be prepared and submitted to DPIE. DPIE will then prepare and issue the Secretary's Environmental Assessment Requirements (SEARs) for the Project, which would outline the range of environmental and social matters to be addressed in the Environmental Impact Statement (EIS).

- Once the EIS is lodged, a public exhibition period will commence for a period of approximately 4-6 weeks to encourage community and agency feedback on the proposal. A Response to Submission (RTS) Report addressing this feedback is then developed and lodged with DPIE, who will assess the development application together with the EIS to consider all Project impacts assessed, as well as public submissions received, and provide a project determination to Lightsource bp.

- Lightsource bp have recently engaged Umwelt Environmental and Social Consultants to prepare the EIS for the Project.

What is included in the EIS?

- A range of technical studies will be undertaken to ensure environmental and social impacts are identified and appropriate measures are considered to mitigate or enhance the impacts.

- Assessments within the EIS will include, noise, biodiversity, visual amenity, Aboriginal and non-Aboriginal heritage, traffic and transport, social and community, water and soil resources, and hazards and safety.

- A Social Impact Assessment (SIA) is one of the studies undertaken as part of the EIS to assess the effects of the Project on the community.

- Umwelt and Lightsource bp will be consulting with the community during both the scoping phase and during the EIS preparation period, to understand any concerns, interests, issues, or the benefits that people perceive the Project may have. This consultation is an important part of the Project's planning and design, as feedback provided by the community is integrated throughout the planning process to inform the technical studies and Project design.

- Lightsource bp will endeavour to undertake regular, open and transparent engagement with the local community and stakeholders throughout the process.

What community engagement activities will be undertaken for the Project?

- Lightsource bp and Umwelt will be consulting with the local and wider communities surrounding the Project, including Aboriginal community representatives, to gain a detailed understanding of the views, issues, interests, and feedback on the Project. Councils and NSW Government agencies will also be consulted.

- A first round of engagement will occur in September 2021 to introduce the Project and to gather early feedback.

- A second round of engagement is expected to take place in 2022 during the preparation of the EIS, to understand the impacts on the community and to provide the outcomes of the EIS technical assessments to the community.

- Engagement activities to be organised will include project briefings, one on one meetings or interviews, community information sessions, and community surveys.

- Prior to the determination of the Project from the DPIE, the EIS will be made public, allowing for submission to be made by any member of the community or interested party. This gives the public and the wider community the opportunity to contribute directly to the Project's assessment and determination following the two rounds of community consultation.

When will face-to-face community consultation take place?

- Lightsource bp and Umwelt would like to host an in-person community event during the EIS preparation period, in early 2022. As COVID-19 restrictions have recently eased, the team is looking to hold individual face to face meetings with community members. Further, the Social Impact Assessment process as it progresses will include a range of community consultation activities where the team hopes to hear from different groups and members of the community. These activities will be organised and promoted in the coming months. A meeting with the Project team can also be organised at any time by getting in touch with us.

Where will materials required for the Project be sourced from?

- The procurement of materials for the Project covers global markets including Europe and Asia as well as domestic markets for other requirements. Lightsource bp works to ensure that all our suppliers are passed through extensive due diligence processes, including investigation into our suppliers' Environmental, Social and Governance practices before purchases are made.

How is Lightsource bp working with other renewable energy developers across the region?

- Although this Project is not situated in the Central West Orana Renewable Energy Zone, Lightsource bp is an active member of an Industry Roundtable hosted by RE-Alliance, where several developers in the region are working together on how to best maximise local benefits with a particular focus on employment generation. Lightsource bp is also a member of the Clean Energy Council and are involved in a number of their working groups, including their Community and Stakeholder Engagement working group.

Will Lightsource bp be consulting with local industry groups?

- Lightsource bp plans to consult with and work with a range of local stakeholders including industry groups, businesses, service providers, and community and environmental organisations as the Project planning and assessment process progresses. Initial meetings have been held in recent months with some of these groups, and as the Project commences the preparation of the EIS, further consultation and feedback from local groups will be sought to ensure that the extent of the impacts and opportunities are understood, and how to best work together in planning and managing the Project as it progresses.

4.2.3 Issues and Benefits

Renewable Energy Provision

- Solar energy development supports the diversification of NSW's energy mix and more broadly is contributing to Australia's clean energy transition.

- This project will have the capacity to generate 520 MWp of clean electricity each year; enough to supply electricity to approximately 180,000 homes.

- The project's generation of solar energy will ensure that 705,000 tonnes of carbon is not emitted into the atmosphere, equating to taking approximately 254,000 cars off the road.

Workforce and Employment

The Project intends to source employment locally as much as possible to provide opportunities to local job seekers and contractors and to maximise the commercial benefit for the local community. Lightsource bp's recently constructed Wellington Solar Farm Project sourced approximately 35% of the workforce from the local area; for the Goulburn River Solar Farm Project we would like to do better.

It is anticipated that between 300-500 jobs will be available within the construction period, and ongoing employment of up to 10 jobs during operations. Lightsource bp plan to work closely with Council and other key stakeholders to deliver an appropriate business engagement, employment, and accommodation strategy for the Project. Construction roles would be made up of licensed electrical trade personnel, mechanical and electrical trades assistants, machinery operators, riggers and labourers.

Lightsource is working to a target of 35% locally sourced labour for construction and will be working with stakeholders during the planning and assessment phase to further develop plans.

Construction workers will be accommodated in towns within approximately a 1-hour drive of the site, such as Merriwa, Mudgee, Gulgong and Rylstone. The outcomes of the Social Impact Assessment together with feedback from the community will support Lightsource bp in refining these plans.

Local service providers and suppliers will also have opportunities to contract services during the construction period.

Lightsource bp will own and operate the solar farm and will employ a local resource to manage the site operations.

Traffic and Effect on Local Roads

During peak construction, we estimate approximately 80% of the 350 personnel would travel to and from the Project Area via shuttle buses, indicating approximately 14 two-way shuttle bus trips per day. There would be an additional estimated ~60 two-way light vehicle trips per day along Wollara Road from both the north and south during construction. Heavy vehicles would be restricted to travelling to the Project Area from the north and estimate 55 two-way heavy vehicles per day during peak construction.

During the first 1-3 months of the construction, mobilisation would see traffic movements that could include:

- Light vehicles to mobilise workers (daily) to and from site
- Shuttle bus services to facilitate workers to and from the site on a daily basis from nearby population centres
- Delivery of infrastructure including temporary offices and associated equipment, power generation equipment, ablutions
- Delivery of equipment and machinery for civil construction, clearing (if required) and general site establishment
- Delivery of structural components and PV equipment

More intense construction would be expected to follow during months 3-17 to achieve mechanical completion with the following traffic movements:

- Light vehicles to mobilise workers (daily) to and from site – numbers ramping up from mobilisation

- Shuttle bus services to facilitate workers to and from the site on a daily basis from nearby population centres
- Delivery of equipment and machinery for structural, electrical and civil construction activities
- Ongoing delivery of PV and electrical equipment including deliveries of major equipment such as inverters, switchgear, transformer etc.
- Trucks for removal of waste.

Following mechanical completion, the Project would move into a commissioning phase estimated from months 18 - 20 of the construction phase, where equipment deliveries and workforce numbers would be significantly reduced. During commissioning, the majority of traffic would be expected to be light vehicles for personnel movement.

Following commissioning, the Project would move into its operations phase, which would be expected to extend for the life of the asset with very limited light vehicle movements predominately for routine operations and maintenance personnel and activities.

At the end of the life of the Project, approximately 35 years depending on possible extensions to the development consent, it is envisaged that decommissioning would take place which would involve mobilisation of a workforce and additional temporary facilities, and then move to the removal of equipment and infrastructure. At this time, it is expected that significant movements of light vehicles and trucks for transporting waste will occur. The decommissioning phase would be expected to last less than eight months.

Community Sustainability and Social Investment

Lightsource bp has an established relationship with the Clontarf Foundation, an Australian organisation that works to provide educational opportunities and life skills support to Aboriginal and Torres Strait Islander boys and young men. The Clontarf Foundation partners with schools across the country to form Clontarf academies. Lightsource bp's support involves establishing an ongoing partnership with the Clontarf academy closest to each Lightsource bp project nationwide by providing annual monetary support and/or sponsorships.

The community engagement process during the EIS will support Lightsource bp in understanding the community's values, priorities and aspirations in order to consider establishing relationships and partnerships with local or regional groups through a community investment program or further sponsorship initiatives.

Lightsource bp is committed to building strong relationships in the local community from the early stages of Project planning and development.

Hazardous Materials

Hazardous materials would be limited to that associated with the substation (e.g. transformer insulating oil) and the BESS.

Environmental Matters

Ecological surveys have recently commenced in accordance with the Biodiversity Assessment Method (BAM), approved by the NSW Government. Several ecological communities have already been identified living within or near the Project Area. The Environmental Impact Statement (EIS) will assess any possible impacts that the Project will have on these ecological communities and Lightsource bp is already working with the NSW National Parks and Wildlife Services to best manage and offset any impacts on local biodiversity through Project design and mitigation. It is possible that the Project's environmental impacts can be minimised, and high value environmental areas conserved to protect ecological values.

In addition, Lightsource bp intends to maintain the ability for continued livestock grazing on the Project Area following construction to preserve the existing agricultural land uses. It is likely that an Environmental Management Plan will be required in the case that the Project is approved, to manage both livestock and feral animals (including wild dogs). This would also include the maintenance of fencing surrounding the Asset Protection Zone; the area of cleared land surrounding Project infrastructure.

A bushfire assessment will be undertaken as part of the EIS process, informing a Bush Fire Management Plan (BFMP) that will be developed in accordance with the Rural Fire Service requirements. As part of the BFMP, Lightsource bp will continue to undertake vegetation management for the life of the Project. An Asset Protection Zone would be established within the Project Area whereby land would be cleared around Project infrastructure and public access restricted. Activities on the Project will be managed particularly cautiously during bushfire season to ensure preventative measures are in place and/or undertaken regularly.

There are no plans to expand beyond the current parameters, as the Project Area is bound by the Goulburn River National Park on all sides.

4.3 Record-keeping

Outcomes and records of each engagement activity will be documented by the team member in attendance. An Engagement Register will also be maintained throughout the delivery of the Implementation Plan to ensure consistent tracking and recording of all community or stakeholder engagement activities and outcomes. Information to be recorded includes:

- activity details (including stakeholder engaged, attendees, time and place, mechanism used)
- discussion points
- summary of key outcomes or any actions
- stakeholder contact details
- correspondence
- preferences for future engagement.

5.0 Implementation Plan

The engagement activities proposed within this Plan consider the possibility of future restrictions on public gathering and movement that may be imposed due to the COVID-19 Pandemic. Whilst it is the preference for stakeholder interactions to occur in-person where possible, appropriate provisions would be included to ensure stakeholder activities may still occur if restrictions are still in place. An overview of the activities proposed to effectively engage each stakeholder group across the two assessment phases is provided below.

5.1 Round 1 (Scoping Phase)

Table 5.1 presents the Scoping Phase Implementation Plan.

Table 5.1 Phase 1 (Scoping Phase) Implementation Plan

Mechanism	Detail	Objectives (Section 1.1)	Stakeholder Group
Project Information Sheet 1	A project information sheet to provide an overview of the proposed project, its planning and assessment pathway, and how the community can get involved in the EIS process and specifically the SIA. To be distributed via maildrop to nearby residents or based on a pre-determined radius.	1	Residents in nearby areas Residents along access route from Merriwa Broader community
Project Website	Design and launch a specific Project website to provide updates, Q&As, infographics, EIS/SIA process and timeline. Can also include a feedback form or online survey.	1, 2, 3	Residents in neighbouring communities Broader community
Community Hotline and Email	Set up dedicated project email address and community hotline (free phone) to make project enquiries or contact with the Project team	1, 4, 6	Broader community
Community Feedback Form	Set up feedback form to be completed either online or on paper Feedback form to be linked via the Project Website.	1, 2, 3, 4, 6	Residents in neighbouring communities Community and special interest groups Broader community
Media Release	Promote and advertise Project and upcoming community information sessions in local media (2-4)	1	Broader community
Project Briefings	Key stakeholder meetings to provide a briefing and to introduce the Project.	1, 2, 3, 4, 5	State Government Local Government (3) NPWS – Goulburn River National Park Aboriginal stakeholders (1-2)

Mechanism	Detail	Objectives (Section 1.1)	Stakeholder Group
Personal interviews/ briefings (phone or online)	Meetings with key community groups or representatives to understand the social locality, any sensitivities, concerns held regarding similar projects nearby, community values and expectations, and to scope perceived impacts of the project to be fully assessed in the EIS.	1, 2, 3, 4, 5	Community and special interest groups (approx. 3) Local businesses and service providers (approx. 3)
Community Information Session	2 x information sessions to be held to allow the broader community and any interested parties to review information regarding the Project, ask questions, provide feedback and raise any concerns or interests. To be held either as a drop-in session at a local venue or virtually (E.g. Zoom) if COVID-19 restrictions are in place at the time. 2 sessions to allow for flexibility in day/time to suit a broader range of community members	1, 2, 3, 4	Broader community

5.2 Round 2 (EIS preparation)

Table 5.2 contains the tasks that are proposed to be undertaken in Round 2 (EIS preparation), however, this will be revised and expanded as required following the outcomes of Round 1 and following the issuance of SEARs.

Table 5.2 EIS Preparation Phase Implementation Plan

Engagement Mechanism	Detail	Objectives (Section 1.1)	Stakeholder Group
Project Information Sheet 2	Second project information sheet will outline the outcomes of the Phase 1 engagement program to validate understanding of the community's perceived impacts; share additional project information and detailed plans; and provide an update on the approvals process, including the EIS and technical studies' outcomes.	1	Proximal residents Broader community
Community Information Session 2 and 3	2 x information sessions will be held with attendance by Umwelt and Lightsource bp to allow the broader community and any interested parties to review updated planning and design information (including findings of technical studies), ask the project team questions, provide feedback on the project planning and assessment. It is proposed that 2 sessions are run on different days and in different locations (e.g., Merriwa and Mudgee), to enable the wider community to access opportunities to learn about the project and provide feedback. In the instance of social distancing restrictions, 2x virtual meetings / presentation can be facilitated via Zoom.	1, 2, 3	Broader community

Engagement Mechanism	Detail	Objectives (Section 1.1)	Stakeholder Group
Personal interviews/ meetings	Meetings with individual landholders to explore impacts and issues identified in Phase 1, validate their perceived impacts of the Project, discuss options around mitigation measures, and evaluate any specific sensitivities to be experienced by each landholder.	2, 3, 4, 5	Host landholder Proximal residents
	Meetings with key community groups and/or local key stakeholders to further explore and investigate issues of the project as scoped in Phase 1 and evaluate the impact from the community or stakeholder perspective. Local service providers are likely to be targeted through these interviews to understand the existing capacity of infrastructure and services in the context of an incoming construction workforce (health, housing/accommodation, recreation etc.). Potential mitigation measures and enhancement strategies will be identified and explored through these discussions. 1 x meeting with Council to further explore any local issues and benefit sharing strategies is also likely to be included.	2, 3, 4, 5	Community/ environment/ special interest groups

6.0 Strategy Review

As the Strategy is a live document, updates will be required following completion of each engagement phase. Therefore, the Strategy will be reviewed at the completion of each of the following milestones:

- Completion of Round 1 Engagement (Scoping Phase)
- Attainment of SEARs
- Completion of Round 2 Engagement (EIS Preparation).

Post EIS lodgement, the Project may require ongoing or follow up stakeholder and community engagement during and following phases:

- Public exhibition
- Response to Submissions (RTS)
- Assessment determination
- Early works and construction.

Therefore, the Strategy may require further review before the commencement of these phases.

umwelt
Environmental & Social Consultants

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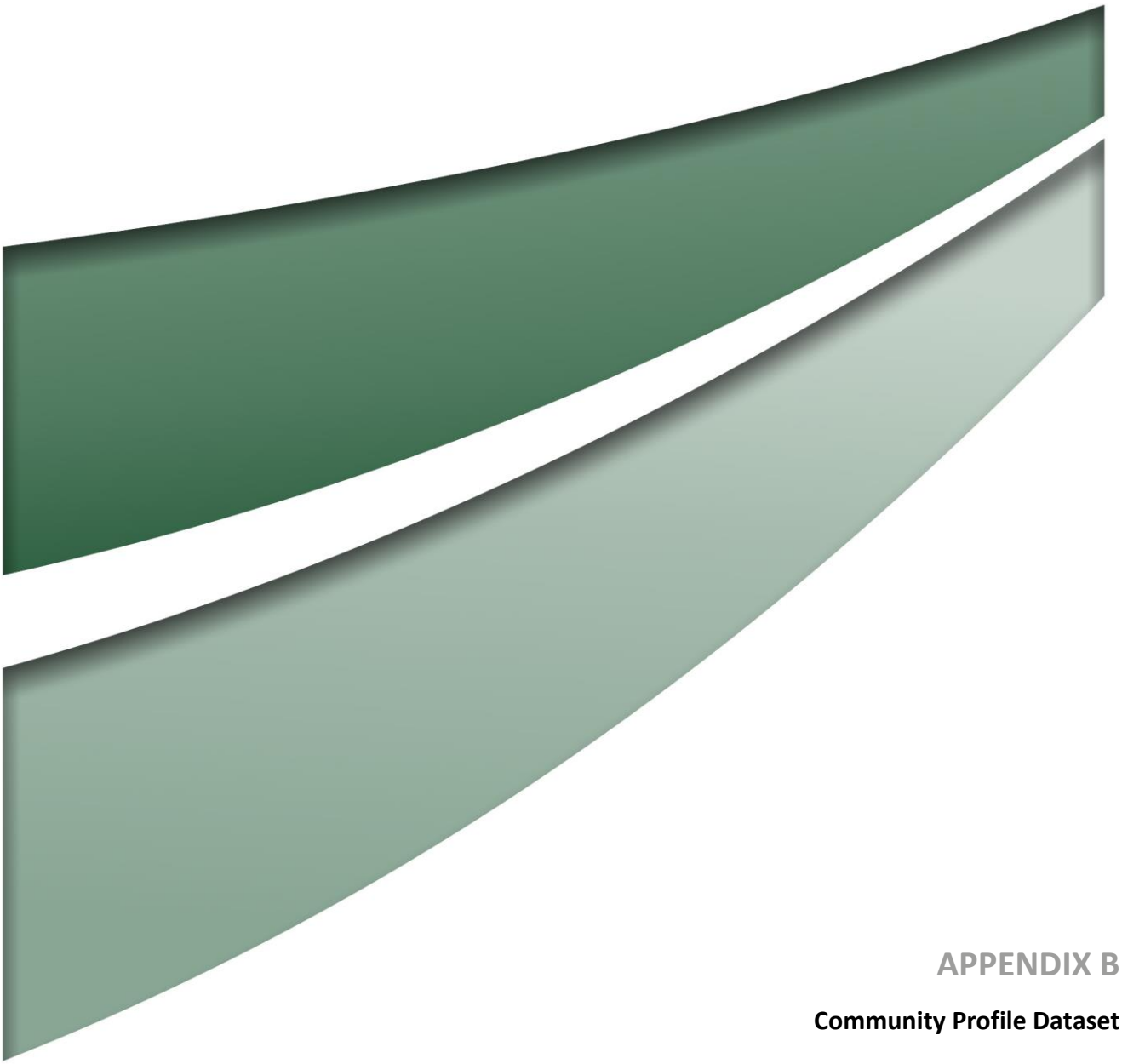


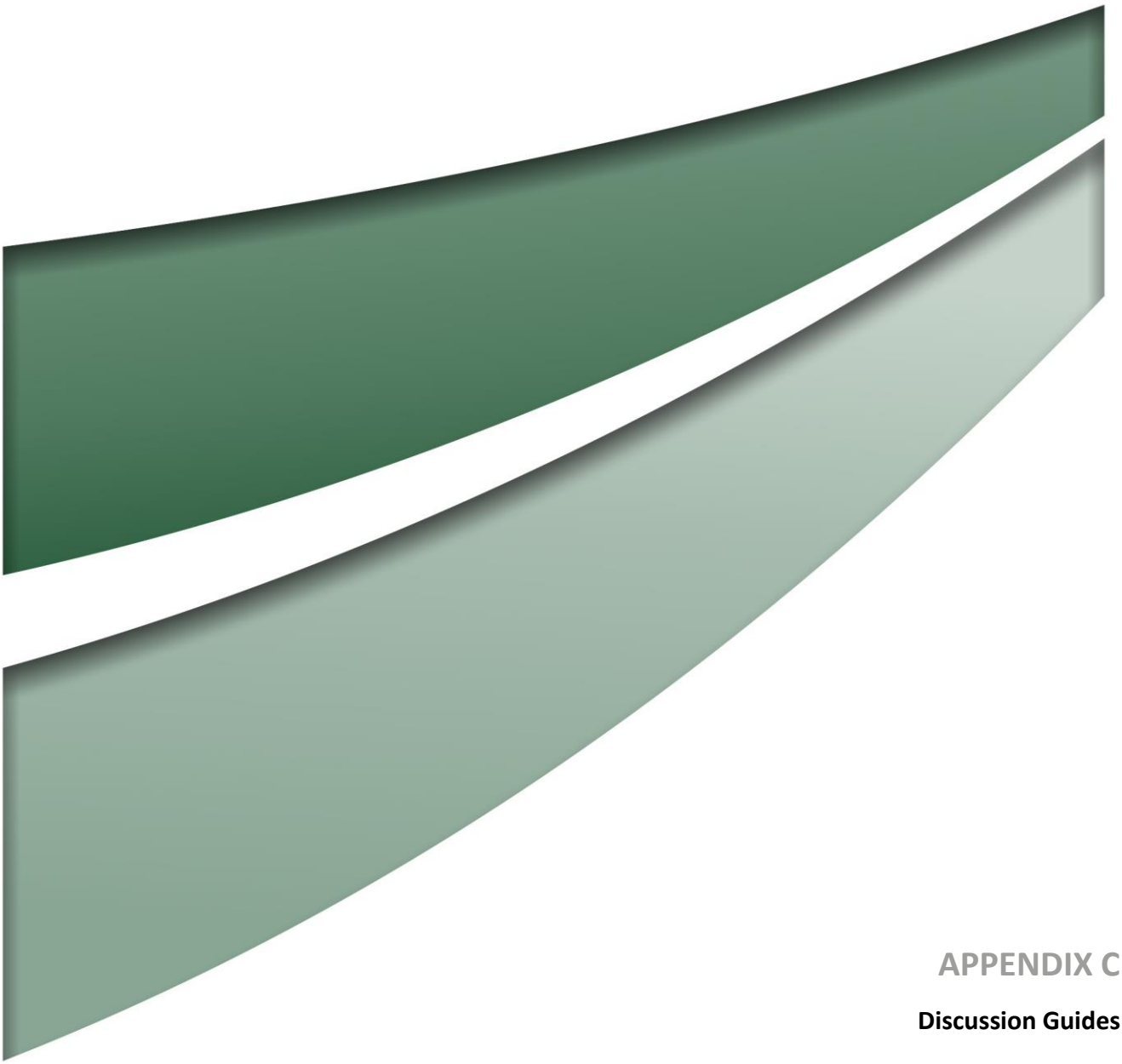
APPENDIX B

Community Profile Dataset

Table B1 Community Profile Dataset

Indicators	Mid West LGA			Muswellbrook LGA			Upper Hunter LGA			Merriwa UCL			NSW		
	2006	2011	2016	2006	2011	2016	2006	2011	2016	2006	2011	2016	2006	2011	2016
Human Capital															
Population Size	21,085	22,319	24,074	15,237	15,792	16,080	12,975	13,752	14,110	944	972	985	6,549,178	6,917,660	7,480,231
Proportion Indigenous Population (%)	3	4	5	5	5	8	3	4	5	4	7	10	2	2	3
Median Age	41	41	42	34	34	35	39	39	41	43	43	44	37	38	38
Male Population (%)	50	51	50	51	52	51	50	50	49	49	51	48	49	49	49
Female Population (%)	50	49	50	49	48	49	50	50	51	51	49	52	51	51	51
Year 10 highest year of schooling (%)	39	38	36	41	41	39	40	38	37	38	40	38	29	26	23
Year 12 highest year of schooling (%)	30	35	39	27	32	34	29	34	39	26	26	31	47	54	59
Bachelor degree (%)	6	8	8	5	6	6	6	7	8	4	4	6	12	14	16
Certificate (%)	22	23	25	22	25	26	20	24	24	18	21	22	17	18	18
Proportion of population born overseas (%)	-	8.7	8.5	-	7.7	8.6	-	7.1	8.4	-	5.2	5.4	-	27.3	29.7
Social Capital															
Proportion of single parent families (%)	15	15	16	16	17	19	14	14	14	20	21	25	16	16	16
Proportion of family households (%)	71	70	69	74	71	70	70	70	69	66	66	64	72	72	72
Proportion of group households (%)	-	3	3	-	3	3	-	3	3	-	4	3	-	4	4
Proportion of lone person households (%)	-	27	29	-	26	27	-	27	29	-	30	34	-	24	24
Proportion of population with a different address 1 year ago (%)	14	16	14	18	18	15	16	15	13	20	16	17	15	14	14
Proportion of population with a different address 5 year ago (%)	40	37	37	45	40	41	41	37	33	43	38	37	41	37	39
Proportion of Population with the same address 5 years ago (%)	60	57	51	55	51	49	59	58	57	57	53	53	59	57	54
Proportion of population aged 15+ who volunteer (%)	24	21	22	19	17	18	24	23	24	31	24	23	17	17	18

Indicators	Mid West LGA			Muswellbrook LGA			Upper Hunter LGA			Merriwa UCL			NSW		
Economic Capital															
Median household income ($/week)	700	929	1,131	1,060	1,399	1,346	882	1,071	1,242	648	771	922	1,036	1,237	1,486
Median mortgage repayment ($/month)	1,083	1,551	1,690	1,300	1,733	1,733	1,083	1,600	1,688	763	1,105	997	1,517	1,993	1,986
Median rent for a 3-bed house ($/week)	145	200	270	150	230	250	120	170	220	117	165	200	210	300	380
Median rent as a proportion of median household income (weekly)	21	22	24	14	16	19	14	16	18	18	21	22	20	24	26
Proportion of the labour force employed part-time (%)	29.8	30.4	31.6	25.8	25.0	26.6	26.4	26.5	29.8	35.9	33.1	29.9	27.2	28.2	29.7
Proportion of the labour force who are unemployed (%)	7.3	5.7	6.5	5.4	4.8	8.2	4.5	3.6	4.8	6.3	6.7	7.6	5.9	5.9	6.3
Physical Capital															
Proportion of occupied private dwellings that are fully owned (%)	42.8	40.5	38.0	30.5	27.3	26.3	38.3	35.3	35.5	42.1	37.8	36.2	34.8	33.2	32.2
Proportion of occupied private dwellings being purchased/ owned by a mortgage (%)	27.9	29.3	30.6	32.0	33.5	31.3	28.3	30.8	31.9	23.2	23.0	27.1	31.9	33.4	32.3
Proportion of occupied private dwellings that are being rented (%)	25.5	26.5	27.4	32.5	35.7	38.9	29.4	29.6	29.0	31.6	32.8	33.6	29.5	30.1	31.8
Total occupied private dwellings (%)	-	81	84	-	89	84	-	85	86	-	82	85	-	90	90
Separate house (%)	91	91	91	89	89	88	91	92	91	89	100	91	71	70	66
Semi-detached, row or terrace house, townhouse etc. (%)	3	4	4	3	4	10	2	2	2	0	0	1	10	11	12
Flat or apartment (%)	4	4	2	7	6	1	5	4	5	9	0	8	18	19	20
Travel to Work (car as driver %)	-	61	66	-	67	72	-	62	65	-	59	62	-	58	58
Proportion of dwellings with internet access (%)	51	72	77	53	75	79	50	70	76	41	63	69	61	79	85



APPENDIX C

Discussion Guides

Hi _____,

My name is _____ and I am calling/emailing from Umwelt Environmental and Social Consultants regarding the Goulburn River Solar Farm project.

You may have recently received a flyer in your letterbox, and/or saw the advertisements in the Merriwa Diary and Mudgee Guardian for the proposed Project, by Lightsource bp.

Who is Lightsource bp?
Lightsource bp is a global market leader in the funding, development and long-term management of large-scale solar projects and smart energy solutions and they work closely with local businesses to deliver sustainable renewable energy projects.

What is the Project?
The proposed Goulburn River Solar Farm Project is located between Wollar and Merriwa, on Wollara Road, in the Upper Hunter, NSW. The Project would consist of a 520-megawatt (MW) photovoltaic solar
farm, a Battery Energy Storage System (BESS) and associated infrastructure and would connect into the existing transmission network.

You may have recently received in a flyer in your letterbox, and/or saw the advertisements in the Merriwa Diary and Mudgee Guardian for the proposed Goulburn River Solar Farm Project, by Lightsource bp.

Key Project Components (*to refer to as needed*):

- 520 MWp solar farm with co-located BESS on site
- 800 hectares (ha) of land developed on a 2,000-hectare site
- Installation of 950,000 solar panels
- Equivalent to the energy needs of 180,000 households
- Meets 4% of the average NSW energy demand
- 705,000 tonnes of carbon emissions saved
- Equivalent to taking over 254,000 cars off the road
- Operational life of at least 35 years
- Connection into existing transmission network
- Designed for dual land use operations
- No direct neighbours and minimal visual impact
- $750m estimated capital investment value (CIV)
- Up to 500 jobs over a 20-month construction period and 10 during operations
- Local procurement and servicing opportunities

What is the purpose of this meeting?
This meeting is firstly to introduce the Project team and provide an overview of the Project to you, as a local community group/service provider.

Secondly, we would like to invite you to an online information session later this month where the Project will be introduced more formally to the community. There are two sessions scheduled, one on Thursday 28 October 2021 at 5.30pm and the second on Saturday 30 October at 3pm. We can provide you with a link to register your interest following our conversation today, otherwise we can register on your behalf if you would like us to.

https://grinformationsessionregistrationform.questionpro.com

Third, this meeting is an opportunity for you to provide any initial feedback on the Project from your perspective. This feedback will be compiled in the Scoping Report documentation that will go to the NSW Department of Planning, Industry and Environment as part of the Project's early stages of assessment next month. Particularly, the Social Impact Assessment (SIA) is commencing now, one of the technical studies which focusses on understanding the social or community effects of the project. The SIA relies on community input to capture the views, interests, and concerns of all those potentially affected by the Project and to understand the level of impact on you or others around you.

Your responses will also help us to understand and develop appropriate management measures tailored to your concerns or experience as the assessments progress as well as in identifying opportunities where the Project can bring local benefit.

Confidentiality

Your responses will be deidentified and considered in aggregate form within our assessment, meaning that your personal information is not included in any reporting. We may use specific quotes to highlight stakeholder sentiment, but these are never attributed to you personally.

You may request a copy of your responses by emailing social-team@umwelt.com.au or by asking the interviewer.

Contact Details

Name

Organisation / Company

Position / Role

Address

Phone

Mobile

Email

Interviewer Name (If applicable)

Stakeholder Group

- ☐ Community / Environment / Special Interest Group
- ☐ Local Business

- ☐ Service provider (e.g., Educational Institute, Healthcare, Community Transport Services, Accommodation Provider)

Please provide an overview of your organisation so we can better understand what you do:
What type of service(s) / interests does your organisation provide to the community?

How many years has your organisation been in operation?

Please choose the specific Local Government Areas that your organisation primarily services / has an interest in? (Select all that apply)

- ☐ Upper Hunter Shire
- ☐ Mid-Western Regional
- ☐ Muswellbrook
- ☐ Warrumbungle Shire
- ☐ Other (Please Specify)

For Service Providers only:
How would you describe the local towns and economy to host a project like this? Can you think of any supply, demand or capacity issues that may need to be considered in planning this Project?

COVID-19 Impacts
We understand that COVID-19 has impacted many regional communities in a variety of ways. Could you please outline how COVID-19 has impacted your ability to offer services or to conduct your group's activities (e.g., increased/decreased demand/interest, community engagement in your organisation or service etc.)

Attitudes toward Renewable Projects *(note to interviewer that these can be asked in more conversational ways if in a meeting/discussion format, to gather general perceptions)*
On a scale of one (1) to ten (10), with one (1) being extremely negative and ten (10) being extremely positive, how would you rate your current feelings towards renewable energy projects in general?

1 2 3 4 5 6 7 8 9 10
Extremely negative Extremely positive

On a scale of one (1) to ten (10), with one (1) being extremely negative and ten (10) being extremely positive, how would you rate your current feelings towards renewable energy projects being developed in your area?

1 2 3 4 5 6 7 8 9 10
Extremely negative Extremely positive

On a scale of one (1) to ten (10), with one (1) being extremely negative and ten (10) being extremely positive, how would you rate your current feelings towards the Proposed Goulburn River Solar Farm Project?

1 2 3 4 5 6 7 8 9 10
Extremely negative Extremely positive

Scoping Issues/Concerns and their Management

From your perspective, do you have any issues or concerns in relation to the Project from what you know to date? Please describe each issue and if you can think of any measures that could be considered to address or respond to the concern or issue.

	Impact and what it means for me / the community	Mitigation Idea
Issue 1		
Issue 2		
Issue 3		
Issue 4		
Issue 5		

And what about any positive impacts or benefits that you see this Project could have on you and/or the local community, and any potential ways to maximise this opportunity?

	Positive Impact and what it means for me / the community	Enhancement Idea
Matter 1		
Matter 2		
Matter 3		
Matter 4		
Matter 5		

Note to the interviewer: Use the above two questions to complete the matrix, based on issues/benefits identified (unprompted) by the respondent. The following list considers potential community concerns that are commonly associated with large-scale solar farms that can be used through the discussion to prompt or guide responses.

Of these, indicate how important the matter is to you, on a scale from 1, not at all important, to 5, very important.

	Not at all Important				Very Important
Aboriginal cultural heritage	1	2	3	4	5
Accommodation of the construction workforce	1	2	3	4	5
Ecological values	1	2	3	4	5
Bush fire risk	1	2	3	4	5
Social investment opportunities	1	2	3	4	5
Construction noise	1	2	3	4	5
Cumulative effects	1	2	3	4	5
Impacts on Lifestyle / Community	1	2	3	4	5
Land Use conflicts	1	2	3	4	5

Local employment / procurement opportunities	1	2	3	4	5
Traffic	1	2	3	4	5
Visual amenity and changes to the landscape character	1	2	3	4	5
Workforce management and community cohesion	1	2	3	4	5
Other (specify)	1	2	3	4	5

Community Values, Needs and Aspirations

What do you like or value the most about living and working in your local area?

Could your area benefit from improvements in any of the of the following areas? If yes, please describe any improvement opportunities and what locality would most benefit (e.g., Health: "I would like to see more doctors/nurses located in Merriwa)

	Community Improvement Suggestion	Locality(ies) of Interest
Education		
Health		
Community Facilities		
Housing / Accommodation		
Indigenous Services		
Other		
Other		

Future Engagement and Information Provision

The final questions seek to understand how you would like to receive information about the Project and be engaged in the future.

How would you like to hear about updates on the Project and for Lightsource bp to be engaging with you into the future? (Select all that apply)

- ☐ Email Updates
- ☐ Face to Face Meetings
- ☐ Group Neighbours Meetings
- ☐ Local Media Releases
- ☐ Mail-out Newsletters
- ☐ Phone Call
- ☐ Public Information Sessions
- ☐ Other (Please specify)

Is there anyone else you think we should speak to about these matters or someone else you think would be interested in providing feedback? (If possible, please provide their contact details).

Is there anything else you would like to add?

Thank you for your time today.

Hi _____,

My name is _____ and I am calling from Umwelt Environmental and Social Consultants regarding the Goulburn River Solar Farm project.

You may have recently received a flyer in your letterbox, and/or saw the advertisements in the Merriwa Diary and Mudgee Guardian for the proposed Project, by Lightsource bp.

Who is Lightsource bp?
Lightsource bp is a global market leader in the funding, development and long-term management of large-scale solar projects and smart energy solutions and they work closely with local businesses to deliver sustainable renewable energy projects.

What is the Project?
The proposed Goulburn River Solar Farm Project is located between Wollar and Merriwa, on Wollara Road, in the Upper Hunter, NSW. The Project would consist of a 520-megawatt (MW) photovoltaic solar farm, a Battery Energy Storage System (BESS) and associated infrastructure and would connect into the existing transmission network.

Key Project Components:

- 520 MW solar farm with co-located BESS on site
- 800 hectares (ha) of land developed on a 2,000-hectare site
- Installation of 950,000 solar panels
- Equivalent to the energy needs of 180,00 households
- Meets 4% of the average NSW energy demand
- 705,000 tonnes of carbon emissions saved
- Equivalent to taking over 254,000 cars off the road
- Operational life of at least 35 years
- Connection into existing transmission network
- Designed for dual land use operations
- No direct neighbours and minimal visual impact
- $750m estimated capital investment value (CIV)
- Up to 500 jobs over a 20-month construction period and 10 during operations
- Local procurement and servicing opportunities

What is the purpose of this phone discussion?
This phone meeting is firstly to introduce the Project team and provide an overview of the Project to you, as a nearby resident.

Secondly, we would like to inform you of and invite you to an online information session later this month to introduce the Project more formally to the community. There are two sessions scheduled, one on Thursday 28 October 2021 at 5.30pm and the second on Saturday 30 October at 3pm. We can provide you with a link to register your interest following our conversation today and that way you can directly receive the meeting log in details, otherwise we can register on your behalf if you would like us to.

https://grinformationsessionregistrationform.questionpro.com

Thirdly, the meeting is an opportunity for you to provide any initial feedback on the Project which we will compile in the Scoping Report documentation that will go to the NSW Department of Planning, Industry and Environment as part of the Project's early stages of assessment. Particularly, the Social Impact Assessment (SIA) is being prepared which relies on community input to capture the views, interests and concerns of all those potentially affected by the Project and to understand the level of impact on you or others around you.

Your responses will also help us to understand and develop appropriate management measures tailored to your concerns or experience as the assessments progress.

Confidentiality

Your responses will be deidentified and considered in aggregate form within our assessment and reporting, meaning that your personal information is not included in any reporting. We may use specific quotes to highlight stakeholder sentiment, but these are never attributed to you personally. You may request a copy of your responses by emailing social-team@umwelt.com.au or by asking the interviewer.

Contact Details

Full Name

Phone

Mobile

Email Address

Property Address

Postal Address (if different from above)

To get to know you and your property a little more, do you own or lease this property? (If leased, please provide contact details of the Property Owner).

- ☐ Own
- ☐ Lease

(If leased, please provide contact details of the Property Owner).

How many dwellings are on the property?

How many people live on the property?

Attitudes toward Renewable Projects

On a scale of one (1) to ten (10), with one (1) being extremely negative and ten (10) being extremely positive, how would you rate your current feelings towards renewable energy projects in general.

1 2 3 4 5 6 7 8 9 10

Extremely negative *Extremely positive*

On a scale of one (1) to ten (10), with one (1) being extremely negative and ten (10) being extremely positive, how would you rate your current feelings towards renewable energy projects being developed in your area?

1 2 3 4 5 6 7 8 9 10

Extremely negative *Extremely positive*

On a scale of one (1) to ten (10), with one (1) being extremely negative and ten (10) being extremely positive, how would you rate your current feelings towards the proposed Goulburn River Solar Farm Project?

1 2 3 4 5 6 7 8 9 10

Extremely negative *Extremely positive*

Scoping of Issues/Concerns and their Management

From your perspective, do you have any issues or concerns in relation to the Project from what you know to date? Please describe each issue and if you can think of any measures that could be considered to address or respond to the concern or issue.

	Impact and what it means for me / the community	Mitigation Idea
Issue 1		
Issue 2		
Issue 3		

Issue 4		
Issue 5		

And what about any positive impacts or benefits that you see this Project could have on you and/or the local community, and any potential ways to maximise this opportunity?

	Positive Impact and what it means for me / the community	Enhancement Idea
Matter 1		
Matter 2		
Matter 3		
Matter 4		
Matter 5		

Note to the interviewer: Use the above two questions to complete the matrix, based on issues/benefits identified (unprompted) by the respondent. The following list considers potential community concerns that are commonly associated with large-scale solar farms. Of these, indicate how important the matter is to you, on a scale from 1, not at all important, to 5, very important.

	Not at all Important				Very Important
Aboriginal cultural heritage	1	2	3	4	5
Accommodation of the construction workforce	1	2	3	4	5
Ecological values	1	2	3	4	5
Bush fire risk	1	2	3	4	5
Social investment opportunities	1	2	3	4	5
Construction noise	1	2	3	4	5
Cumulative effects	1	2	3	4	5
Impacts on Lifestyle / Community	1	2	3	4	5
Land Use conflicts	1	2	3	4	5
Local employment / procurement opportunities	1	2	3	4	5
Traffic	1	2	3	4	5
Visual amenity and changes to the landscape character	1	2	3	4	5
Workforce management and community cohesion	1	2	3	4	5
Other (specify)	1	2	3	4	5

Community Values, Needs and Aspirations

What do you like or value the most about living in your area?

Could your area benefit from improvements in any of the of the following areas? If yes, please describe any improvement opportunities and which locality would most benefit (e.g., Health: "I would like to see more doctors/nurses located in Merriwa"

	Community Improvement Suggestion	Locality(ies) of Interest
Education		
Health		
Community Facilities		
Housing / Accommodation		
Indigenous Services		
Other		
Other		

Future Engagement and Information Provision

The final questions seek to understand how you would like to receive information about the Project and be engaged in the future.

How would you like to hear about updates on the Project and for Lightsource bp to be engaging with you into the future? (Select all that apply)

- ☐ Email Updates
- ☐ Face to Face Meetings
- ☐ Group Neighbours Meetings
- ☐ Local Media Releases
- ☐ Mail-out Newsletters
- ☐ Phone Call
- ☐ Public Information Sessions
- ☐ Other (Please specify)

Is there anyone else you think we should speak to about these matters or someone else you think would be interested in providing feedback, such as any of your neighbours who may not know about the Project)?

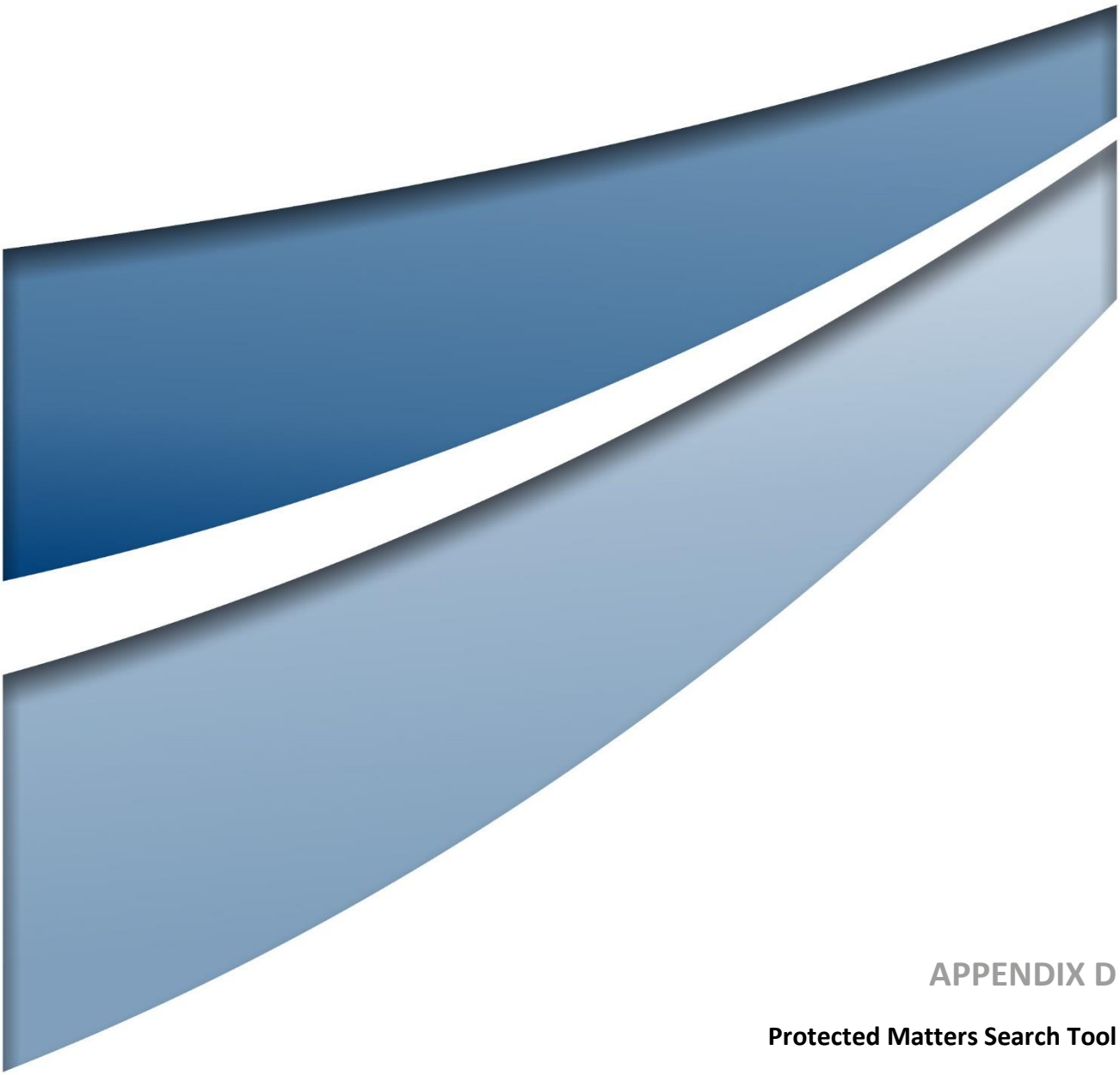
Is there anything else you would like to add?

Thank you for making time to talk with us today.

umwelt
Environmental & Social Consultants

Newcastle | Perth | Canberra | Brisbane | Sydney | Orange | Melbourne

T| 1300 793 267 E| info@umwelt.com.au www.umwelt.com.au



APPENDIX D

Protected Matters Search Tool

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.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about Environment Assessments and the EPBC Act including significance guidelines, forms and application process details.

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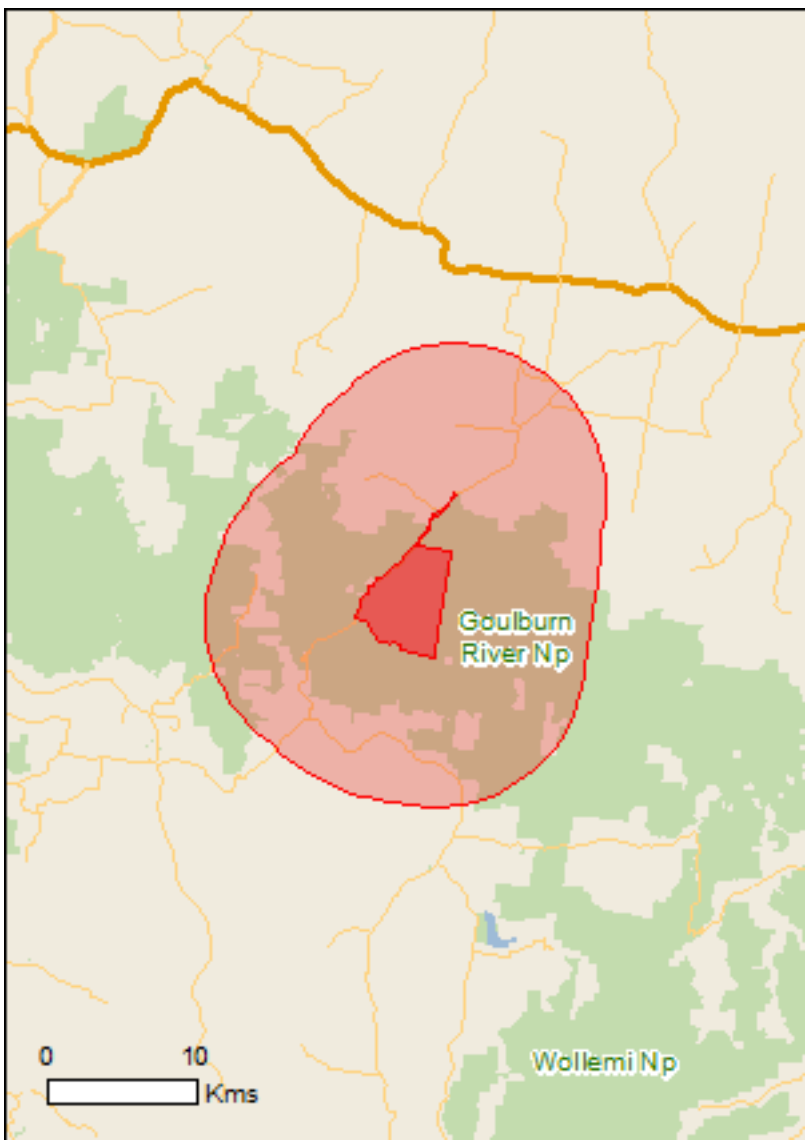

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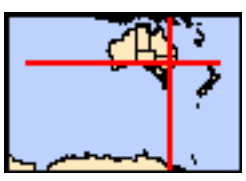

Summary

Matters of National Environmental 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:	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	7
Listed Threatened Species:	31
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 environment anywhere.

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 Land:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	17
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None

Extra Information

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

State and Territory Reserves:	1
Regional Forest Agreements:	None
Invasive Species:	32
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar) [Resource Information]

Name	Proximity
Hunter estuary wetlands	150 - 200km upstream

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.

Name	Status	Type of Presence
Central Hunter Valley eucalypt forest and woodland	Critically Endangered	Community may occur within area
Coolibah - Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions	Endangered	Community may occur within area
Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia	Endangered	Community likely to occur within area
Natural grasslands on basalt and fine-textured alluvial plains of northern New South Wales and southern Queensland	Critically Endangered	Community may occur within area
River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria	Critically Endangered	Community may occur within area
Weeping Myall Woodlands	Endangered	Community may occur within area
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community likely to occur within area

Listed Threatened Species [Resource Information]

Name	Status	Type of Presence
Birds		
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat known to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species

Name	Status	Type of Presence
		habitat likely to occur within area
Numenius madagascariensis		
Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Polytelis swainsonii		
Superb Parrot [738]	Vulnerable	Species or species habitat may occur within area
Rostratula australis		
Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Frogs		
Litoria booroolongensis		
Booroolong Frog [1844]	Endangered	Species or species habitat may occur within area
Mammals		
Chalinolobus dwyeri		
Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat known to occur within area
Dasyurus maculatus maculatus (SE mainland population)		
Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat known to occur within area
Nyctophilus corbeni		
Corben's Long-eared Bat, South-eastern Long-eared Bat [83395]	Vulnerable	Species or species habitat known to occur within area
Petauroides volans		
Greater Glider [254]	Vulnerable	Species or species habitat may occur within area
Petrogale penicillata		
Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat known to occur within 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 known to occur within area
Pseudomys novaehollandiae		
New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat known to occur within area
Pteropus poliocephalus		
Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour may occur within area
Plants		
Androcalva procumbens		
[87153]	Vulnerable	Species or species habitat may occur within area
Androcalva rosea		
Sandy Hollow Commersonia [86861]	Endangered	Species or species habitat may occur within area
Dichanthium setosum		
bluegrass [14159]	Vulnerable	Species or species habitat likely to occur within area
Euphrasia arguta		
[4325]	Critically Endangered	Species or species habitat may occur within area
Homoranthus darwinioides		
[12974]	Vulnerable	Species or species habitat known to occur within area

Name	Status	Type of Presence
Ozothamnus tesselatus [56203]	Vulnerable	Species or species habitat likely to occur within area
Prasophyllum sp. Wybong (C.Phelps ORG 5269) a leek-orchid [81964]	Critically Endangered	Species or species habitat may occur within area
Prostanthera discolor [17756]	Vulnerable	Species or species habitat may occur within area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat may occur within area
Tylophora linearis [55231]	Endangered	Species or species habitat may occur within area
Reptiles		
Aprasia parapulchella Pink-tailed Worm-lizard, Pink-tailed Legless Lizard [1665]	Vulnerable	Species or species habitat known to occur within area
Delma impar Striped Legless Lizard, Striped Snake-lizard [1649]	Vulnerable	Species or species habitat likely to occur within area

Listed Migratory Species [Resource Information]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat likely to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Gallinago hardwickii		
Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Numenius madagascariensis		
Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species		[Resource Information]
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos		
Common Sandpiper [59309]		Species or species habitat may occur within area
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea ibis		
Cattle Egret [59542]		Species or species habitat may occur within area
Calidris acuminata		
Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris ferruginea		
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos		
Pectoral Sandpiper [858]		Species or species habitat may occur within area
Chrysococcyx osculans		
Black-eared Cuckoo [705]		Species or species habitat known to occur within area
Gallinago hardwickii		
Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Haliaeetus leucogaster		
White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Hirundapus caudacutus		
White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area

Name	Threatened	Type of Presence
Lathamus discolor		
Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area
Merops ornatus		
Rainbow Bee-eater [670]		Species or species habitat may occur within area
Motacilla flava		
Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca		
Satin Flycatcher [612]		Species or species habitat likely to occur within area
Numenius madagascariensis		
Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Rhipidura rufifrons		
Rufous Fantail [592]		Species or species habitat known to occur within area
Rostratula benghalensis (sensu lato)		
Painted Snipe [889]	Endangered*	Species or species habitat likely to occur within area

Extra Information

State and Territory Reserves	[Resource Information]
Name	State
Goulburn River	NSW

Invasive Species	[Resource Information]

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resouces Audit, 2001.

Name	Status	Type of Presence
Birds		
Acridotheres tristis		
Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
Alauda arvensis		
Skylark [656]		Species or species habitat likely to occur within area
Carduelis carduelis		
European Goldfinch [403]		Species or species habitat likely to occur within area
Columba livia		
Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Lonchura punctulata		
Nutmeg Mannikin [399]		Species or species

Name	Status	Type of Presence
		habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Pycnonotus jocosus Red-whiskered Bulbul [631]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Turdus merula Common Blackbird, Eurasian Blackbird [596]		Species or species habitat likely to occur within area
Frogs		
Rhinella marina Cane Toad [83218]		Species or species habitat may occur within area
Mammals		
Bos taurus Domestic Cattle [16]		Species or species habitat likely to occur within area
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Capra hircus Goat [2]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Feral deer Feral deer species in Australia [85733]		Species or species habitat likely to occur within area
Lepus capensis Brown Hare [127]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		

Name	Status	Type of Presence
Asparagus asparagoides Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]		Species or species habitat likely to occur within area
Chrysanthemoides monilifera Bitou Bush, Boneseed [18983]		Species or species habitat may occur within area
Genista sp. X Genista monspessulana Broom [67538]		Species or species habitat may occur within area
Lycium ferocissimum African Boxthorn, Boxthorn [19235]		Species or species habitat likely to occur within area
Nassella trichotoma Serrated Tussock, Yass River Tussock, Yass Tussock, Nassella Tussock (NZ) [18884]		Species or species habitat likely to occur within area
Opuntia spp. Prickly Pears [82753]		Species or species habitat likely to occur within area
Pinus radiata Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]		Species or species habitat may occur within area
Rubus fruticosus aggregate Blackberry, European Blackberry [68406]		Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]		Species or species habitat likely to occur within area
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Coordinates

-32.253137 150.105042,-32.256041 150.124955,-32.264751 150.123581,-32.296389 150.117401,-32.309447 150.116028,-32.306401 150.094571,-32.303209 150.095429,-32.302483 150.091137,-32.303209 150.089249,-32.301612 150.087189,-32.301322 150.082898,-32.29073 150.074658,-32.290149 150.068135,-32.286957 150.06968,-32.284199 150.071053,-32.281587 150.071568,-32.279265 150.072426,-32.277668 150.075001,-32.273895 150.076546,-32.272879 150.078949,-32.269831 150.080323,-32.269395 150.083241,-32.263734 150.090966,-32.263299 150.092854,-32.255025 150.101952,-32.252702 150.103325,-32.25125 150.104699,-32.248201 150.107617,-32.245007 150.110707,-32.240506 150.11208,-32.237022 150.113968,-32.235134 150.118946,-32.230923 150.123581,-32.227438 150.127015,-32.226712 150.12753,-32.227874 150.128216,-32.237602 150.118603,-32.240071 150.113625,-32.242684 150.112252,-32.245443 150.111908,-32.248056 150.109848,-32.253137 150.10487,-32.253137 150.105042

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-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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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.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about Environment Assessments and the EPBC Act including significance guidelines, forms and application process details.

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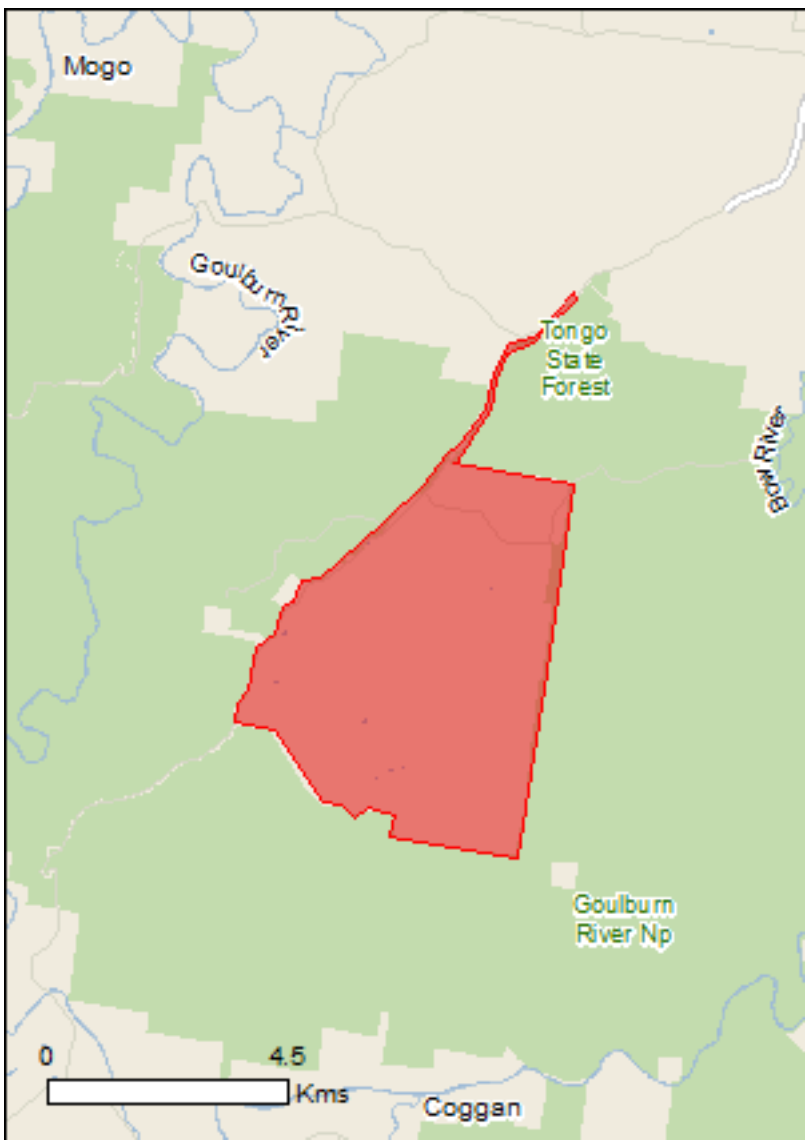

Coordinates

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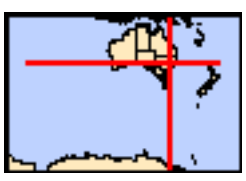

Summary

Matters of National Environmental 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:	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	5
Listed Threatened Species:	28
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 environment anywhere.

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 Land:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	17
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None

Extra Information

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

State and Territory Reserves:	1
Regional Forest Agreements:	None
Invasive Species:	26
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar)	[Resource Information]
Name	Proximity
Hunter estuary wetlands	150 - 200km upstream

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.		
Name	Status	Type of Presence
Central Hunter Valley eucalypt forest and woodland	Critically Endangered	Community may occur within area
Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia	Endangered	Community may occur within area
Natural grasslands on basalt and fine-textured alluvial plains of northern New South Wales and southern Queensland	Critically Endangered	Community may occur within area
Weeping Myall Woodlands	Endangered	Community may occur within area
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community likely to occur within area

Listed Threatened Species		[Resource Information]
Name	Status	Type of Presence
Birds		
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat known to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within

Name	Status	Type of Presence
		area
Polytelis swainsonii Superb Parrot [738]	Vulnerable	Species or species habitat may occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Frogs		
Litoria booroolongensis Booroolong Frog [1844]	Endangered	Species or species habitat may occur within area
Mammals		
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat known to occur within area
Dasyurus maculatus maculatus (SE mainland population) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat likely to occur within area
Nyctophilus corbeni Corben's Long-eared Bat, South-eastern Long-eared Bat [83395]	Vulnerable	Species or species habitat likely to occur within area
Petauroides volans Greater Glider [254]	Vulnerable	Species or species habitat may occur within area
Petrogale penicillata Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat likely to occur within 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 known to occur within area
Pseudomys novaehollandiae New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat likely to occur within area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour may occur within area
Plants		
Androcalva procumbens [87153]	Vulnerable	Species or species habitat may occur within area
Androcalva rosea Sandy Hollow Commersonia [86861]	Endangered	Species or species habitat may occur within area
Dichanthium setosum bluegrass [14159]	Vulnerable	Species or species habitat likely to occur within area
Euphrasia arguta [4325]	Critically Endangered	Species or species habitat may occur within area
Homoranthus darwinioides [12974]	Vulnerable	Species or species habitat known to occur within area
Prasophyllum sp. Wybong (C.Phelps ORG 5269) a leek-orchid [81964]	Critically Endangered	Species or species habitat may occur within area

Name	Status	Type of Presence
Tylophora linearis [55231]	Endangered	Species or species habitat may occur within area
Reptiles		
Aprasia parapulchella Pink-tailed Worm-lizard, Pink-tailed Legless Lizard [1665]	Vulnerable	Species or species habitat may occur within area
Delma impar Striped Legless Lizard, Striped Snake-lizard [1649]	Vulnerable	Species or species habitat may occur within area

Listed Migratory Species [Resource Information]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat likely to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat likely to occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species [Resource Information]		
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Chrysococcyx osculans Black-eared Cuckoo [705]		Species or species habitat known to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat may occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat likely to occur within area
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Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat likely to occur

Name	Threatened	Type of Presence
		within area
Rostratula benghalensis (sensu lato)		
Painted Snipe [889]	Endangered*	Species or species habitat likely to occur within area

Extra Information

State and Territory Reserves	[Resource Information]
Name	State
Goulburn River	NSW

Invasive Species	[Resource Information]

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resouces Audit, 2001.

Name	Status	Type of Presence
Birds		
Acridotheres tristis		
Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
Alauda arvensis		
Skylark [656]		Species or species habitat likely to occur within area
Carduelis carduelis		
European Goldfinch [403]		Species or species habitat likely to occur within area
Columba livia		
Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Passer domesticus		
House Sparrow [405]		Species or species habitat likely to occur within area
Streptopelia chinensis		
Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Sturnus vulgaris		
Common Starling [389]		Species or species habitat likely to occur within area
Turdus merula		
Common Blackbird, Eurasian Blackbird [596]		Species or species habitat likely to occur within area
Frogs		
Rhinella marina		
Cane Toad [83218]		Species or species habitat may occur within area
Mammals		

Name	Status	Type of Presence
Bos taurus Domestic Cattle [16]		Species or species habitat likely to occur within area
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Chrysanthemoides monilifera Bitou Bush, Boneseed [18983]		Species or species habitat may occur within area
Genista sp. X Genista monspessulana Broom [67538]		Species or species habitat may occur within area
Lycium ferocissimum African Boxthorn, Boxthorn [19235]		Species or species habitat likely to occur within area
Nassella trichotoma Serrated Tussock, Yass River Tussock, Yass Tussock, Nassella Tussock (NZ) [18884]		Species or species habitat likely to occur within area
Opuntia spp. Prickly Pears [82753]		Species or species habitat likely to occur within area
Pinus radiata Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]		Species or species habitat may occur within area
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-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
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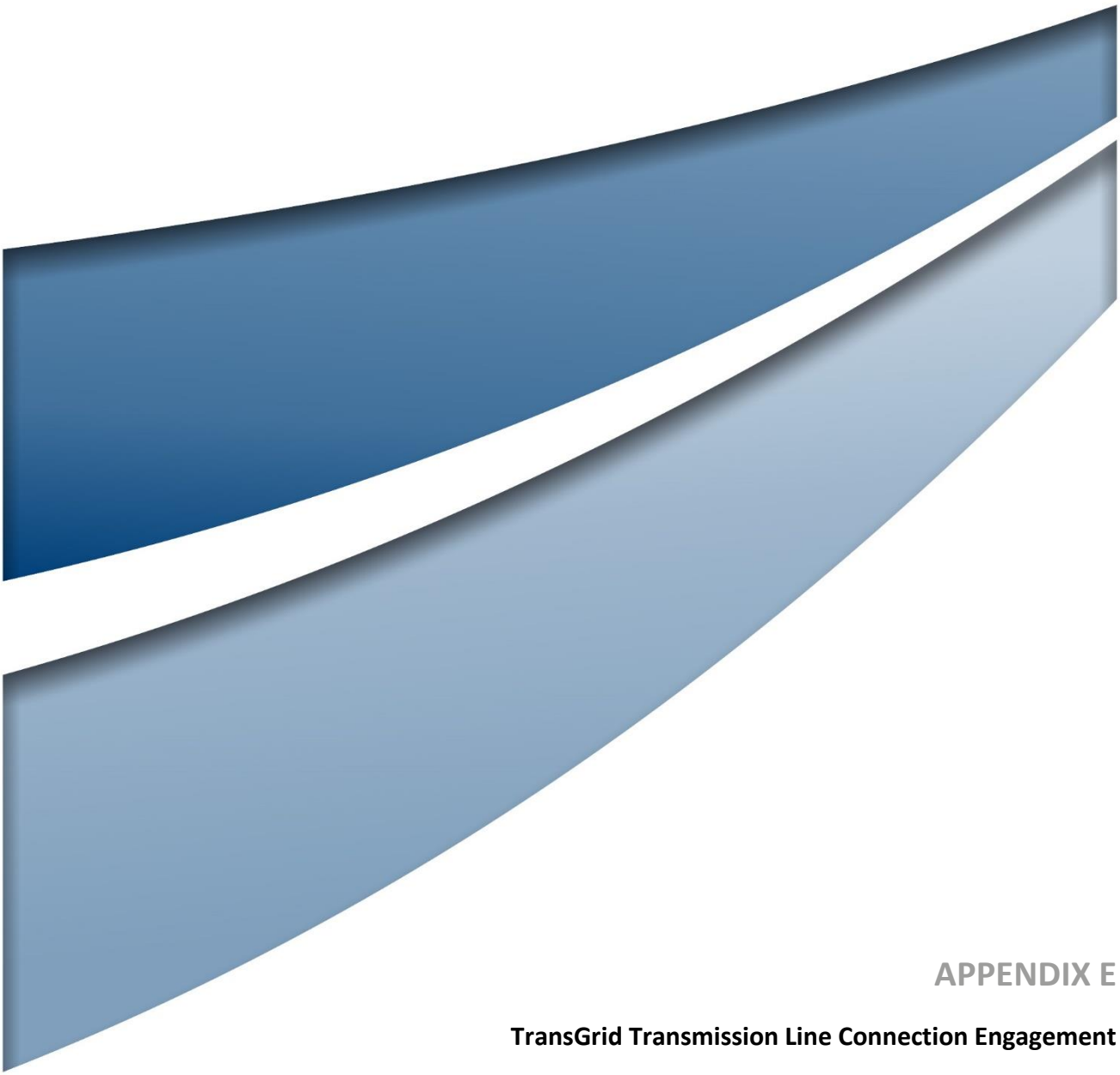

APPENDIX E

TransGrid Transmission Line Connection Engagement

24 September 2021

The Department of Planning, Industry and Environment,
Planning Portal, Major Projects

To whom it may concern

Project: Goulbourn River Solar Farm and BESS

Dear Sir/Madam,

This is to inform you that Lightsource BP has engaged TransGrid to develop the project - Goulbourn River Solar Farm and BESS connection via executing a Connection Processes Agreement (CPA) to finalise the connection to TransGrid's network.

LSbp is developing the Goulburn River Solar Farm and Battery Energy Storage System (BESS) near Merriwa, New South Wales. The facility is proposed to generate maximum capacity upto 470MW and is to be connected onto TransGrid's Wollar to Bayswater 500 kV Transmission Line 5A4 approximately 22.4 km from Wollar Substation and 93.5 km from Bayswater substation and all the other upstream work as required.

At this stage, it appears technically feasible for the Goulburn River Solar Farm to connect to the TransGrid Network and operate on the NEM.

Should you need further details about the project or have any query, please do not hesitate to contact us.

Yours faithfully

John Psarologos
Program Manager

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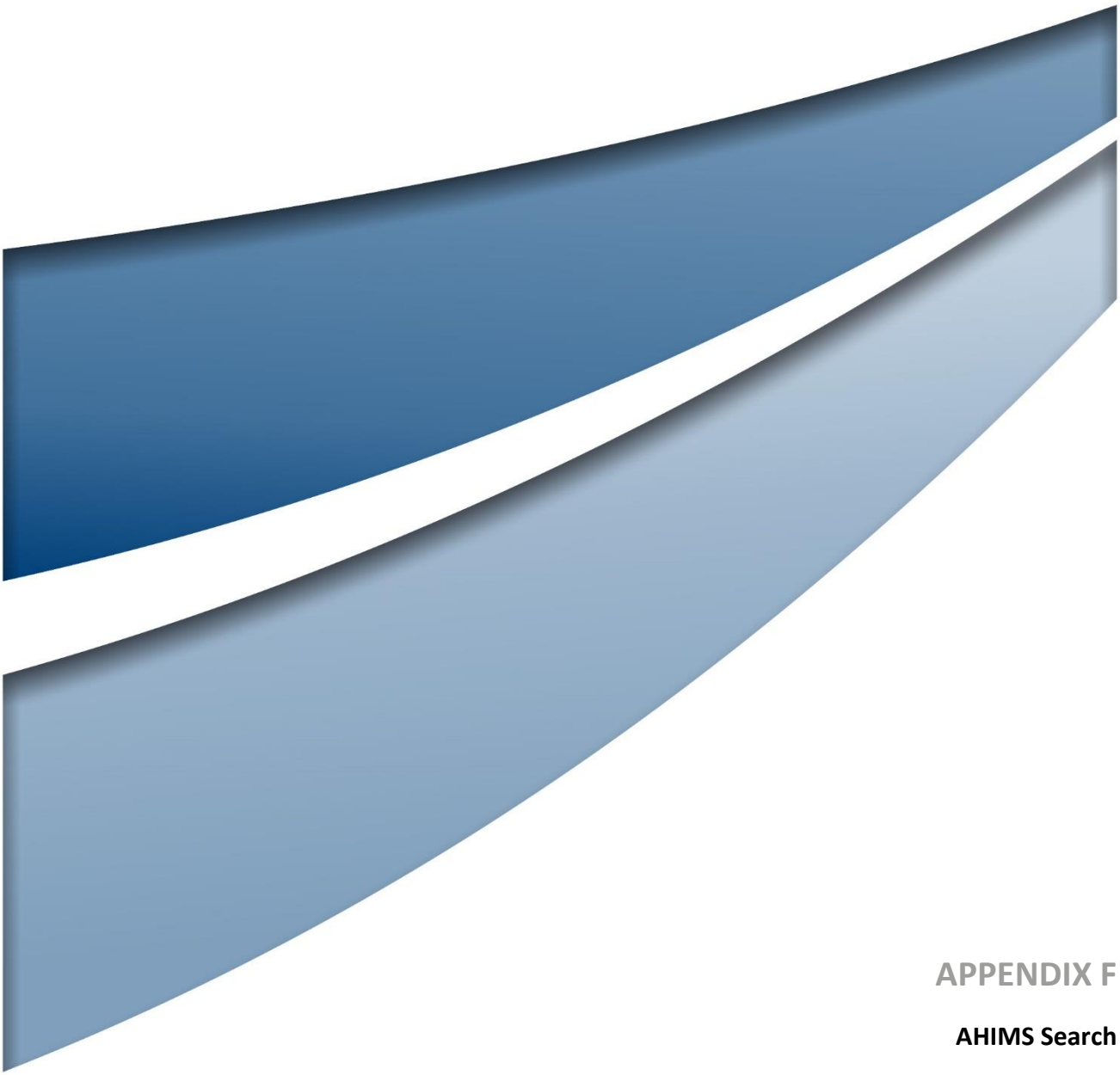
F (02) 9284 3456
lumea.com.au



APPENDIX F

AHIMS Search

AHIMS Web Services (AWS)
Search Result

Your Ref/PO Number : Goulburn River SF

Client Service ID : 622163

Caitlin Adcock

56 Bluebell Street
O'Connor Australian Capital Territory 2602

Attention: Caitlin Adcock

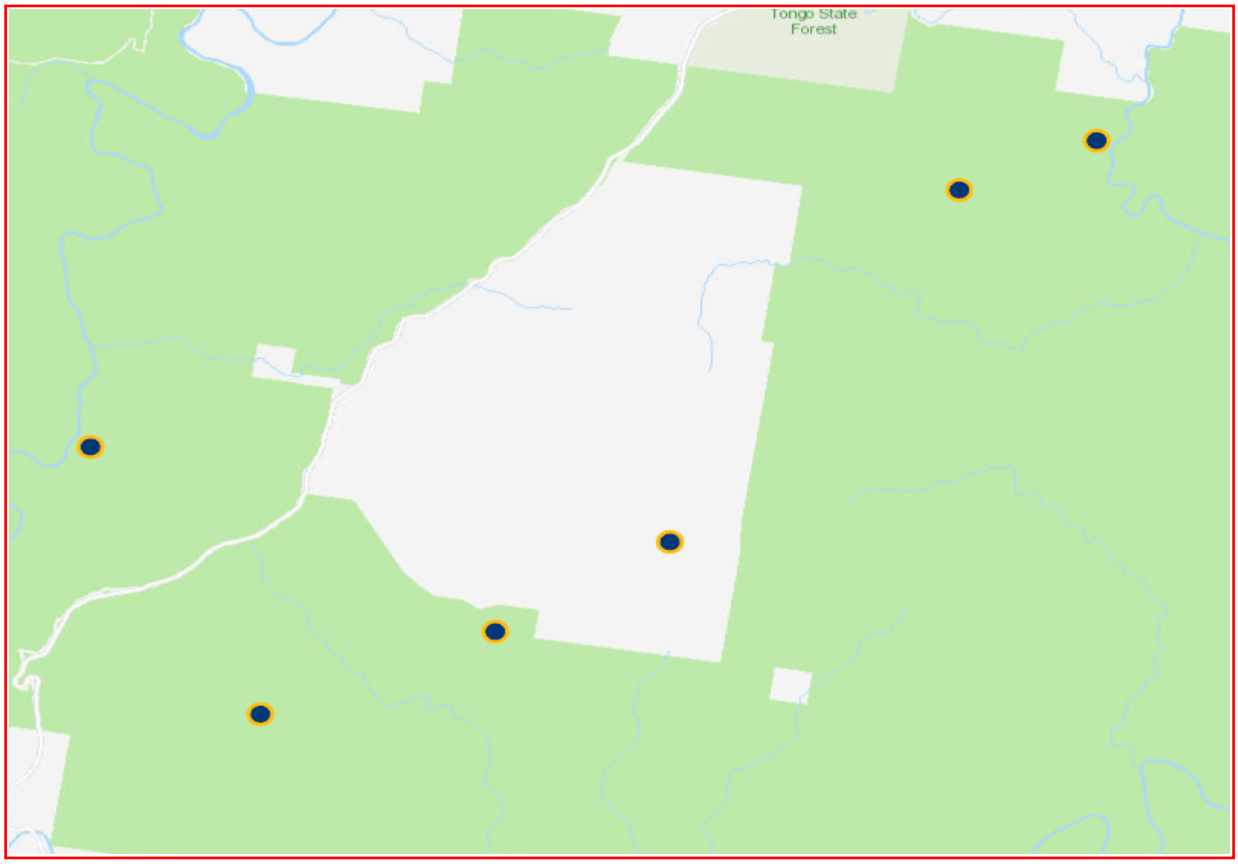
Email: cadcock@umwelt.com.au

Date: 14 September 2021

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lat, Long From : -32.32, 150.04 - Lat, Long To : -32.25, 150.17, conducted by Caitlin Adcock on 14 September 2021.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.



A search of Heritage NSW AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

6	**Aboriginal sites are recorded in or near the above location.**
0	**Aboriginal places have been declared in or near the above location. ***

If your search shows Aboriginal sites or places what should you do?

- You must do an extensive search if AHIMS has shown that there are Aboriginal sites or places recorded in the search area.
- If you are checking AHIMS as a part of your due diligence, refer to the next steps of the Due Diligence Code of practice.
- You can get further information about Aboriginal places by looking at the gazettal notice that declared it. Aboriginal places gazetted after 2001 are available on the NSW Government Gazette (https://www.legislation.nsw.gov.au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Heritage NSW upon request

Important information about your AHIMS search

- The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not be made available to the public.
- AHIMS records information about Aboriginal sites that have been provided to Heritage NSW and Aboriginal places that have been declared by the Minister;
- Information recorded on AHIMS may vary in its accuracy and may not be up to date. Location details are recorded as grid references and it is important to note that there may be errors or omissions in these recordings,
- Some parts of New South Wales have not been investigated in detail and there may be fewer records of Aboriginal sites in those areas. These areas may contain Aboriginal sites which are not recorded on AHIMS.
- Aboriginal objects are protected under the National Parks and Wildlife Act 1974 even if they are not recorded as a site on AHIMS.
- This search can form part of your due diligence and remains valid for 12 months.

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Locked Bag 5020 Parramatta NSW 2124
Tel: (02) 9585 6345

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