Peninsula Solar Power Station Scoping Report

Paytens Bridge, NSW

Request for Secretary's Environmental Assessment Requirements (SEARs)

February 2021

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Abbreviations

ACHA	Aboriginal Cultural Heritage Assessment
AEMO	Australian Energy Market Operator
AHD	Australian Height Datum
AHIMS	Aboriginal Heritage Information Management System
ALC	Aboriginal Land Council
ARTC	Australian Rail Track Corporation
BC Act	*NSW Biodiversity Conservation Act 2016*
BDAR	Biodiversity Development Assessment Report
BSAL	Biophysical Strategic Agricultural Land
CLM Act	*NSW Crown Land Management Act 2016*
CMA	Catchment Management Authority
DA	Development Application
DIRN	Defined Interstate Rail Network
DoEE	Department of the Environment and Energy
DPIE	NSW Department of Planning, Industry and Environment
DRE	NSW Department of Industry – Division of Resources and Energy
EMMP	Environmental Management and Monitoring Plan
EIS	Environmental Impact Statement
EMS	Environmental Management System
EP&A Act	*NSW Environmental Planning and Assessment Act 1979*
EPA	NSW Environment Protection Authority
EPBC Act	*Commonwealth Environment Protection and Biodiversity Conservation Act 1999*
ETL	Electricity Transmission Line
GWh	Gigawatt hours
ICNG	Interim Construction Noise Guideline
LEP	Local Environmental Plan
LGA	Local Government Area
LLS	Local Land Services
LVIA	Landscape and Visual Impact Assessment
MDBA	Murray-Darling Basin Authority
MNES	Matters of National Environmental Significance

MW	Megawatt
O&M	Operations and Management
OEH	NSW Office of Environment and Heritage
PAC	Planning Assessment Commission
PCT	Preliminary plant community type
POEO Act	NSW *Protection of the Environment Operations Act 1997*
PV	Photovoltaic
REAP	Renewable Energy Action Plan
RF Act	*NSW Rural Fires Act 1997*
RFS	Rural Fire Service
RMS	NSW Roads and Maritime Service
SEARs	Secretary's Environmental Assessment Requirements
SEPP	State Environmental Planning Policy
SPIC	State Power Investment Corporation
SSD	State Significant Development
TIA	Traffic Impact Assessment
TSR	Travelling Stock Reserve
WM Act	*NSW Water Management Act 2000*

1 Introduction

1.1 Project Overview

Edify Energy Pty Ltd (Edify) proposes to develop a solar farm in the township of Paytens Bridge, New South Wales, to be known as the Peninsula Solar Power Station (referred to as the proposal or the project). The solar farm would occupy up to approximately 288 hectares (ha) of rural land currently used for cropping and grazing and is expected to have a generation capacity up to 130 Megawatt (MW) direct current (DC). The site is located approximately 27 kilometres (km) south-east of Forbes, located within the Central West Orana region.

The proposal occupies up to approximately 288ha across three lots (Lot 441 DP1124885, up to 60 ha of Lot 442 DP1124886, and up to 50ha of Lot 9 DP752938) and is proximate to an existing 132kV transmission line which crosses east-west through the development site. This overhead transmission line runs from Forbes to Cowra, with the transmission line owned and operated by TransGrid. This transmission line presents a suitable connection point for the proposal due to its current network capacity.

The proposal includes infrastructure such as solar panels, inverters, transformers, underground cabling, an integrated battery storage system up to 100MW/400MWh, site office and maintenance building, access tracks, road and electrical easement crossings, perimeter security fencing, and a substation to connect the solar farm to TransGrid's existing 132kV transmission line.

The project represents Edify's continued investment in renewable energy projects throughout NSW. Similar to Edify's prior success in the State, the development will be consistent with the *NSW Large-Scale Solar Energy Guideline for State Significant Development* (NSW Government, 2018) and is expected to deliver several benefits including:

- the creation of local employment opportunities, including approximately 250 full-time equivalent jobs during the peak construction period
- approximately 5 permanent jobs during the operation of the project (>30 years)
- direct local investment via a Community Benefit Fund
- increased electricity generation capacity and grid support, via the solar asset
- increased dispatchable electricity, firming and system strength services, via the battery energy storage system

The project will have a capital investment of greater than $30 million and therefore is considered a State Significant Development (SSD) under the *State Environmental Planning Policy (State and Regional Development) 2011* (SRD SEPP). Edify will prepare a Development Application (DA) for the project that is supported by an Environmental Impact Statement (EIS). This will be submitted in accordance with Part 4, Division 4.1 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). The NSW Minister for Planning or the Minister's delegate is the consent authority.

1.2 Purpose

The purpose of this scoping report is to request, and inform the content of, the Secretary's Environmental Assessment Requirements (SEARs) for the Peninsula Solar Farm project. It identifies the main issues and information requirements for the assessment, considering the values of the site, the nature and extent of potential impacts, planning and regulatory requirements and the results of early consultation. This allows the assessment to efficiently focus on the most important issues.

This Scoping Report intends to:

- Describe the proposal and the site (Section 2 and 3)
- Provide justification of the proposal and alternatives (Section 4)
- Identify statutory approval requirements (Section 5)
- Provide a summary of consultation undertaken to date and proposed further engagement (Section 6)
- Identify key potential environmental issues associated with the proposal (Section 7)
- Conclude with remarks and identification of key issues raised in preparation of the Scoping Report

The Assessment has been prepared to support a request to the Department of Planning, Infrastructure and Environment (DPIE) for the SEARs. The SEARs would guide the preparation of an Environmental Impact Statement (EIS) for the proposal under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

1.3 Applicant – Edify Energy Pty Ltd

Edify Energy is a market leading, Australian-owned renewable energy company with significant experience in developing and project financing renewable projects across Australia. Edify Energy has financed six large-scale solar farms (773MWp) and a 25MW / 50MWh battery and is the leading developer of utility-scale solar in Australia. Edify has broad energy expertise, covering project development, project design and engineering, financing, asset management and construction management.

The Edify Energy management team has in excess of 150 years' experience in the power and renewables sector internationally, raised and deployed around $3 billion in capital bringing over 40 solar and wind projects into commercial operation, advised on over 10GW (around $25 billion of projects during development, construction and operation and managed an operational portfolio of more than 1.7GW).

Edify Energy supports the full life-cycle of renewable energy projects during development, construction and operation, including greenfield development, project structuring and financing, construction management and a full asset management offering, including trading and operations.

Edify Energy's philosophy is to ensure that its interests are closely aligned with its investment partners. For this reason, in addition to providing long-term asset management services, Edify Energy seeks to maintain a long-term equity interest in its projects, ensuring that Edify Energy's long-term project view is aligned with that of its investors resulting in best-in-class assets. This long-term business model is a distinguishing feature of Edify Energy and should further instil confidence that the Investor is entering into a credible, long-term partnership. This also makes an important difference in our community engagement approach due to the fact that we are establishing relationships with communities during the development phase that will endure for the lifetime of the projects.

2 Development Site Description

2.1 Location

The proposal is located within the NSW Central West Orana region in the Forbes Local Government Area (LGA), around 27 km south-east of Forbes and 20 km south of Eugowra. The development site is dissected by Paytens Bridge Road, which also provides access to the development site. The Proposal would connect to an existing TransGrid 132 kV line crossing the site via a new 132 kV substation. The proposal is located within the South Western Slopes and the Lower Slopes sub-region, with local land use primarily being agricultural (mix of cropping and grazing).

2.2 The Development Site

The subject land (482 ha) and development footprint (288 ha) comprises the following lots (Figure 1):

- Lot 441 in Deposited Plan 1124885
- Lot 442 in Deposited Plan 1124885 (approximately 60 ha)
- Lot 9 in Deposited Plan 752938 (approximately 50 ha)

Figure 1. Subject Land Lots

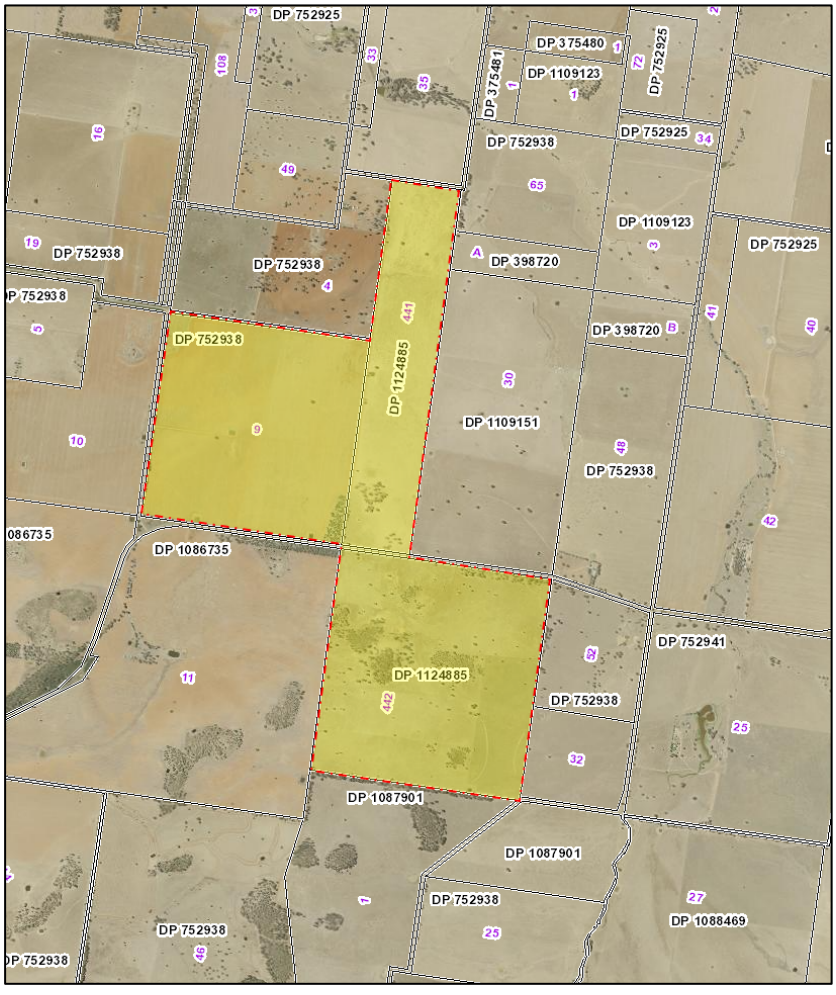
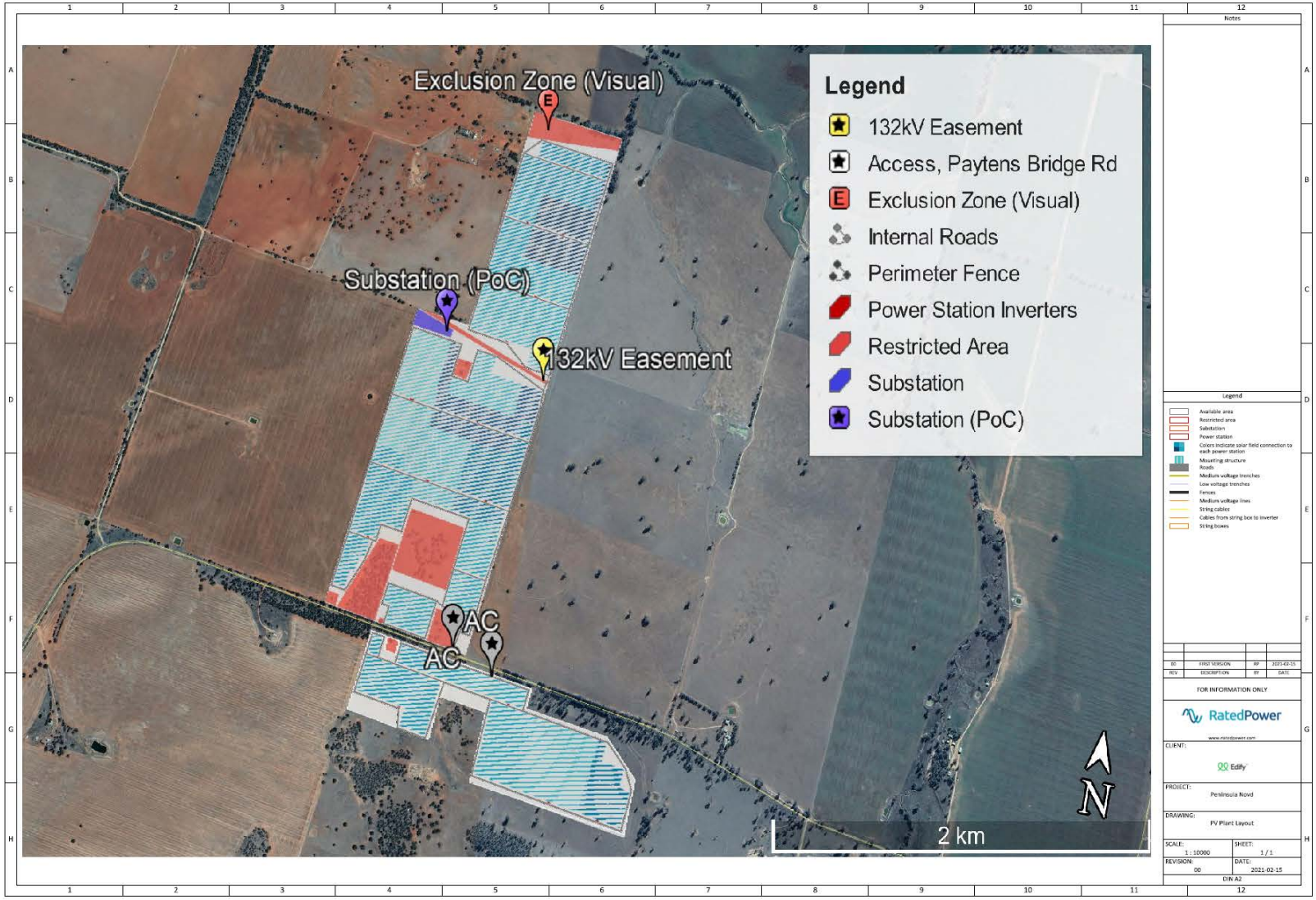


Figure 2. Preliminary Site Layout and Design



The development site is agricultural land comprising three large paddocks that are generally flat and largely cleared and cultivated primarily for agricultural purposes (Figure 3 through Figure 7). Native vegetation is devoid in the western block (Lot 9 DP752938), sparse in the northern block (Lot 441 DP1124885), with the southern parcel (Lot 442 DP1124885) comprising scattered paddock trees, roadside vegetation, and patches of remnant woodland.

Figure 3. View of typical grassland on Subject Land

Figure 4. View of typical grassland with electricity transmission line in view on Subject Land

Figure 5. View of isolated paddock trees in non-native pasture on Subject Land

Figure 6. View of isolated paddock tree with cattle grazing on Subject Land

Figure 7. View of dam containing water, near paddock trees on Subject Land

Within the development site, there are 4 farm dams. The development site is zoned RU1 - Primary Production under the *Forbes Local Environmental Plan* (LEP), with a minimum lot size of 100 ha.

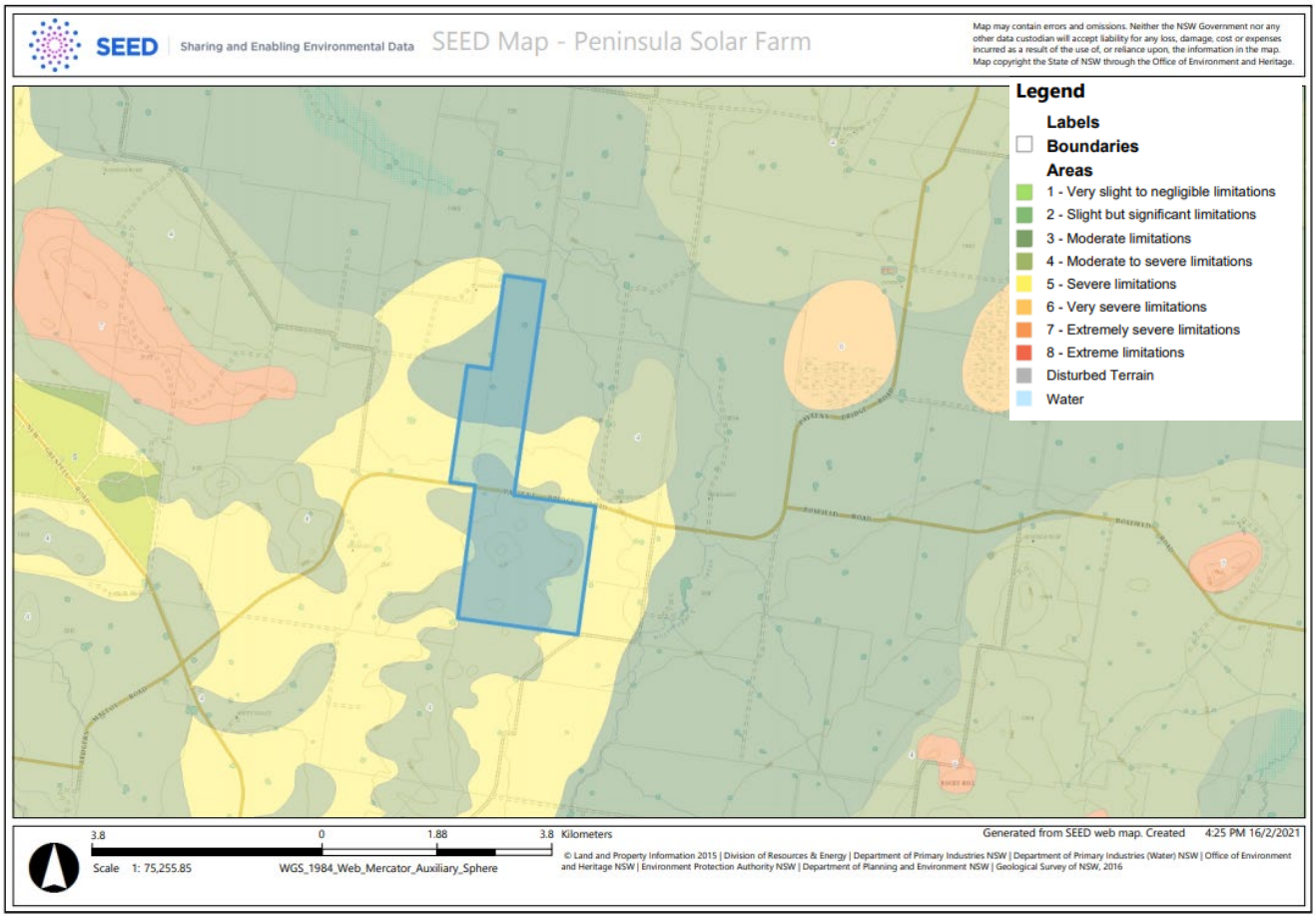
The development footprint is identified as a combination of Class 3, 4 and 5 Land and Soil Capability Land under the Land and Soil Capability Assessment Scheme] (Figure 8), which is defined as:

- Class 3: has limitations that must be managed to prevent soil and land degradation. However, the limitations can be overcome by a range of widely available and readily implemented land management practices. Class 3 land is especially widespread on the NSW slopes and in the coastal areas. It includes a large proportion of the major agricultural producing areas of the State.
- Class 4: is suitable for grazing with occasional cultivation. Soil conservation procedures such as pasture improvement, stock control, application of fertiliser, and minimal cultivation for the establishment or re-establishment of permanent pasture.

- Class 5: has severe limitations for high impact land management uses such as cropping. There are few management practices generally available to overcome these limitations. However, highly specialised land management practices can overcome some limitations for high value crops or products. This land is generally more suitable for grazing with some limitations or very occasional cultivation for pasture establishment.

Land that is classified as moderate has moderate to high limitations for high-impact land uses. It restricts land management options for regular high-impact land uses such as cropping, high-intensity grazing and horticulture (OEH 2012).

Figure 8. Land and Soil Capability Mapping



The NSW Government introduced a range of measures designed to deliver greater protection to agricultural land from the impacts of developments. These measures included the safeguarding of 2.8 million hectares of Biophysical Strategic Agricultural Land (BSAL) across the state, and Critical Industry Clusters (CIC). BSAL is land identified with high quality soil and water resources capable of sustaining high levels of productivity, which is critical to sustaining the state's agricultural industry, while CIC are concentrations of highly productive industries within a region that are related to each other, contribute to the identity of that region, and provide significant employment opportunities. The development site is not mapped as being BSAL, therefore the proposal would not impact on land critical for agriculture (DPE 2017).

The land is owned by two landowners, with intermittent farm sharing. Regarding the adjacent community members, 11 non-associated dwellings and one industry (rock quarry) are located within 4.5 km of the development site (Table 1 and Figure 9).

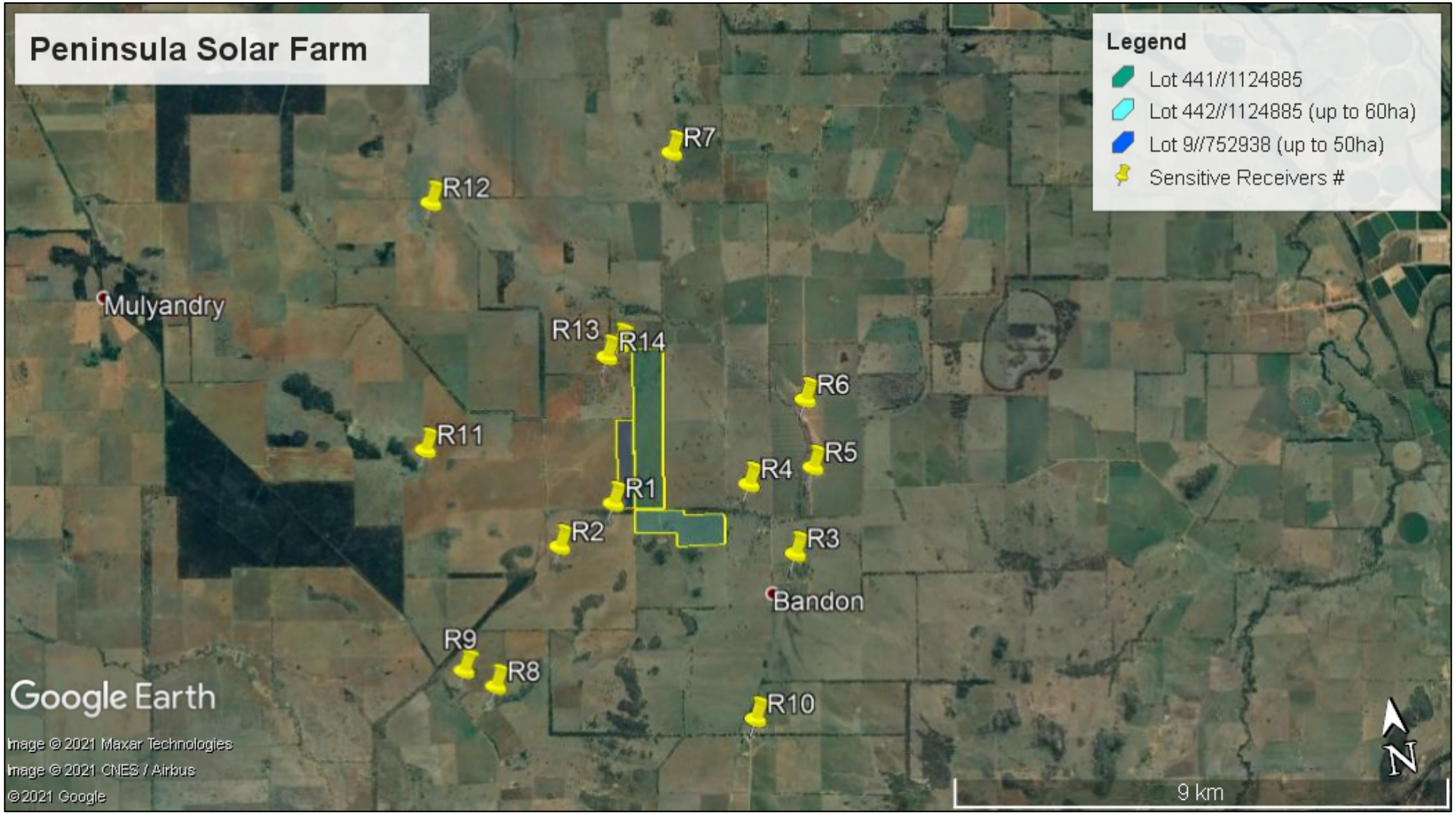
Table 1 Project Neighbouring Receivers

Receiver	Distance from subject land (km)	Receiver	Distance from subject land (km)
R1[1]	0.37	**R8**	4.03
R2	1.59	**R9**	4.28
R3[1]	1.31	**R10**	3.78
R4	0.57	**R11**	3.67
R5	1.66	**R12**	4.47
R6	2.47	**R13**	0.32
R7	3.21	**R14**[2]	0.34

[1] Associated Landowner

[2] Tastex Pty Ltd (industrial quarry operation)

Figure 9. Development Footprint in relation to nearby receivers (less than 5km)



2.3 The Locality

The proposal is located within the Forbes LGA, located in Central Western New South Wales between the major regional centres of Forbes and Cowra. The shire has several small towns including Bedgerebong, Bundbarrah, Corradgery, Daroobalgie, Eugowra, Ooma North, Paytens Bridge and Wirrinya. The LGA is 4,720 km² with a population of 10,469 as at the 2018 Census (ABS 2018).

Major and/or towns in the area that may provide accommodation and services include:

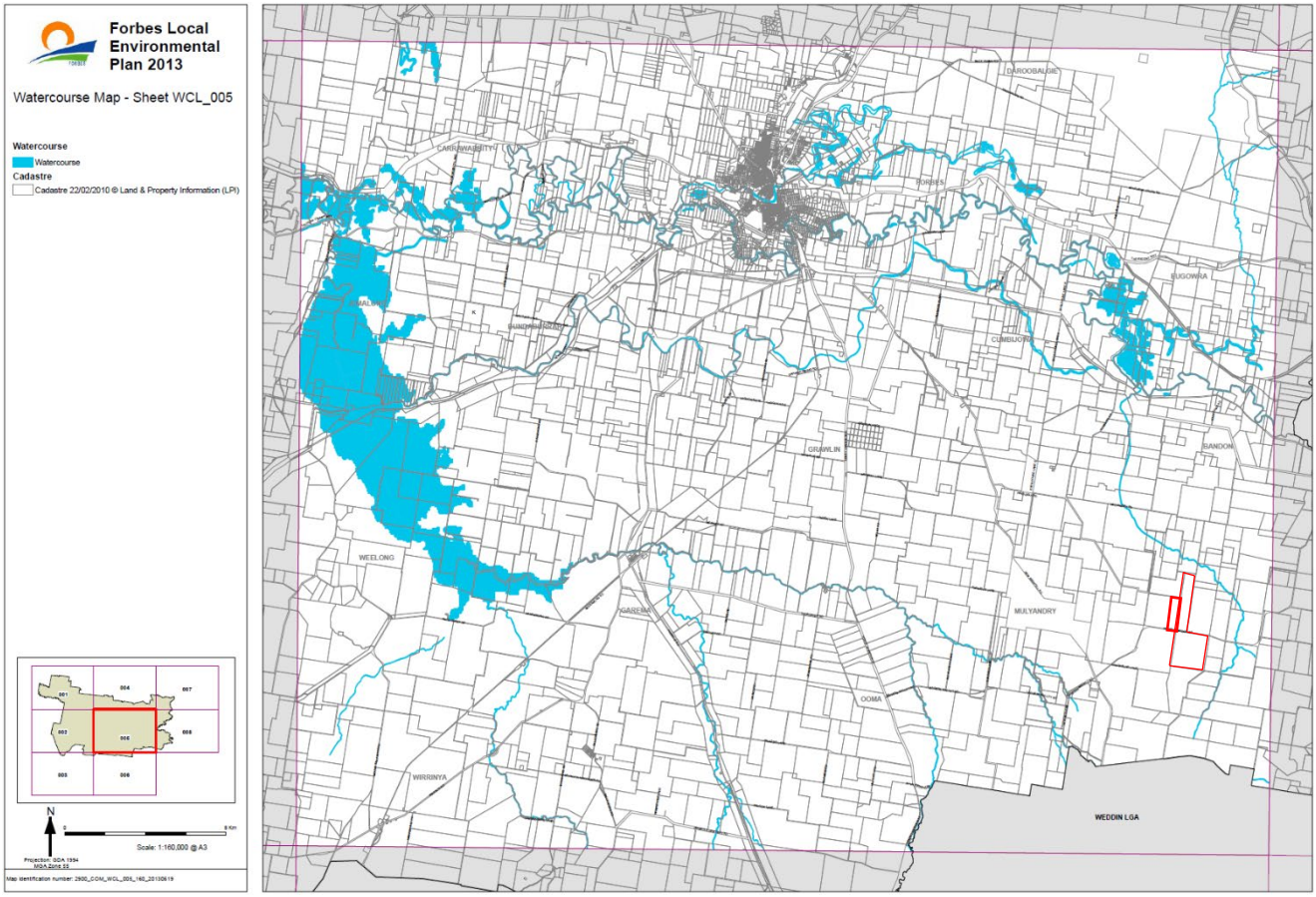
- Forbes
- Eugowra
- Canowindra
- Gooloogong
- Grenfell
- Cowra

2.3.1 Forbes

The major town of Forbes is located approximately 30 km north-west of the proposed project, with a population of 8,432 as at the 2016 Census (ABS 2018). Forbes has a number of attractions including the McFeeters Motor Museum, the Forbes District and Historical Museum and the Lake Forbes Water Park.

Figure 10 illustrates the project site in relation to Forbes and the regional water courses.

Figure 10. Forbes Local Environmental Plan (LEP) with water courses



2.3.2 Population

The median age of persons in Forbes LGA is 42.1; this is higher than the Australian average of 38 (ABS 2016). The 2019 census records state that 10.7% of the population are Aboriginal and Torres Strait Islander people (ABS 2019). A large portion, 95.9% of the community were born in Australia; 0.6% in Oceania, 1.7% in North-West Europe, 0.4% in Southern and Eastern Europe, 0.1% in North Africa and the Middle East, 0.5% in South-East Asia, 0.2% in North-East Asia, 0.3% in Southern and Central Asia, 0.2% in the Americas and 0.2% in Sub-Saharan Africa (ABS 2019).

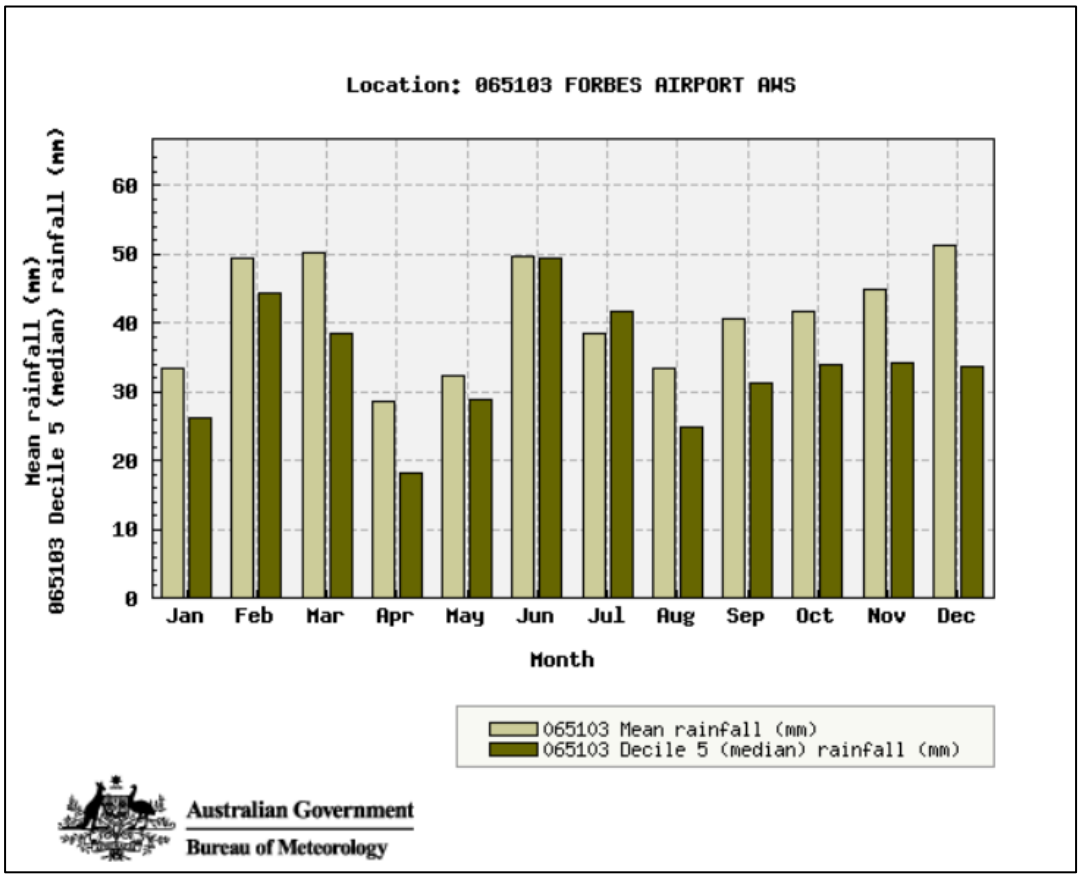
2.3.3 Climate

The Forbes LGA is part of the NSW South Western Slopes Bioregion. This bioregion is dominated by a sub-humid climate that generally experiences hot summers and cool wet winters (OEH 2016).

The BOM (2021) climate records available from the nearest climate station at Forbes Airport AWS (Station number 65103) consists of data recorded since 1995. The station indicates a mean summer maximum of 34.6 °C (January) and a mean winter minimum of 2.5 °C (July).

Further, rainfall records from the station show a mean annual rainfall of 494 mm, and that rainfall is generally greatest over summer and autumn, with the mean number of days of rain being 87.2.

Figure 11. Rainfall 2020 statistics for Forbes



2.3.4 Geology and Vegetation

The geology characteristics for the South Western Slopes subregion comprises Ordovician to Devonian folded and faulted sedimentary sequences with inter-bedded volcanic rocks and large areas of intrusive granites. In

addition, the vegetation common throughout the Upper Slopes subregion is described as comprising open forests and woodlands, with red stringybark on upper slopes with black cypress pine, kurrajong, red ironbark, white gum, white box, yellow box and Blakely's red gum on the relatively lower slopes (OEH 2016).

3 The Proposal

3.1 Site Selection

The site of the Proposal has been selected for the following reasons:

- Excellent solar exposure.
- Excellent access to local and major roads.
- Excellent access to the grid transmission network.
- Likely low level of environmental impact – the site has been largely cleared and heavily disturbed by cultivation and cropping.
- Suitable topography, land size and land zoning, whereby the use of the site would be based on a lease agreement between Edify and the landowner for the life of the project.

3.2 Proposed Works

3.2.1 Proposed Infrastructure

The proposal involves the construction of a ground mounted photovoltaic solar array which would have capacity to generate up to 130MW (DC) of renewable energy. The solar farm would connect into an existing 132 kV TransGrid transmission line that traverses the proposal. The proposal would consist of the following components:

- Single axis tracker photovoltaic solar panels mounted on steel frames over most of the site (maximum tilt 4.2m in height).
- Battery energy storage systems with a rating of up to 100 MW / 400 MWh.
- Underground and overground electrical conduits and cabling to connect the arrays to the inverters and transformers.
- Systems of invertor units and voltage step-up throughout the arrays.
- On site substation, connecting to the existing 132 kV TransGrid transmission line.
- Site office and maintenance building, vehicle parking areas, internal access tracks and perimeter security fencing.
- Site access track off Paytens Bridge Road.
- Road crossing and easement electrical crossing through underground and/or overhead lines.

The solar farm arrangement is flexible and adaptable and would be designed to avoid impacts where feasible and minimise and mitigate environmental impacts if avoidance is not possible. The design would consider the results of the Scoping Report, consultation with relevant stakeholders and the EIS to be prepared. The EIS would detail how these studies have been used to produce the final proposal design.

The proposed infrastructure footprint is shown in Figure 2. This includes all land likely to be directly impacted by the construction, operation and decommissioning of the proposal, including auxiliary construction facilities (site compound, laydown, stockpiling etc.) and all considered options. It is noteworthy that the proposed

footprint is indicative only and will be refined as part of the EIS process (considering environmental constraints and engineering studies), with project infrastructure layout to be detailed in the EIS.

3.2.1.1 Solar Array Areas

The development will consist of a number of solar array areas or blocks comprised of photovoltaic modules arranged in a series of long rows. The modules are mounted on frames with tracking systems which follow the sun to optimize energy generation. The frames are fixed to piles driven into the soil. The rows interconnect to form a single array block of up to 4 MW (AC) or 8 MW (AC), depending on the MV enclosure design. In each block there will be a prefabricated, containerized inverter and integrated transformer to convert and step up the voltage level. Electrical connections will also be constructed between the PV arrays, as well as associated monitoring and protection equipment and central inverters via underground or frame secured cabling.

The solar module frames and inverter stations will be installed on piles and sit above ground level, with a maximum height of 4.2m at full tilt. This ensures retention of existing grassland vegetation and habitats in situ with a minimal level of ground disturbance. Regrowth of vegetation will be enabled following temporary disturbance during installation/construction.

3.2.1.2 Medium Voltage Reticulation

Each inverter will be connected to the central 33kV switchboard by underground medium voltage cable reticulation. The cables will be installed in trenches not below 1m in depth and typically 1m in width. The excavation will comply with the Soil and Erosion Sediment Control Report and Regulations for construction within New South Wales. The medium voltage switchboard will be connected through a step-up transformer and connect to the overhead 132 kV transmission line, owned and operated by Transgrid.

Temporary disturbances to vegetation from the underground installation of the cables will rehabilitate naturally.

3.2.1.3 Solar Substation

A high voltage substation will connect the solar farm to the national transmission network. The substation footprint will be approximately 150m x 200m. The substation will provide switching and protection of the electrical network and will be fenced separately from the solar farm for safety reasons. The T-connection into the existing transmission line will be owned and operated by the Network Operator, Transgrid. This will form part of the National Electricity Network (NEM).

3.2.1.4 Battery Energy Storage System (BESS)

Based on an economic and technical assessment that will be undertaken during the project's Connection Application phase with Transgrid and the Australian Energy Market Operator (AEMO), the BESS would be located either:

- adjacent to the substation in the development site; or
- dispersed in modular enclosures throughout the site, which is similar to the typical solar inverter enclosures.

The project will utilise sealed lithium-ion batteries housed in a secure, climate-controlled Battery Energy Storage System (BESS). Subject to economic and technical considerations, the proposal would include an approximate 100 MW / 400 MWh rated capacity battery storage system, with an enclosure design similar to Figure 12.

Figure 12. Indicative battery storage system enclosures

3.2.1.5 Operation and Maintenance Facility

The proposed Operation and Maintenance (O&M) building will be a prefabricated design approx. 10m by 8m and single story. The facility will provide a working area for staff, ablutions and amenities including:

- Office
- Toilet
- Kitchen
- First Aid area
- Meeting room
- Reception area.

3.2.2 Construction

The proposal is expected to operate for around 30 years. The construction phase of the proposal is expected to take 10 to 18 months. During the peak construction period, a workforce of approximately 250 personnel will be required onsite.

Minor earthworks would be required for the preparation of the site, including minimal site levelling, laying of access track and site drainage works. Due to the relatively flat terrain of the project area minimal site preparation and civil works are anticipated prior to construction. The PV arrays and site office components will largely be built off-site and transported to the site in modulated sections. Construction on-site will be limited to the unloading and joining together of the modulated sections and trenching electrical and control cabling to

the electricity grid and control room. Construction activities are planned to occur during daylight hours only. Access to the site will be from Paytens Bridge Road.

3.2.3 Operation

During the operational phase of the project, approximately five full-time jobs and a number of full-time equivalent roles that support the project's operation will be required.

The primary activities conducted on site will include day-to-day routine operations, maintenance of infrastructure, and general site maintenance and security. Operation of the solar farm will also likely be supported by local contractors for tasks such as repairs, minor works, weed/vegetation management, fencing and cleaning.

The operational lifespan of the facility is expected to be circa 30 years, depending on the nature of solar PV and battery technology and energy markets.

3.2.4 End of Life

After the initial operating period, a decision will be made to either decommission or re-power the facility, subject to approval requirements.

If the solar farm is to be decommissioned, removing all above-ground infrastructure (and all infrastructure up to one metre below the surface of the Land) and return the site to its existing land capability. All above-ground structures built as part of the project will be removed and the site rehabilitated generally to its pre-existing land use, as far as practicable. The disposal and recycling of project infrastructure will be completed in accordance with current waste management legislation at the time of decommissioning. As far as possible, efforts will be made to reduce wastes disposed to landfill in line with best practice sustainability principles.

Alternatively, the project may be upgraded and re-powered with new PV equipment. If re-powering the project is agreed, an appropriate stakeholder consultation process will be undertaken, and all necessary approvals will be sought and aligned with relevant legislation at such time.

3.2.5 Capital Investment

The proposal would have an estimated capital investment in excess of $30 million, identifying the proposal as State Significant Development under Part 4 of the EP&A Act. The actual value of the proposal will be in excess of $100 million, with the total investment value largely determined by the duration of the battery energy storage system, which will be determined during the EIS stage of the development. A quantity surveyor's report would be prepared during the EIS process as part of the proposal which would confirm the capital investment cost.

3.2.6 Subdivision

Part of Lot 442 in Deposited Plan 1124885 will be subdivided from the proposal as it is not ideal for the proposal layout, and so the landowner can continue their farming practices (Figure 2). A subdivision is also required at Lot 9 in Deposited Plan 752938, to enable the western portion of the Lot to be separate from the project and continue to be used for agricultural purposes.

A 1 to 5 ha subdivision for the proposed substation will also be required (Figure 2).

When land is leased from a landowner and the lease affects part of a lot or lots in a current plan, a subdivision under s.7A *Conveyancing Act 1919* (formerly s.327AA *Local Government Act 1919*, which is now repealed) is required when the total of the original term of the lease, together with any option for renewal, is more than five years. When the lease affects the whole lot in a current plan, the body of the lease identifies the area by lot and DP number with a subdivision not required.

As part of Lot 441 in Deposited Plan 1124885 will be leased, subdivision for the purpose of the internal substation and battery facility will be required. Forbes Shire Council have indicated their support of subdivision in initial consultation with Edify. An easement may be created by means of an appropriate dealing registered in the NSW Land Registry Service or by the inclusion in a Section 88B instrument lodged with a new deposited plan.

Evidence of engaging with Forbes Shire Council regarding future requirements of subdivision is provided in Appendix A, with Council offering in-principle support for subdivision.

4 Justification and Alternatives

4.1 Strategic Justification

4.1.1 Technical Feasibility

The site is flat and predominantly clear, making it an ideal location for a utility scale solar project.

The proposal will utilise proven and mature solar and battery technologies. The site is well suited to efficient and high-yielding output of solar generation. Battery storage would also aid in storing and managing energy flows to the grid during times of grid constraints (charging) and peak electricity demand (discharging). This dispatchable capability allows the project to de-couple its output from typical, weather dependent generation profiles, for example by allowing the project to service periods of high demand during the evening (post sunlight) hours.

Furthermore, the NSW electricity market is undergoing significant change, with a number of major energy generators scheduled to reach the end of their lifespan and are likely to be retired. The first of which large generators to be retired is located at the Liddell coal-fired power station which is to be closed in 2022. This forecast closure will be followed by Vales Point, Eraring and other major generating units later this decade. There is a risk that without new investment in sufficient generation capacity, these retirements have the potential to lead to interruptions in energy security.

The proposed investment's connection would be achieved by cutting into the 132 kV line (TransGrid owned) crossing the site, with the majority of generation exported east towards Cowra and Sydney. A substation would be constructed in the development site. It is noteworthy that the electricity grid in New South Wales can present challenges in terms of having the capacity to connect utility scale renewable energy projects. The proposal benefits from having good connection options adjacent to the site with sufficient capacity in the transmission network to allow power generated at the Peninsula site to be exported to wider NSW. The site also has relative proximity to major load centres, when compared to other solar projects currently operating or proposed within the broader Central Western region.

4.1.2 Contributions to Federal and State Climate Change Targets

Electricity generation is the largest individual contributor of greenhouse gas emissions in Australia, accounting for 32.7 per cent of emissions in the year to March 2020 (Department of Industry 2020). This proposal contributes to the decarbonisation of this emissions intensive sector, with bulk supply of firmed and dispatchable renewable energy sources, all of which are required to replace traditional, thermal electricity generators that are approaching their intended design-life.

4.1.2.1 Renewable Energy Target

The Clean Energy Regulator (CER) introduced the Renewable Energy Target in 2001, which is an Australian Government scheme designed to reduce emissions of greenhouse gases in the electricity sector and encourage the additional generation of electricity from sustainable and renewable sources.

In the context of this proposal, the Renewable Energy Target works by allowing large-scale generators to create large-scale generation certificates for every megawatt hour (MWh) of energy they generate. Certificates are then purchased by electricity retailers (who supply electricity to householders and businesses) and submitted to the Clean Energy Regulator to meet the retailers' legal obligations under the Renewable Energy Target.

The COP21, also known as the 2015 Paris Climate Conference, achieved a legally binding and universal agreement on climate, with the aim of keeping global warming below 2°C, chiefly by reducing greenhouse gas emissions (Australian Government, Department of Industry, Science, Energy and Resources, 2020). The proposal would form part of the Australian effort to help meet this binding, international target.

4.1.2.2 NSW Net Zero Plan Stage 1: 2020-2030

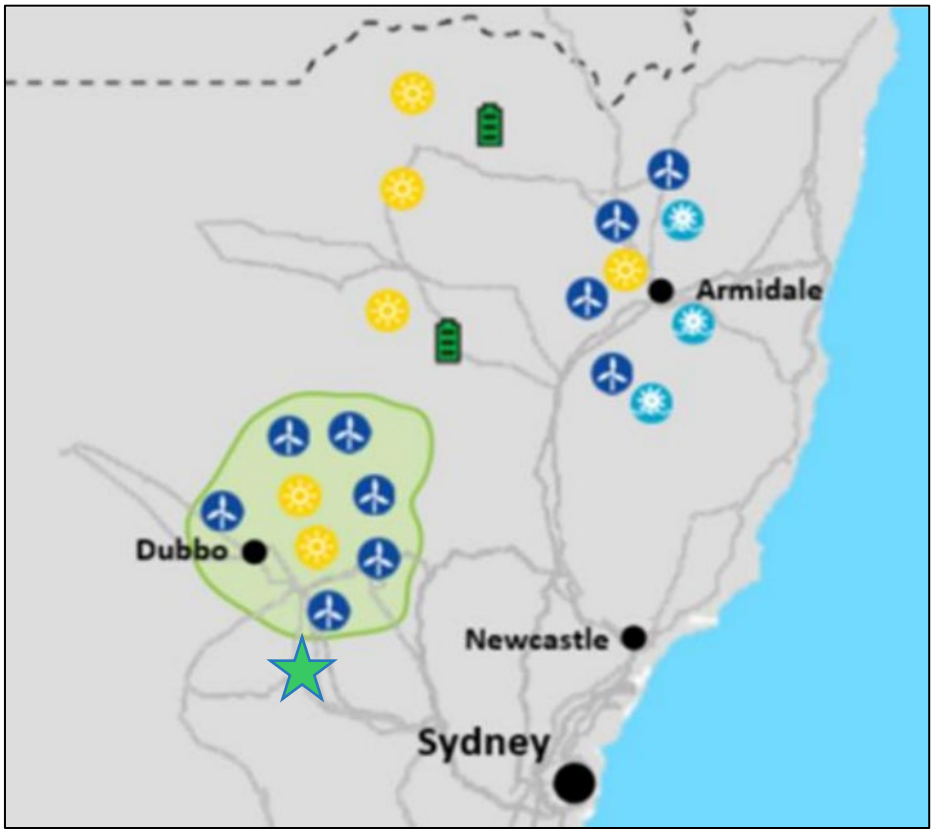
The NSW Department of Planning, Industry and Environment (NSW DPIE) Net Zero Plan Stage 1: 2020–2030 is a commitment to taking decisive and responsible action on climate change. The *Plan* has the goal of reducing the State's emissions by 35% by 2030, compared to 2005 levels, whilst supporting regional investments that total $7 billion and create approximately 1700 regional employment opportunities (NSW Government 2020).

The NSW Government has also set a broader goal of net zero emissions by 2050 and has released these policies to fast-track emissions reduction over the next decade and prepare the State to take further action in the decades to follow.

The Peninsula Solar Farm proposal would contribute towards both the Renewable Energy Target and the *New South Wales Electricity Strategy* and *Net Zero Plan*, with the latter representing a State-based initiative designed to support the national target of achieving 33,000 gigawatt hours of renewable electricity generation (approximately 26-28%) renewable energy by 2030 (Clean Energy Regulator, 2018).

The Peninsula Solar Farm proposal is also located in proximity to the Central Western Orana Renewable Energy Zone (Figure 13).

Figure 13. Central Western Orana Renewable Energy Zone – Peninsula Solar Farm



Due to the proximity of the project to one of the priority Renewable Energy Zones in New South Wales, the proposal will support the four goals of the NSW Electricity Strategy, which includes:

- delivering Australia's first coordinated Renewable Energy Zone
- saving energy, especially for times of peak demand
- supporting the development of new electricity generators
- setting a target to bolster the state's energy resilience

4.1.3 Electricity Market Benefits

Australian Energy Market Operator (AEMO 2020) forecasts that grid-supplied electricity consumption will remain flat for the next 20 years, despite projected 30% growth in population. Although not required to meet projected electricity demand, the proposal would benefit the network by shifting electricity production closer to local consumption and regulating inputs to the grid using a Battery Energy Storage Facility.

The electricity network was designed to deal with a small number of very large power generating stations. The increasing localisation of power generation helps the grid to cope with the supply from diversified renewable energy projects, such as intended via this proposal.

4.1.3.1 Electricity prices

According to Deloitte, Australian households will pay $510 million more for power in 2020 without renewable growth through the RET and up to $1.4 billion more per year beyond 2020.

Renewables increase competition in the wholesale energy market – and, as in any market, more competition means lower prices. This is particularly true in the case of the dispatchable capability provided by the battery

energy storage system, which will increase competition and capacity to satisfy peak demands and place downward pressure on electricity prices.

4.1.4 Socio-economic Benefits

4.1.4.1 Employment

In 2018/19, 26,850 Australians were directly employed in the renewable energy sector with an additional 5,770 jobs created since the 2017/18 financial year (ABS 2020).

This proposal would generate a significant number of new jobs (up to approximately 250 full-time employees) during the peak construction phase in regional NSW, in addition to indirect employment opportunities supported from the ancillary supply chain.

The proposal will create a range of permanent employment opportunities (approximately three to five employees) and indirect full time equivalent staff during the operation and maintenance phase (expected to be around 30 years).

The employment benefits for construction extend through the local supply chains to fuel supply, vehicle servicing, uniform suppliers, hotels/motels, cafés, pubs, catering and cleaning companies, tradespersons, tool and equipment suppliers and many other businesses.

Further extension of employment benefit extends through the operation of the proposal, such as panel cleaning and maintenance, electrical maintenance, fence supplies and maintenance, road grading, plus the grazing and shearing of sheep.

4.1.4.2 Economic diversification

The proposal would diversify the use of land in the area, with the predominant land use in the area being agricultural usage. The proposal would add to that and provide both local land holders and businesses in the broader area with an additional source of income and economic activity. The income created in the locality from the proposal would be consistent and stable. This income will be of greater security being removed from the normal cycle and risks of agricultural activity (like flood and drought).

4.1.5 Land Use

It is also important to note that solar farms do not preclude the use of land for agriculture. Some agricultural activity is still possible whilst a solar farm is operating (e.g. grazing). Additionally, the degree of permanent land disturbance in the construction and operation of solar farms is small, and it is likely that agricultural activities that were occurring before the solar farm was constructed would be able to be continued once the solar farm is decommissioned and removed.

4.1.6 Site Suitability

Key considerations for site selection are detailed within the NSW Large-scale Solar Energy Guideline for State Significant Development (DPE 2018). The key site constraints with justification as to why the site is suitable is detailed in Table 2 below:

Table 2 Key Site Constraints with Justification

Areas of constraint	Site justification
Visibility and topography - Sites with high visibility, such as those on prominent or high ground positions, or sites which are located in a	The site does not have high visibility, is not on a prominent location or on high ground, or within a valley with residences with an elevated view. The area is generally

Areas of constraint	Site justification
valley with residences with elevated views looking towards the site. This is particularly important in the context of significant scenic, historic or cultural landscapes.	flat, with the exception of a small raised hill towards the southern boundary of Lot 441 DP1124885 which will be avoided by the solar infrastructure and thus provide some visibility buffer from Paytens Bridge Road.
Biodiversity - Areas of native vegetation or habitat of threatened species or ecological communities within and adjacent to the site, including native forests, rainforests, woodlands, wetlands, heathlands, shrublands, grasslands and geological features.	Areas of high biodiversity value, such as riparian vegetation, swamps and native grasslands have been excluded from the development footprint. No native forests, rainforests, woodlands, wetlands, heathlands, shrublands or significant grasslands are located adjacent to the site.
Residences - Residential zones or urbanised areas.	The proposal is not likely to generate land use conflicts with surrounding land uses and is compatible with land use zoning. The proposed development site is within land zoned RU1, Primary Production under the Forbes Local Environmental Plan (LEP).
Agriculture - Important agricultural lands, including Biophysical Strategic Agricultural Land (BSAL), irrigated cropping land, and land and soil capability classes 1, 2 and 3. Consideration should also be given to any significant fragmentation or displacement of existing agricultural industries and any cumulative impacts of multiple developments.	The proposal is not located on important agricultural land, including industry clusters and biophysical strategic agricultural land. The proposal is also located on land classes as Soil Capability Class 4 land. However, the proposal: • Is not expected to adversely affect the biophysical nature of the land. • Would positively affect soils by providing many of the benefits of long-term fallow, including increasing soil moisture, building soil carbon levels, allowing structural recovery and improving soil biota. • Will not result in the permanent removal of agricultural land. • Would not result in rural fragmentation given it will not alter the existing or surrounding environment. • Adjacent farming operations are compatible. • Strategic sheep grazing may be used within the development site. Grazing would be used to reduce vegetation biomass and put grazing pressure on weeds adjacent to the solar panels.
Natural Hazards – Areas subject to natural hazards, such as flooding and land instability.	The site has not been identified as flood prone in the Forbes LEP (refer to Figure 10). The site also has not been identified as bushfire prone (refer to Appendix C).
Resources - Prospective resources developments, including areas covered by exploration licences and mining and petroleum production leases, Solar development applicants should seek advice from the Department of Planning, Division of Resources	The development area is not covered by any exploration or mining leases, however a minerals license was raised in 2019 and 2020 on the adjacent lot to the west of the development site (MLA571 and ELA5983). Advice has been sought from GSNSW about the coverage of resource related licences, with a response

Areas of constraint	Site justification
and Geoscience (GSNSW) about the coverage of resources related licences.	from the Department of Regional NSW (Mining, Exploration and Geoscience) received 4 November 2020. Edify has also engaged with the Proponent of ELA5983 in November 2020, with confirmation received that indicates there is no anticipated conflict and no concerns with the proposed development, with correspondence included in Appendix C.
Crown Lands – If any part of the project or associated transmission or distribution infrastructure will cross Crown Lands, it may be subject to legislative requirements that restrict access to the land.	No Crown Lands intersect the project development site. A Crown Road abuts the northern boundary of the project site, however it is not envisaged that site access or other transport related activities will require accessing this Crown Road. Crown Road shown in Appendix C.

4.2 Alternatives to the Proposal

4.2.1 Alternative Sites

Edify has reviewed the solar generation potential of many areas in NSW using a combination of computer modelling and analysis, on the ground surveying and observation, and experience of Edify in successfully developing projects in NSW and across Australia. The site was selected because it provides the optimal combination of:

- Low environmental constraints (predominantly cleared cropping land),
- Level terrain for cost-effective construction,
- High quality solar resource,
- Low density population and limited neighbouring properties,
- Suitable planning context,
- Acceptable flood risk,
- Road access,
- Access to the transmission network, and
- High levels of available capacity on the grid transmission system.

The site is of a scale that allows for flexibility in design, allowing Edify to avoid ecological and other constraints that may be identified during the EIS process. The factors that determine the final design area would be detailed in the EIS.

4.2.2 Alternative Technologies

Photovoltaic solar technology was chosen because it is cost effective, low profile, durable and flexible regarding layout and siting. It is a proven and mature technology that is readily available for broad scale deployment at the site. Battery technology was selected over mechanical or physical storage methods because it enables modular installation without major infrastructure or specialised landform features. Batteries also generally have lower weight and physical volume and better scalability compared to other technologies.

4.2.3 The 'Do Nothing' Option

Not proceeding with the proposal would forgo the benefits of the proposal, resulting in:

- The loss of a source of renewable energy that would assist the Australian and NSW Governments to reach their targets,
- The loss of cleaner energy and reduced greenhouse gas emission,
- The loss of additional electricity generation and supply into the grid, and
- Loss of social and economic benefit through the provision of direct and indirect employment.

The 'do nothing' option may avoid any potential impact. However, the likelihood of significant negative impacts is low. It is considered the benefit of the proposed solar farm outweighs any potential impact whilst contributing to ecologically sustainable development.

5 Planning Context

5.1 NSW Legislation

5.1.1 Environmental Planning and Assessment Act 1979

The *Environmental Planning and Assessment Act 1979* (EP&A Act) and its associated regulations and instruments set the framework for development assessment in NSW.

Assessment documents prepared to meet the requirements of the EP&A Act (including Reviews of Environmental Factors and Environmental Impact Statements) will address heritage matters, and planning documents such as LEPs and Regional and / or State Environmental Plans typically contain provisions for heritage, including Aboriginal and non-Aboriginal heritage. Additionally, local government authorities are required to maintain a register of all local items of heritage significance recorded within their LGA.

The proposed Peninsula solar farm would be assessed under Part 4, Division 4.7 of the EP&A Act. as development consent is required and is considered to be a State significant development (SSD) according to Schedule 1 of the State Environment Planning Policy (State and Regional Development) 2011.

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

Clause 20 of Schedule 1 of *State Environmental Planning Policy (State and Regional Development) 2011* defines 'State Significant Development' as including: '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:

(a) capital investment value of more than $30 million, or

(b) capital investment value of more than $10 million and is located in an environmentally sensitive area of State significance.

The proposal would have an estimated capital investment cost greater than $30 million. The proposal is therefore classified as 'State Significant Development' under Part 4 of the EP&A Act.

State Significant Developments (SSD) are major projects that require approval from the Minister for Planning and Environment. While the Minister for Planning and Environment is the consent authority for SSD, the Minister may delegate the consent authority function to the Planning and Assessment Commission (PAC), the Secretary or any other public authority.

An Environment Impact Statement (EIS) is prepared in accordance with environmental assessment requirements issued by the Secretary of the Department of Planning and Environment (SEARs). In determining the SEARs, the Secretary must consult with relevant public authorities and would have regard to the need to assess key issues raised by those public authorities. A scoping study is required to be submitted with the request for the SEARs.

In this case as Edify (the Applicant) is not the owner of the land to which the development application relates, Edify must provide evidence that all the relevant landowners consent to the application.

5.1.3 Relevant State Environmental Planning Policies (SEPPs)

The SEPPs considered to be relevant to this proposed project include:

- State Environmental Planning Policy (Concurrences and Consents) 2018
- State Environmental Planning Policy (Exempt and Complying Development Codes) 2008
- State Environmental Planning Policy (Infrastructure) 2007
- State Environmental Planning Policy (Primary Production and Rural Development) 2019
- State Environmental Planning Policy No. 33 – Hazardous and Offensive Development
- State Environmental Planning Policy No 55 – Remediation of Land

There are no significant matters set out in the SEPPs that would preclude or significantly impact the proposed solar farm development from occurring at the site.

5.1.4 Roads Act 1993

The *Roads Act 1993* (Roads Act) provides for the classification of roads and for the declaration of the Roads and Maritime Services (RMS) and other public authorities as roads authorities for both classified and unclassified roads. It also regulates the carrying out of various activities in, on and over public roads. The need for upgrade works on local roads would be considered as part of the traffic assessment conducted for the proposal. If required, approval from the road authority (RMS and/or Council) would be sought under Section 138 of the Roads Act. Forbes Shire Council, and RMS if required, would be consulted during the design and preparation of the EIS.

5.1.5 Water Management Act 2000

The *Water Management Act 2000* (WM Act) provides for the sustainable and integrated management of the State's water resources. The proposal would require water during both construction and operation. Quantities and sources of water required would be identified during the EIS stage.

5.1.6 Biodiversity Conservation Act 2016

The NSW Government introduced new biodiversity legislation for the consideration and assessment of biodiversity impacts. The *Biodiversity Conservation Act 2016* (BC Act) and *Local Land Services Act 2013* (LLS Act) commenced on 25 August 2017 and have replaced the *Threatened Species Conservation Act 1995*.

The proposal would require assessment under Section 7.9 of the BC Act. A preliminary assessment of potential impacts has been conducted in Section 7 of this report.

5.1.7 National Parks and Wildlife Act 1974

Under the *National Parks and Wildlife Act 1974*, the Director-General of the National Parks and Wildlife Service is responsible for the care, control and management of all national parks, historic sites, nature reserves, Aboriginal areas and state game reserves. The Director-General is also responsible under this legislation for the protection and care of native fauna and flora and Aboriginal places and objects throughout NSW. Under Section 89J of the EP&A Act, an Aboriginal Heritage Impact Permit under Section 90 of the *National Parks and Wildlife Act 1974* would not be required for a State Significant Development. The potential impacts to Aboriginal heritage are discussed in Section 7 of this report.

5.1.8 Heritage Act 1977

This 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 Register. Heritage items are listed in the environmental heritage schedule of the local Council's Local Environmental Plan or listed on the State Heritage Register, a register of places and items of particular importance to the people of NSW. Under Section 89J of the EP&A Act, an approval under Part 4 or a permit under Section 139 of the *Heritage Act 1977* would not be required for a State Significant Development. The proposal is unlikely to directly or indirectly affect any items of heritage significance (refer to Section 7.3).

5.1.9 Crown Lands Management Act 2016

The main aims of the *Crown Lands Management Act 2016* is to provide for the ownership and management of Crown land in NSW, and provide clarity concerning the law applicable to Crown land. Works within a Crown reserve require environmental, social, cultural heritage and economic considerations to be considered, and must facilitate the use of land by the NSW Aboriginal people. A Crown Road abuts the northern boundary of the site, however this does not dissect the development and is not required for site access, thus the proposal will not affect crown lands.

5.1.10 Conveyancing Act 1919

The purpose of the *Conveyancing Act 1919* is to amend and consolidate the law of property and to simplify and improve the practice of conveyancing, and for such purposes to amend certain Acts relating thereto. Subdivision or creation of an easement may be required for the purpose of the transmission line and substation infrastructure.

5.2 Local Government

5.2.1 Forbes Local Environmental Plan 2013

The proposal is in the Forbes LGA and is subject to the *Forbes Local Environmental Plan 2013* (LEP). The aims of the LEP are:

a) to encourage and manage ecologically sustainable development in Forbes,
b) to reinforce the existing urban character of Forbes as the urban focus,
c) to reinforce the rural character of Forbes while promoting sustainable development,
d) to protect the agricultural land of Forbes for continued agricultural production while allowing for planned expansion at the urban fringe,

e) to promote Forbes as a premier tourist-destination building on its unique heritage and environmental attributes as well as sporting and leisure facilities,
f) to protect, enhance and conserve the natural environment, including the Lachlan River, Lake Forbes, wetlands, native vegetation, environmentally sensitive land and other natural features that provide habitat for fauna and flora, provide scenic amenity and that may prevent or mitigate land degradation,
g) to provide a range and variety of housing choices to cater for the different needs and lifestyles of residents.

Under the LEP, the core development area is zoned RU1 primary production. The objectives of RU1 primary production are to:

- encourage sustainable primary industry production by maintaining and enhancing the natural resource base.
- encourage diversity in primary industry enterprises and systems appropriate for the area.
- minimise the fragmentation and alienation of resource lands.
- minimise conflict between land uses within this zone and land uses within adjoining zones.
- provide opportunities for intensive and extensive agriculture in appropriate locations consistent with the environmental capability of the land.

While solar farm development is not specifically referenced as a development permitted with consent, solar developments are not inconsistent with the objectives and principles of the LEP. Whilst the development will impact the availability of the land for primary production, it will sustainably harness a natural resource, namely solar energy, and will provide for a diversified economic stimulus and support to rural communities.

Part 3 Division 4 of the *State Environmental Planning Policy (Infrastructure) 2007* (Infrastructure SEPP), relates to electricity generating works. Clause 34(1) states that development for the purpose of electricity generating works may be carried out by any person with consent on land in a prescribed rural, industrial or special use zone. A 'prescribed rural zone' is defined in Clause 33 as any of the following land use zones or a land use zone that is equivalent to any of those zones:

a) Zone RU1 Primary Production,
b) Zone RU2 Rural Landscape,
c) Zone RU3 Forestry,
d) Zone RU4 Primary Production Small Lots.

The proposed development is classified as electricity generating works and is located on land zoned RU1 – Primary Production under the Forbes LEP (Forbes LEP 2013).

Part 1, Clause 8 (1) of the Infrastructure SEPP, states that 'if there is an inconsistency between this Policy and any other environmental planning instrument, whether made before or after the commencement of this Policy, this Policy prevails to the extent of the inconsistency'. As such the proposed development is permissible with consent under clause 8(1) and 34(1) of the Infrastructure SEPP as an SSD.

5.3 Commonwealth Legislation

5.3.1 Environmental Protection and Biodiversity Conservation Act 1999

The EPBC Act provides an assessment and approval process for actions likely to cause a significant impact on Matters of National Environmental Significance (MNES). These include:

- World Heritage properties.
- National Heritage places.

- Wetlands of international importance (listed under the Ramsar Convention).
- Listed threatened species and ecological communities.
- Migratory species protected under international agreements.
- Nuclear actions (including uranium mines).
- Commonwealth marine areas.
- The Great Barrier Reef Marine Park.
- A water resource, in relation to coal seam gas development and large coal mining development.

Approval by the Commonwealth Environment Minister is required if an action is likely to have a significant impact on a MNES. Assessments of significance based on criteria listed in Significant Impact Guidelines 1.1 issued by the Commonwealth (Commonwealth of Australia 2013) are used to determine whether the proposed action is likely to have a significant impact (i.e. is likely to be considered a 'controlled action').

A search of the Commonwealth Protected Matters Search Tool (refer to Appendix D) indicated four threatened ecological communities, 22 threatened species and 12 migratory species in the search area. Surveys to determine the presence and likelihood of impact to these species/communities would be undertaken during the preparation of the EIS.

Four important wetlands are indicated in the search as their tributaries are location within 10 km of the proposal, however the wetlands themselves are more than 500 km upstream of the proposal. A summary of the EPBC Act search report is provided in Table 3 and the full search results can be found in the NGH Preliminary Ecology Assessment in Appendix D.

Table 3 Summary of EPBC Protected Matters Search Report

Protected Matter	Entities within the search area
World Heritage Properties	None
National Heritage Places	None
Wetlands of International Significance (Ramsar)	4
Threatened Ecological Communities	4
Threatened Species	22
Migratory Species	12
Listed Marine Species	19
Commonwealth land	None
Commonwealth Heritage places	None
Critical habitats	None
Commonwealth reserves (terrestrial)	None
State and Territory reserves	None
Regional Forest Agreements	None

Protected Matter	Entities within the search area
Invasive species	23
Nationally Important Wetlands	None

5.3.2 Native Title Act 1993

The *Native Title Act 1993* provides a legislative framework for the recognition and protection of common law native title rights. Native title is the recognition by Australian law that Indigenous people had a system of law and ownership of their lands before European settlement. Where that traditional connection to land and waters has been maintained and where government acts have not removed it, the law recognises this as native title. People who hold native title have a right to consult or continue to practise their law and customs over traditional lands and waters while respecting other Australian laws. This could include visiting to protect important places, making decisions about the future use of the land or waters, hunting, gathering and collecting bush medicines. Further, when a native title claimant application is registered by the National Native Title Tribunal, the people seeking native title recognition gain a right to consult or negotiate with anyone who wants to undertake a project on the area claimed. Where native title does exist in relation to the proposal site, Edify will comply with the provisions of the *Native Title Act 1993*. A search of the National Native Title Tribunal website (NNTT 2018) indicates no native title claims, land use agreements, applications or determinations within the development site.

6 Consultation

Edify is a long-term owner and operator of projects. This makes an important difference in our community engagement approach due to the fact that we are establishing relationships with communities during the development phase that will endure for the lifetime of the projects.

Community and stakeholder consultation will be integral to the proposal. Edify has begun consultation with a wide range of relevant Local Government and State government agencies, neighbours, local businesses, community groups and other interested parties. Refer to Appendix A for copies of correspondence with stakeholders.

Table 4 summarises Edify's consultation and community engagements.

Table 4 Consultation and Community Engagement

Consultation Guide		
Phase	**Actions/Tools**	**Stakeholders**
Pre-lodgement and development of EIS	FAQ's Meetings – one on one Presentations Local Contractor Presentation and EOI Register Drop in session	Community Landowners Council Government departments

Consultation Guide		
Phase	**Actions/Tools**	**Stakeholders**
	Media release Project email address Project Website Letterbox drop Feedback collation and mitigation options	Neighbours Local businesses Media
EIS public exhibition and determination	FAQ's Drop in session Letters Letterbox drop status update	Community Neighbours Landowners
Post approval (assuming approval granted)	Letters Letterbox drop status update Local Contractor Presentation and EOI Register	Community Local businesses Neighbours Landowners Council
Construction and commissioning	Local consultation with landowners and neighbours Local Council Presentations FAQ's Drop in session Letters Letterbox drop status update Support to landowner team	Community Neighbours Landowners Council

Edify is preparing a Community Engagement Plan (CEP) to provide a framework to further engage with the community and stakeholders about the proposal and ensure opportunities to provide input into the assessment and development process are understood. Stakeholders were identified as those potentially being impacted by the solar farm or having an interest in the project itself. The CEP will set out the project's community engagement approach and minimum requirements with interested parties including representative bodies (e.g. Forbes Shire Council, community groups, and neighbours to the site).

As the CEP is implemented, the following activities will occur:

- Keep the Paytens Bridge residents and broader community informed in all stages of the proposal through media avenues including advertisements in local radio, television and newspaper.
- Face to Face meetings with adjacent landholders, stakeholders and concerned local residents as required.
- A project website including a 'News Room' that will be updated at each project milestone and email address to inform the broader community.
- Preparation and dissemination of a feedback form to better understand the community's sentiment toward solar development and the development of the Peninsula solar proposal. This will be made available at meetings and on the project website.
- Hold an information session during the proposal stage providing access to specialists and project information.
- Develop and implement a benefit sharing scheme in consultation with the community
- A public open day on the site would occur when the approved project commences operation.
- Establishment of a register to record contact with stakeholders including potentially affected landholders.

The CEP would aim to ensure that there is effective, ongoing liaison with the community.

Measures to reduce adverse impacts and promote positive impacts would be identified in the EIS and appropriate management plans developed for the project. Agency consultation would also take place in accordance with any requirements of the SEARs.

6.1 Aboriginal Community Consultation

Edify Energy recognises the Wiradjuri People as the original custodians of the lands throughout Paytens Bridge and as such will be invited to undertake an Aboriginal cultural heritage assessment as part of this proposal's EIS.

The NSW DPIE, Office of Environment, Energy and Science (formerly OEH), acknowledges that Aboriginal people are the primary determinants of the significance of their heritage. It is acknowledged that Aboriginal people should be involved in the Aboriginal heritage planning process and are the primary source of information about the value of their heritage. This includes the best management and conservation measures for Aboriginal heritage and the way in which their cultural information (particularly sensitive information) is used (OEH 2011:2). Edify Energy considers that proactive engagement and consultation with the local Aboriginal community is regarded as an integral part of the process of investigating and assessing Aboriginal cultural heritage.

As the project's SEARs are being requested to inform the forthcoming EIS process, consultation with the Aboriginal community will be commenced under the due legislative process and accordingly undertaken as part of EIS studies. Aboriginal community consultation undertaken for this project will follow the Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW 2010) (Consultation Requirements). The Consultation Requirements outline a four stage Aboriginal consultation process and mandate specific timeframes for each stage.

6.2 Consultation to date

Adjacent landowners and those situated within 4.5 km of the subject land have been contacted by phone and email to inform them about the project and offer them the possibility to meet. Some meetings have been held on 2nd December 2020 within the community, with additional meetings proposed as required or requested. Landowners met were informed about the project and were given the following information:

- Presentation by Edify
- Presentation of the development process of a solar and battery project in NSW
- Potential land considered for the development
- Discussions on the concerns raised by the landowners
- The contact email address of Edify's Project Manager was shared

A presentation leaflet on Edify's typical development strategy and further details on Edify as a company, in the form of an information booklet was shared with adjacent neighbours, in addition to mapping and design tools that illustrate the project plans. During the various discussions with adjacent neighbours, Edify's development team received feedback to allow early adaptations to the project, such as increasing the exclusion zones to the north of Lot 441 DP1124885.

During the meetings in December 2020, landowners raised several questions and concerns. Among others, the main concerns raised were the following:

- Visual amenity changes to the region
- Potential noise impacts on adjacent properties; and
- Weed and vegetation management.

When possible at this stage of the development, Edify has provided initial answers to those concerns. In order to plan further early-stage consultation, neighbours were informed by phone or email and were offered the possibility to provide feedback through a face to face meeting or by phone when a face to face meeting couldn't be held directly.

Additionally, a letter of information was sent in November 2020 to the office of the Federal Member for the Riverina Electorate as well as to the office of the Member of Parliament of NSW for the Orange electorate. A subsequent meeting with held with the Member for Orange and staff to discuss the proposal. Edify has also held two in-person meetings with the Forbes Shire Council in November and December 2020. Evidence of these meetings is provided in Appendix A.

6.2.1 TransGrid

Discussions with TransGrid started in the second half of 2020 through the submission of a Connection Enquiry. Confirmation was given of the available capacity on the transmission line for the connection of an additional generator subject to further precise studies. Discussions are ongoing as connection studies started between Edify and TransGrid in the first half of 2021.

6.2.2 Forbes Shire Council

There have been two meetings (4 November and 2 December 2020) and on-going discussions with the Forbes Council since the beginning of prospection in the LGA. Main points discussed have been:

1. Subdivision requirements
2. Traffic volumes, access routes and potential for rail logistics and road upgrade requirements
3. Site waste management practices
4. Local employment and accommodation plans; and
5. Voluntary planning agreement requirements

6.2.3 Industry

One industrial operation (rock quarry) exists on the land directly adjacent to the development site. Correspondence with the quarry operator is provided in Appendix A.

6.3 Community Investment

As a leading renewable energy developer, Edify Energy is committed to supporting the communities that host our clean energy projects with positive and lasting social, environmental and economic benefits.

During early consultation with Forbes Shire Council, Edify has discussed a voluntary planning agreement which may establish an appropriate committee to oversee the delivery of a portion of revenue from the proposed Peninsula Solar Farm back into the local community each year, for the life of the solar farm.

A Community Engagement Plan will also be created to support the EIS phase of the project's development.

7 Preliminary Environmental Assessment

7.1 Methodology

A preliminary environmental risk assessment has been conducted to assist in the identification of key environmental matters that would require detailed assessment within the EIS. Risks were identified for both the construction and operation phase of the proposal and analysed in relation to their possible consequence and likelihood of occurrence. From this analysis, some environmental matters were deemed to be key issues on the basis that they had the potential, without suitable mitigation, to have a significant impact on the environment.

The assessment is based on a desktop review and preliminary site inspection (involving flora and fauna surveys) to identify potential high-level constraints and major risks to the proposal. A preliminary constraints map is provided in Figure 14. This will be used to guide further detailed investigations and ultimately the site infrastructure layout. Constraints mapping will also be refined based on these investigations prior to submission of the EIS.

A summary of the key environmental issues is provided in Section 7.2. The intent of the discussion is to demonstrate an understanding of the issues that require further environmental assessment and likely mitigation measures for these key issues. The potential impacts and management of other (less significant) issues are discussed in Section 7.3. The following environmental risks are considered to be key aspects:

- Biodiversity
- Aboriginal Heritage
- Traffic and transport
- Landscape and visual amenity
- Noise
- Land use and resources
- Watercourses and hydrology
- Cumulative impacts.

7.2 Assessment of Key Environmental Issues

7.2.1 Biodiversity

Overview

The development site has been selected on the basis that it supports limited native vegetation. The land has been extensively farmed, including cropping and grazing over a long period of time.

The primary constraint is associated with remnant woodland vegetation mostly located in the southern portion of the proposal site. Further survey of the area is a requirement of the EIS, and a full assessment of the impact to potential habitat in these areas would be conducted by a specialist 3rd party consulting group.

Methodology

Edify Energy has undertaken a preliminary constraints assessment of the proposal to identify potential high-level constraints and major risks to the proposal. Edify engaged NGH Pty Ltd (NGH) to undertake a Preliminary Ecology Assessment of the development area and parts of the expected access corridor along Paytens Bridge Road. In addition, NGH was also commissioned to undertake a Land Category Assessment, to distinguish Category 1-exempt land and Category 2-regulated land within the project land. NGH completed these reports by undertaking desktop database searches, in addition to conducting a preliminary field assessment on 10-11 December 2020. A copy of the Preliminary Ecology Assessment and Land Category Assessment reports can be found in Appendix D.

A Biodiversity Development Assessment Report (BDAR) will be completed after the SEARs have been received and a final development footprint is determined.

The following is a summary of the desktop and field surveys completed to-date. The full details of the assessment undertaken by NGH is included in Appendix D.

The key biodiversity features that may pose constraints within the study area include:

- Plant Community Types listed as threatened under the NSW *Biodiversity Conservation Act 2016* (BC Act) or Commonwealth *Environment Protection and Biodiversity Act 1999* (EPBC Act).
- Threatened species listed under the BC or EPBC Act.
- Habitat for threatened species listed under the BC or EPBC Act.
- Prescribed biodiversity impacts under the Biodiversity Assessment Methodology (BAM).
- Biodiversity Values mapped under the BC Act.
- Serious or Irreversible Impacts (SAII).
- Riparian and/or terrestrial corridors and connectivity and wetland inundation areas
- Groundwater Dependent Ecosystems

7.2.1.1 Flora

Threatened Ecological Communities

The EPBC Act Protected Matters Search undertaken indicated four listed threatened ecological communities (TECs) which may or are likely to occur in the search area (refer to Appendix D):

- Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of Southeastern Australia.

- Poplar Box Grassy Woodland on Alluvial Plains
- Weeping Myall Woodlands.
- White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland.

Of these listed TECs, only the EPBC Act (critically endangered) and BC Act (endangered) *White Box Yellow Box Blakely's Red Gum Woodland* TEC was found to be present on the subject land. One other TEC that was not listed in the EPBC search results was identified by the ecologists, however this small area of the endangered (under the BC Act and EPBC Act) *Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions* is outside the indicative footprint, thus should require no further assessment unless the footprint changes to impact the TEC. These listed TECs are shown in Figure 14 below.

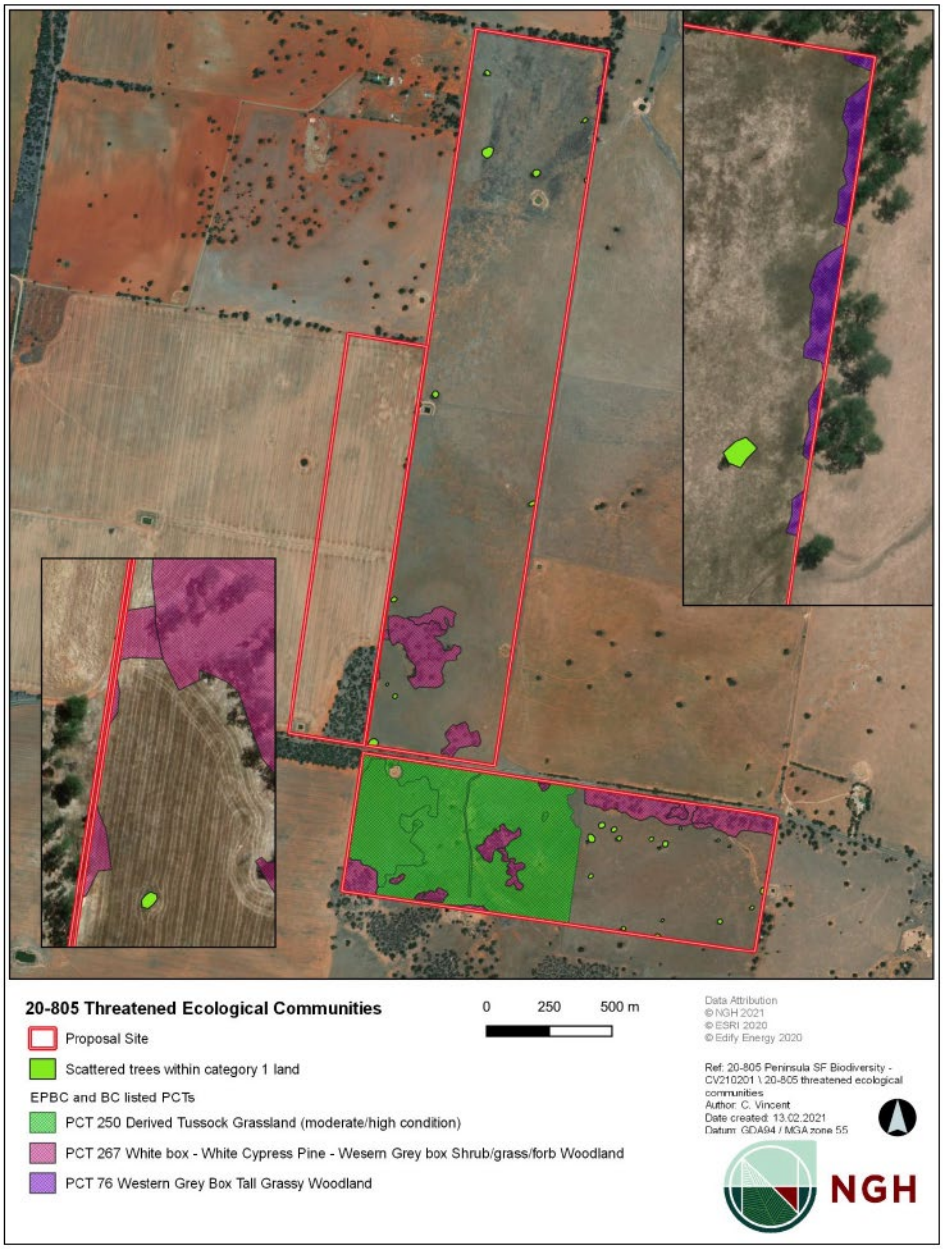
Plant Community Types

Under the NSW Department of Planning, Industry and Environment (DPIE) Biodiversity Conservation Division (BCD) Plant Community Type's (PCTs) are the lowest level of classification and the accepted standard for describing plant communities. Three PCTs were determined to occur on the site and all are associated with the two present/identified Threatened Ecological Communities (TECs) under the BC Act and the EPBC Act. The PCTs in the project area occur in a degraded form due to agricultural practices and historic clearing. These listed PCTs are shown in context of the subject land in Figure 14 below.

Threatened Flora Species

The EPBC Act search indicated 3 threatened flora species and a search of the NSW Bionet Atlas revealed one threatened flora species. No threatened flora species were identified onsite during the initial survey. Additional species may be identified during the BAM assessment and survey process.

Figure 14. Threatened Ecological Communities (TECs) and Plant Community Types (PCTs) – ground-truthed by Ecologists

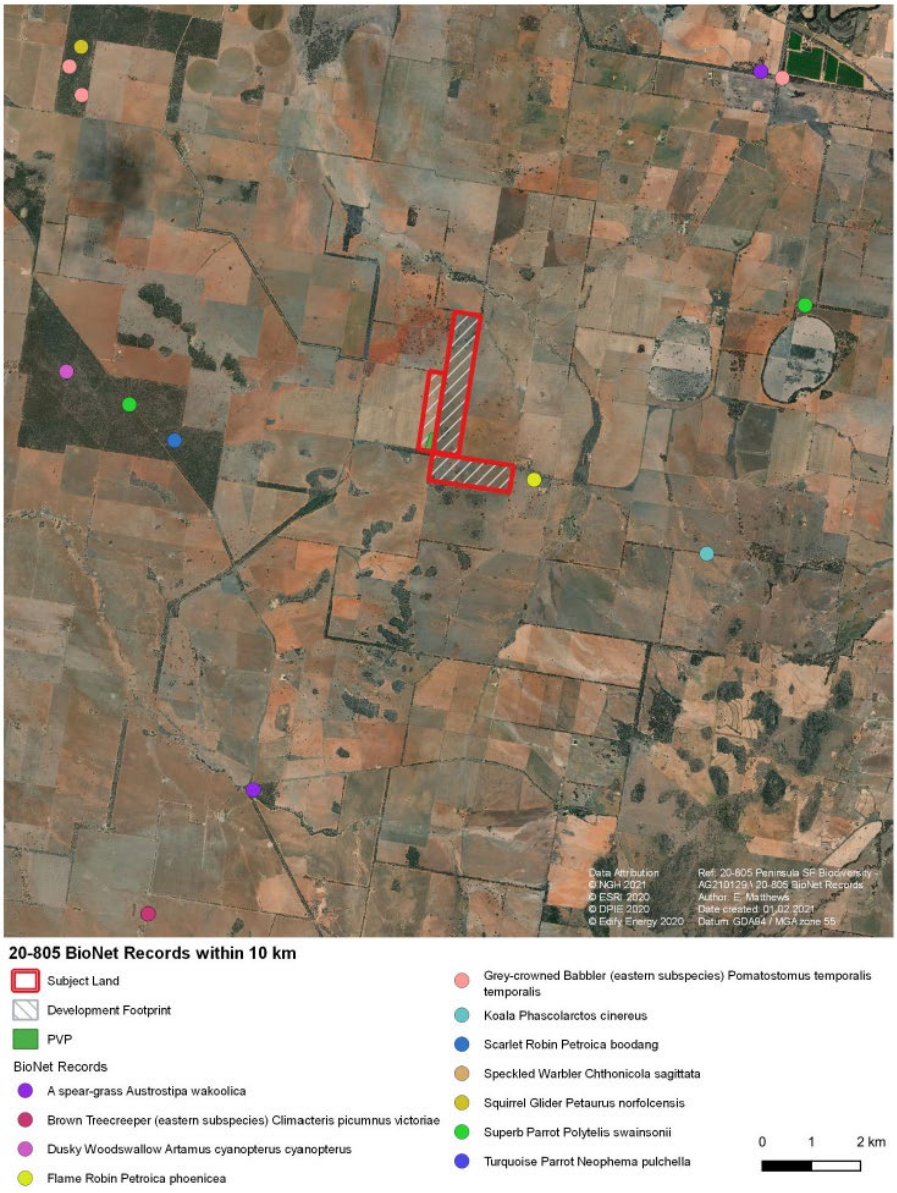


7.2.1.2 Fauna

The EPBC Act search indicated 20 threatened fauna species that are known to occur or have potential to occur in the search area. The NSW Bionet Atlas search indicated 8 threatened bird species and 2 threatened mammal species within a 10km radius from the subject land. None of these species were identified onsite during the initial survey, though this may be attributed to time of day, weather, season, disturbance by stock and agricultural activities.

Brown Treecreeper – eastern subspecies *(Climacteris picumnus victoriae),* Speckled Warbler (*Chthonicola sagittata)* and Flame Robin (*Petroica phoenicea*) occur within 500m of the project area were recorded within 1 km of the subject land. Figure 15 details locations of threatened species records.

Figure 15. Threatened Flora and Fauna Species indicated in the database searches



A preliminary Biodiversity Assessment Methodology (BAM) Calculator was run in December 2020, to predict the credit species that may occur at the development site. A list of the species that will require surveys and the specified survey period to confirm presence/absence and for the purpose of quantifying credits has been developed by the ecologists. Additional species may be identified during the BAM assessment and targeted survey process. Further detailed information on the existing fauna values and potential impacts associated with the proposed development will be contained in the BDAR that will accompany the EIS.

Potential Impacts

The following impacts upon biodiversity have been considered as having potential to occur during the construction and operation of the proposal:

- Clearing, removal and disturbance of vegetation, in particular paddock trees;
- Clearing of limited habitat (including disturbance of foraging habitat, sheltering and breeding habitat);

- Loss of connectivity and nesting sites;
- Introduction and spread of invasive species and weeds;
- Increased risk of competition with regenerating native plants;
- Disturbance or displacement of fauna;
- Microclimate impacts due to shading, water availability, temperature etc.; and
- Movement barrier and collision hazard by perimeter fencing.

Further assessment

A full floristic plot survey is required to determine the floristic composition, condition and EEC status of native vegetation at the proposal site. Fauna survey and habitat assessment is also required to determine the potential for the presence of threatened fauna species and habitat features such as tree hollows. These surveys and assessments would be undertaken as part of the EIS, under the BAM. This would include the calculation of any biodiversity offset required for the project.

7.2.2 Aboriginal Heritage

The project area is within the Wiradjuri Region, whose people are the largest Aboriginal Nation in NSW. Wiradjuri people are originally from the land that is bordered by the Lachlan, Macquarie and Murrumbidgee rivers in Central New South Wales.

A search of the Aboriginal Heritage Information Management System (AHIMS) on 8 January & 17 February 2021 identified one (1) Aboriginal site and no Aboriginal places within the Paytens Bridge area. Refer to AHIMs search results in Appendix B.

Landforms, vegetation and soils over much of the proposal site have been heavily disturbed by paddock levelling, cultivation, track formation and clearing for agriculture. This is likely to reduce the potential for Aboriginal heritage sites of significance in the affected areas. Conversely, unmodified areas with remnant woodlands exist within the site and are likely to have a higher potential for significance. It is noted that field assessment is required to confirm this and that any Aboriginal heritage sites/items/etc. identified would be a moderate to high constraint, requiring impact mitigation.

Aboriginal consultation

Consultation with Aboriginal stakeholders would be undertaken in accordance with clause 80C of the *National Parks and Wildlife Amendment (Aboriginal Objects and Aboriginal Places) Regulation 2010* following the consultation steps outlined in the Aboriginal Cultural Heritage Consultation Requirements for Proponents provided by OEH.

A brief summary of the consultation process includes:

1. Registration and initial consultation and registration of Aboriginal community members.
2. Review of survey methodology by Registered Aboriginal Parties (RAPs).
3. Completion of field work and reporting.
4. Review of report by RAPs.
5. Report finalisation.

Potential impacts and Further Assessment

Construction has the potential to disturb unknown sites of Aboriginal cultural heritage significance. Impacts during operation and decommissioning are expected to be minimal.

An Aboriginal cultural heritage assessment (ACHA) and associated stakeholder consultation will be completed as part of the EIS. This would include consultation with the Wiradjuri (Peak Hill Aboriginal Land Council) as

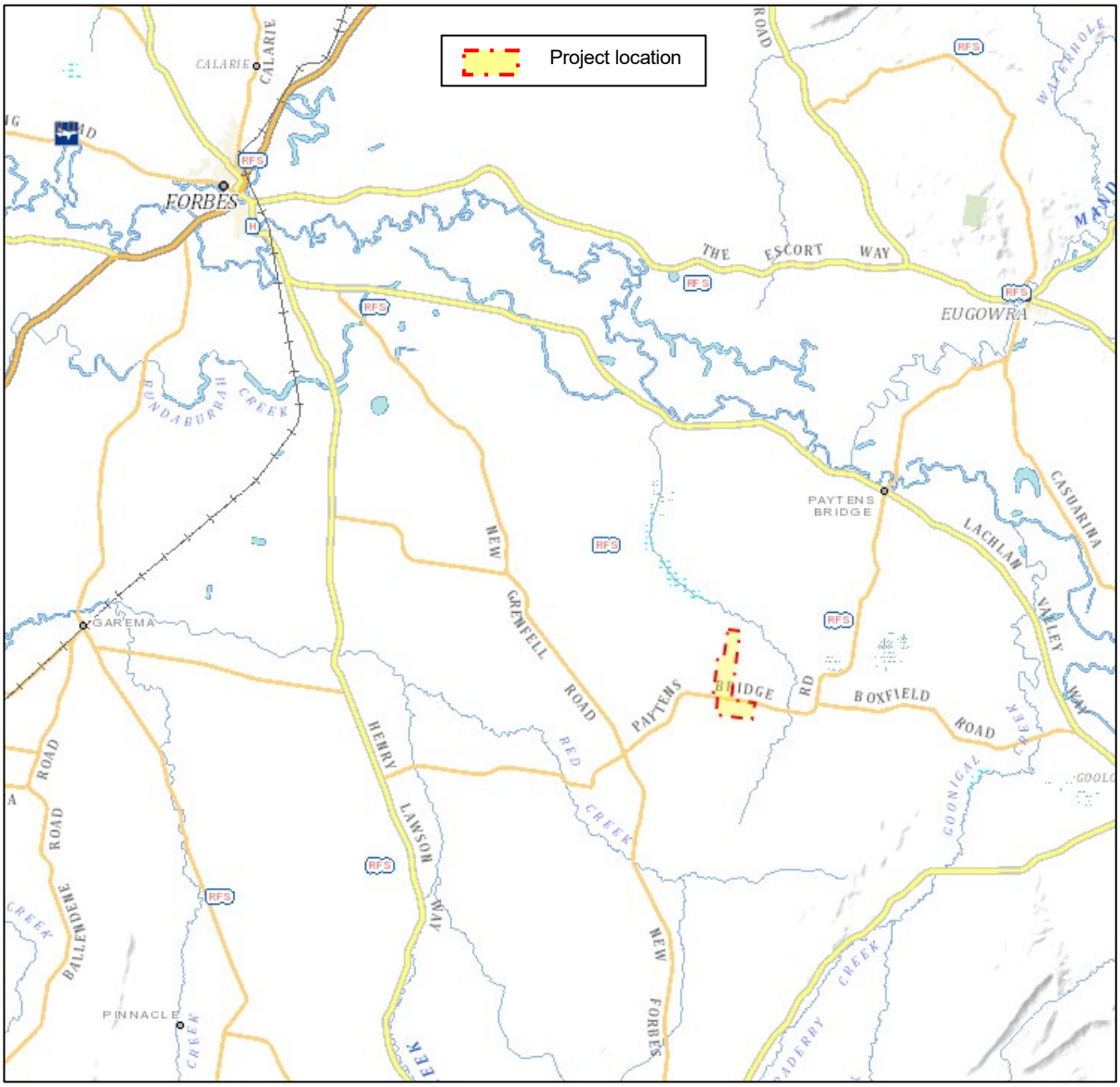
well as any other relevant stakeholders in accordance with the *Aboriginal Cultural Heritage Requirements for Proponents* (DECC 2010). Should any Aboriginal heritage sites be identified that may be potentially affected by the proposal, mitigation measures will be determined in accordance with the *Guide to Investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW* (OEH 2011).

The required mitigation measures will be implemented during construction activities through a specific Cultural Heritage Management Plan as part of the Construction and Environmental Management Plan (CEMP) that would be prepared for the project. Similarly, any ongoing management and mitigation measures would be implemented through an Operational Environmental Management Plan (OEMP).

7.2.3 Traffic and Transport

The primary access route to the development area is via Paytens Bridge Road, which is a paved (mostly) dual carriage road with some single carriage sections. Paytens Bridge Road can be accessed from New Grenfell Road off Lachlan Valley Way, which is the main road coming out of the southern end of Forbes, via the Newell Highway, which bisects the town of Forbes (see Figure 16).

Figure 16. Road and Rail Network in Local Surrounds



Paytens Bridge Road primarily services local traffic and agricultural operations. The Newell Highway is a National Highway and likely to be the major transport route for haulage during the construction phase of the project. Several haulage route options will be considered for the project, either accessing from the north, via Orange and Parkes, through the Blue Mountains or from the south via Yass and Forbes.

To further support the NSW state government's target for increased rail modal share, the project will also investigate the use of rail for haulage of project components. Rail is a safe, efficient, and ideal choice for transporting the many intermodal shipping containers that will be used to deliver solar panels and other components. The Stockinbingal-Parkes railway line, which is managed by the Australian Rail Track Corporation (ARTC), is to the west of the project site. Parkes, which is approximately 33km to the north of Forbes (and 48km from the development area), is the crossroads of the Australian railway system, with access to all the state capitals and major ports via the Defined Interstate Rail Network (DIRN), which is standard gauge.

Forbes Shire Council indicated there is a suitable siding at Forbes (Mountain Industries intermodal terminal) which can be used as a staging area where intermodal containers might be unloaded to transfer materials onto trucks for delivery to site. Indeed, Council noted this delivery option has been utilised by the Jemalong Solar Farm development during construction. Parkes also has several sidings with extensive intermodal handling and transhipment capabilities. It is understood there are several local trucking contractors who can handle the 'last miles' from the railhead to the project site.

Potential impacts and Further Assessment

During construction there will be a temporary increase in traffic along the Newell Highway and the local road network as components are brought to site and construction workers travel to/from the site. This will indirectly lead to some increase in localised noise levels during the main construction period. Traffic management during construction will also need to consider activities during key agricultural activities such as harvesting periods, the associated vehicle movements and their timing. Traffic impacts during operations will be minimal, with approximately five full-time staff at the solar farm. Traffic is predicted to be limited to employee vehicle movements for full-time staff, plus a small number of daily vehicle movements associated with ongoing maintenance and associated activities performed by local contractors/consultants.

During the decommissioning phase, a temporary increase in construction traffic would be expected as infrastructure is removed.

A detailed Traffic Impact Assessment (TIA) will be included as part of the EIS. The TIA will identify the impacts and assess the significance of any impacts on the road network and community during construction, operation and decommissioning phases. The TIA will also consider the requirement for road upgrades. The required mitigation measures would be implemented during construction and operational activities through implementation of detailed Traffic Management Plans (TMPs) that would be prepared for the project for each relevant phase.

7.2.4 Visual Amenity and Landscape Character

The proposal has potential to result in visual impacts to neighbouring houses and road users adjacent to the site. The site is located within a rural area with large lot agricultural production and sparsely distributed residences usually located some distance from main roads.

There are eight (8) potentially sensitive receivers and one industry (rock quarry; R14) exist within 4 km of the subject land (see Figure 9). The closest sensitive receivers are located 323 m west (R13) and 570 m (R4) east from the subject land. The flat terrain and intermittent tree cover limits long range views in the locality. However, both receivers have existing native vegetation and other existing infrastructure (e.g. block-out fence panels) situated between the dwelling and proposed development site.

An assessment of the level of visual disturbance would be undertaken as part of the EIS. The EIS would also consider the potential for the solar farm to affect local landscape character. Additional consultation with specific affected residences would be undertaken to identify the nature and significance of impacts and the need for mitigation measures. The level terrain improves the potential effectiveness of vegetation plantings as screening around the site.

It is noted that solar panels are designed to absorb as much sunlight as possible, with the use of anti-reflective coating boosting energy yield whilst decreasing normal incidence reflectance to less than 1% (generally 4% per Fresnel's equation, when AR coating is not used). They therefore reflect a very low percentage of the light and are not considered likely to result in glare or reflections that would affect traffic or nearby receivers.

Further assessment

A landscape and visual impact assessment, including photo montages and community consultation, would be prepared as part of the EIS to investigate visual impacts and mitigation options.

7.2.5 Noise

Existing background noises levels on, and surrounding the development area, are likely to be low and typical of the rural setting. Sources of background noise would include vehicle use along Paytens Bridge Road and equipment used on adjacent rural landholdings. Additionally, the quarry mine operation on the land immediately to the west of the subject land would contribute to occasional/regular increases in background noise. It is noted the quarry mine operation is on land owned by the nearest sensitive receptor (R13) to the development area.

There are eight (8) potentially sensitive receivers within 4.5 km of the development site (Figure 9). Noise impacts, for the most part, only occur during construction (generated by construction vehicles and machinery), with minimal noise likely to be generated during operation. Edify and the construction contractor will adopt best practice mitigation measures during construction, such as standard work hours and regular vehicle and machinery maintenance to reduce the risk of adverse noise impacts.

During the operation of the project, low level noise would be potentially produced by the solar tracking system, the substation and switchgear, battery and any maintenance works undertaken at the site. Noise impacts during operation of the solar farm are expected to be very low or, in any case, not expected to be discernibly different than those existing in the surrounding rural environment.

Further assessment

A construction and operational noise assessment would be undertaken as part of the EIS to assess potential noise impacts. The assessment would be undertaken in accordance with the *Interim Construction Noise Guideline* (DECC 2009) and *NSW Noise Policy for Industry* (NSW EPA 2017).

7.2.6 Land Use and Resources

The rural land within the region is used primarily for agriculture including cropping and grazing. The development area comprises several large paddocks which have been deep ripped and largely cleared for pastures and grazing. Land and agricultural activities like those of the development site are widespread in the region. There is no evidence of horticulture or other intense farming activities within the development site.

The *Mining, Petroleum, Production and Extractive Industries State Environmental Planning Policy 2007* (the Mining SEPP) extends across the proposal. The land is not classed as BSAL or CIC in the Mining SEPP Strategic Agricultural Land Map; BSAL has been described as land with high quality soil and water resources capable of sustaining high levels of productivity, while CIC are concentrations of highly productive industries

within a region that are related to each other, contribute to the identity of that region, and provide significant employment opportunities.

The land is classified as Class 4 under the *Land and Soil Capability Assessment Scheme* (OEH 2012), which is moderate capability land with moderate to high limitations for high impact land uses. This restricts management options for regular high-impact land uses such as cropping, high intensity grazing and horticulture. Limitations can only be managed by specialised management practices with a high level of knowledge, expertise, inputs, investments and technology.

The land is used for a range of crops and pastures.

There are no mineral titles and no mineral applications relevant to the development site indicated in the MinView database (DPE 2020). This was confirmed by a letter from the NSW Division of Resources and Geoscience, stating there are no current mineral, coal or petroleum titles over the site. Engagements have been made with a party that has raised an exploration application over the lands adjacent to the west of the development area (refer to Appendix A).

For the construction period, there would be a complete reduction in agricultural activities within the development footprint. During the operational phase, not all agricultural activities would be precluded, and it is highly likely that limited production such as occasional grazing could continue. As such, it can be expected that the nature of the agricultural activities would change from cropping and grazing to predominately grazing within the development site.

The amount of agricultural land that would be temporary unavailable for cropping during operation is small given the large amount of available agricultural land within the surrounding locality. Given the dry climatic conditions currently being experienced across Australia, a reduction in cropping would be beneficial to the land and its resources as it would result in a reduction in water use. This would be further explored in the EIS.

The project would be decommissioned at the end of its operational life, removing all above and below-ground infrastructure up to one-meter below ground. It is expected that the land would be returned to its prior production uses, as solar farms and battery projects typically do not have significant permanent impacts to soil and landform. Overall, the adverse impacts related to alienation of resources are expected to be low and restricted only to the period of operation.

Further assessment

The impact on agricultural production in the locality and region would be assessed in detail in the EIS.

7.2.7 Watercourses and Hydrology

The proposal is located approximately 9 km south of the Lachlan River. The Mulyandry Creek watercourse also runs in proximity to the north and eastern boundary of the development site. This creek is classified as first or second order streams under the Strahler Stream Classification System (DPI 2018). This creek experiences moderate water flow at times of high rainfall. Development is not proposed within the creek lines and no riparian vegetation would be cleared as Mulyandry Creek is located over 460 m from the proposed site boundary. There are no riparian corridors in the project area.

There are four (4) farm dams within the development site. None of the farm dams across the proposal site are large and contain only poor-quality aquatic habitats. Most or all of these dams are proposed to be retained, allowing for continued support of some aquatic habitat. Water demand for the proposal would be relatively small, as construction of the solar farm is not water intensive. Stock will potentially be watered from retained dams and/or artificial water sources.

Aquatic and terrestrial Groundwater Dependant Ecosystems (GDEs) have been reviewed on the subject land. Aquatic GDEs do not occur within the subject land but Terrestrial GDEs do occur. Terrestrial GDE in the project area is classified as 'Unclassified Potential GDE', but the areas mapped correspond to the mapped PCTs 250 and 267 and 76 and hence already pose a high constraint. However, most of the PCT areas are proposed to be retained, thus the impact will likely be reduced/minimised. There is a low potential for groundwater to be encountered during excavations and earthwork for the construction. This is likely to be highly localised and no inception of groundwater is considered.

The development site is not identified as flood prone land under the Forbes LEP. The development site is outside of the critical flow distribution areas detailed within the management plan. Moderate to major flooding events have been recorded throughout the Forbes LEP, however this is not considered to be a major risk throughout this region of Paytens Bridge. Local flooding risk will be assessed in detail as part of the EIS.

Potential Impacts

Impacts upon watercourses and hydrology that are considered as having the potential to occur during the construction of the proposal include:

- Potential removal of suitable aquatic habitat by filling in dams for threatened species.
- Accidental release of hydrocarbons by inappropriate storage, use and disposal of chemicals.
- Domestic waste, effluent and putrescibles causing contamination.
- Erosion of soil and sedimentation through stormwater runoff.
- Dewatering sediment laden water from excavations.

Further assessment

The EIS would assess the impacts to waterways during construction and operation and include a flood impact assessment and appropriate mitigation measures as required.

7.2.8 Cumulative Impacts

Cumulative impacts, for the purpose of this assessment, relate to the combined potential effects of different types of impacts (i.e. traffic combined with noise) as well as the potential for combined impacts with other significant projects either under construction or already established land uses in the local area.

A review of the NSW Major Project database for the Forbes LGA was undertaken and identified the following major projects that may be relevant to the proposed Peninsula solar farm project:

- Recently Constructed
  - The 50 MW Jemalong Solar PV Plant located 30 kms west of Forbes was granted development consent on 18 May 2018, followed by successful financing and the eventual construction completed in late 2020. Now operational, this is not considered to create any significant cumulative impacts to the proposal.
  - The 67.8MW Goonumbla Solar Farm is located approximately 10km to the west of Parkes, adjacent to the Parkes Solar Farm. Construction has been completed and it is expected to begin operating in early 2021. As this is into the operational phase, this is not considered to create any significant cumulative impacts to the proposal.
- Ongoing proposals:
  - The proposed 80 MW Quorn Park Solar Farm is located 8.5km to the west of Parkes. The project received development consent in July 2020, however progress on the financing of the project remains unclear. Edify will continue to monitor and consider this project for potential cumulative impacts to the proposal.
  - The proposed 100 MW Daroobalgie Solar Farm is located 11km north-east of Forbes. The SEARs for this project was issued in December 2019. Progress on the continued

development of the project remains unclear. Edify will continue to monitor and consider this project for potential cumulative impacts to the proposal.

There is the potential for cumulative socio-economic and traffic/transport impacts if the timing of the construction of the Quorn Park and/or Daroobalgie Solar Farms coincides with the proposed Peninsula Solar Farm.

Consideration will also need to be given to established users of the road network such as school bus services and for major events like the Parkes Elvis Festival.

7.3 Other Environmental Issues

There are a range of potential environmental issues associated with the proposal which are not considered to be key issues. These are considered secondary issues for investigation, given the characteristics of the proposal and the availability of appropriate safeguards for mitigation. These issues are outlined in Table 5 below. The impacts and any required mitigation relating to these issues would be addressed at an appropriate level of detail in the EIS, and in response to relevant requirements outlined in the SEARs.

Table 5 Other Environmental Issues

Existing Environment	Potential Impacts	Management and Mitigation
Soils		
CSIRO's ASRIS database shows that the development site is dominated by sodosols. Sodosols are soils with a clear or abrupt textural B horizon and in which the major part of the upper 0.2 m of the B2 horizon (or the major part of the entire B2 horizon if less than 0.2 m thick) is sodic and not strongly acid. The nearest eSpade soils profiles (OEH, 2020) are off the road leading from Bandon along the eastern boundary of the development site. This notes a soil type of vertosol (ASC), Brown Clay (GSG) and Ug5.34 (PPF), with local relief being extremely low (< 9m). Surface conditions are noted to be cracked, the profile drainage is poorly drained, and no salting is evident. The Soil Essentials Report includes details that Layer 1 (0.00 – 0.15m) notes dark greyish brown (moist) clay with moderate pedality and pH of 7.0. Layer 2 (0.15 – 0.45m) is consistent with Layer 1, with a pH of 8.0. Layer 3 (0.45 – 0.65m) is consistent with above, with a pH of 9.0 and very few segregations (< 2 %).	Construction activities would include minor excavations and vegetation removal which have the potential to cause soil erosion and sedimentation and dust issues.	The design would provide all weather access at the site during construction and operation to avoid erosion/sedimentation impacts and tracking of soil, in particular after rain events. The EIS would provide thorough consideration of soil impacts, runoff and potential for erosion and proposed mitigation measures during construction and operation.
Historic Heritage		

Existing Environment	Potential Impacts	Management and Mitigation
A search of the NSW Heritage Register on 14 October 2020 for the Forbes LGA identified 0 records under the NPW Act, 3 items under the NSW Heritage Act, and 0 items listed under the Forbes LEP and by state agencies. A search of the Australian Heritage Database on 13 October 2020 identified 27 records in the Forbes LGA (Appendix C). The closest listed heritage items are in the township of Eugowra and Forbes, including *The Forbes Branch of the ANZ Bank*, *The Albion Hotel*, and the *Orana Ornithological Area*, which are all at least 30 km of the proposal.	Edify considers there to be a low risk of impact to heritage items.	The heritage status of the site would be assessed during fieldwork undertaken as part of the archaeological assessment. Appropriate management measures would be implemented if required.
Access and traffic		
The RMS NSW Combined Higher Mass Limits and Restricted Access Vehicle Map (RMS 2018) indicates that the Hume Highway, Lachlan Valley Way are approved heavy vehicle access routes (25/26 m B-double routes as a maximum), with the final route of Paytens Bridge Road being an approved route "With Travel Conditions" (refer Appendix C). As such, the major access and transport/haulage route is likely to be via Lachlan Valley Way, then turning south-west onto Paytens Bridge Road. The major transport route is subject to further assessment, specialist input and consultation with	Construction traffic could impact traffic along Paytens Bridge Road, Lachlan Valley Way and the Hume Highway, and the surrounding road network. Maintenance access tracks during operation would also be required across the development site. During construction, there may be impacts to residences along the access route associated with dust, vibration and noise.	Construction traffic impacts would be considered in the EIS. Consultation would be undertaken with the local council and local residents regarding the works that may affect roads or traffic. The design would also consider any requirements from the RMS, local council and other relevant stakeholders on access arrangements to the proposal site.

Existing Environment	Potential Impacts	Management and Mitigation
Forbes council and the Roads and Maritime Services (RMS). New site accesses will be constructed off Paytens Bridge Road (being the approved heavy vehicle access routes), with proposed emergency and maintenance only access from either alternative road. Refer to Figure 16 and Appendix C for access routes to the site. Access design and location is indicative only, subject to further assessment and specialist input. Internal access tracks would be constructed as part of the works.		The mitigation measures would require a Traffic Management Plan to be prepared.
Contamination		
The EPA contaminated land register identified two contaminated sites within the Forbes LGA, which is over 37 km north-west of the proposed project site and not considered a relevant risk. It is also noted that one of the entries is not located within the Forbes LGA (rather, in Parramatta) and is considered a database error (Appendix C). Contamination associated with agricultural activities (e.g. pesticides, petrochemicals) or asbestos construction or insulation materials may still be present on the site.	There is potential that contaminants may be uncovered during excavation activities at the site.	Risks associated with contamination at the site are considered low and therefore no detailed investigation is likely to be required within the EIS. The mitigation measures would require a CEMP to be prepared to manage any contamination identified during site construction.
Air quality		

Existing Environment	Potential Impacts	Management and Mitigation
The air quality in the study area is expected to be good and typical of rural settings in NSW with low population density and few industrial pollution sources. Existing sources of air pollution are expected to include vehicle emissions, dust from agricultural practices and smoke from seasonal stubble burning. During colder months, solid fuel heating may result in a localised reduction in air quality, particularly if temperature inversions operate overnight.	The construction of the proposal is not anticipated to have a significant impact on air quality and would mostly be related to dust during dry periods and vegetation removal. Impacts to air quality during operation would be negligible.	The mitigation measures would require a CEMP to be prepared to manage air quality impacts during the construction phase. There is an opportunity to improve local air quality by maintaining ground cover vegetation under the panels.
Hazard and risk – electric and magnetic fields (EMF)		
Existing powerlines produce EMF at the site. Additional infrastructure which forms part of the proposal such as connecting powerlines and substation would produce additional electromagnetic emissions at the site.	The substation, battery storage and network connection would be located on the proposal site. The powerlines constructed as part of the proposal would not pass through any neighbouring properties. The EMF that would be generated by the proposed powerlines, battery storage and substation is expected to be below the guideline for public exposure and would not be expected to have an adverse impact on human health.	The EMF levels of the proposed powerlines, battery storage and substation would be assessed as part of the EIS.
Battery storage is proposed to integrate with the solar farm generator	Batteries pose a potential fire or contamination risk to the site.	An assessment of hazard and risk would be assessed in the EIS as per SEPP 33 – Hazardous and Offensive Development. A Preliminary Hazards Assessment would be undertaken to assess SEPP 33 requirements.
Hazard and risk - bushfire		

Existing Environment	Potential Impacts	Management and Mitigation
The development site has been predominantly cleared for agriculture. The site has not been identified as bushfire prone land on NSW Rural Fire Service mapping.	The proposal is unlikely to be affected by bushfire or pose a significant bushfire risk.	The impacts and risks of a bushfire or gas explosion or leak would be assessed in the EIS. Risk of fire from proposed infrastructure will also be addressed in the EIS.
Social and economic impacts		
The proposal is located within the Forbes LGA. In 2018 Forbes LGA had a population of 8,432. The main industry of employment in 2016 was beef cattle farming. Workforce accommodation would be required for approximately 250 workers during peak construction periods. A large majority of these would already reside locally. For visiting workers, accommodation can be sought from Forbes or other towns within a 100 km radius, including Eugowra, Canowindra, Cowra, and Grenfell. There is potential for a shortage in accommodation for tourists visiting the region to occur with large numbers of staff utilising accommodation. There is community concern that the proposal will reduce agricultural employment in the area for the life of the project and put current employers out of work.	The proposal may reduce the availability of agricultural land, but would generate economic benefits during construction and operation, including local direct and indirect employment opportunities outside of agricultural activities. Other socio-economic impacts would include traffic and access, noise, air quality and visual impacts.	The EIS would assess potential social and economic impacts of the proposal.
Utilities		
Electricity network TransGrid manages and operates the high voltage electricity transmission network in NSW. TransGrid has restrictions on development within	The proposed works would involve works adjacent to the Transgrid utility. The solar farm will	The EIS would assess the proposal against the setback and approval requirements of TransGrid. The solar farm would be designed to

Existing Environment	Potential Impacts	Management and Mitigation
powerline easements. TransGrid guidelines state that activities and encroachments are prohibited within a transmission line easement, including 'the installation of fixed plant or equipment', and 'the placing of obstructions within 20 metres of any part of a transmission line structure or supporting guy wire'. Roads or tracks within 10 metres of the centre-line of a transmission line 132 kV are prohibited although roads that cross the transmission line as a thoroughfare may be permitted.	need to connect to the TransGrid electricity network.	comply with required setback, approval and consultation requirements of TransGrid.
Waste Management		
The proposal would generate several waste streams and utilise a variety of materials during the construction phase.	During construction, excavated material and green waste would be generated as waste. Packaging from panels and other components would require disposal. Limited operational waste would be associated with the proposal.	A Waste Management Plan would be incorporated into the CEMP, applying the principles to avoid, re-use and recycle to minimise wastes. Cleared trees would be recycled as fauna habitat where possible.
Cumulative Impacts		
The proposed Peninsula Solar Farm will contribute to overall infrastructure development in the region. A review of the State Significant Development register for the Forbes LGA and surrounding LGAs of Lachlan, Parkes, Cabonne, Bland, Weddin and Cowra (bordering) LGAs was conducted on 13 October 2020.	During construction and operation, key cumulative impacts may include additional stress on the grid, community complaints such as visual amenity impacts, stress on local business for supply and demand (in particular, staff accommodation), noise impacts, air quality, waste management, traffic etc.	Early consultation with the community regarding cumulative impacts should be conducted. Further assessment/investigation of cumulative impacts will be required, and the EIS would assess potential impact and risk.

Existing Environment	Potential Impacts	Management and Mitigation
One other major solar farm developments have been applied for - the Daroobalgie Solar Farm. A number of other State Significant Developments have been applied for within the surrounding LGAs, such as the Parkes Hospital Redevelopment, however only the Daroobalgie Solar Farm occurs in the Forbes LGA. It has also been identified that the proposed haulage route considered in this proposal is potentially different to the proposed Daroobalgie Solar Farm.		

8 CONCLUSION

The Preliminary Environmental Assessment has outlined the proposed Peninsula Solar Farm and established the environmental and planning context of the proposal. The proposal would be assessed under Part 4 of the EP&A Act and classed as State Significant Development under *State Environmental Planning Policy (State and Regional Development) 2011*.

The report has been prepared to assist the development of the SEARs for the proposal, which will guide the preparation of the EIS. The report identifies the following key environmental issues associated with the proposal, based on the preliminary investigations:

- Biodiversity
- Aboriginal Heritage
- Visual amenity
- Noise
- Land use and resources
- Watercourses and hydrology

These uses will be assessed in detail in the EIS. It is likely that other issues such as soil values, traffic impacts and natural hazards can be readily addressed by appropriate standard mitigation and management measures. The relevance and importance of issues would be reviewed throughout the EIS process.

9 References

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Appendix A Consultation Records

FORBES SHIRE COUNCIL
ABN 86 023 614 567
Administration Centre:
2 Court St Forbes NSW 2871
All correspondence to:
General Manager
PO Box 333
Forbes NSW 2871
General Enquiries:
T 02 68 502 300
F 02 68 502 399
After Hours Call Centre:
1300 978 633
Email & Web:
forbes@forbes.nsw.gov.au
www.forbes.nsw.gov.au

(Doc Id: 724610)

12 January 2021

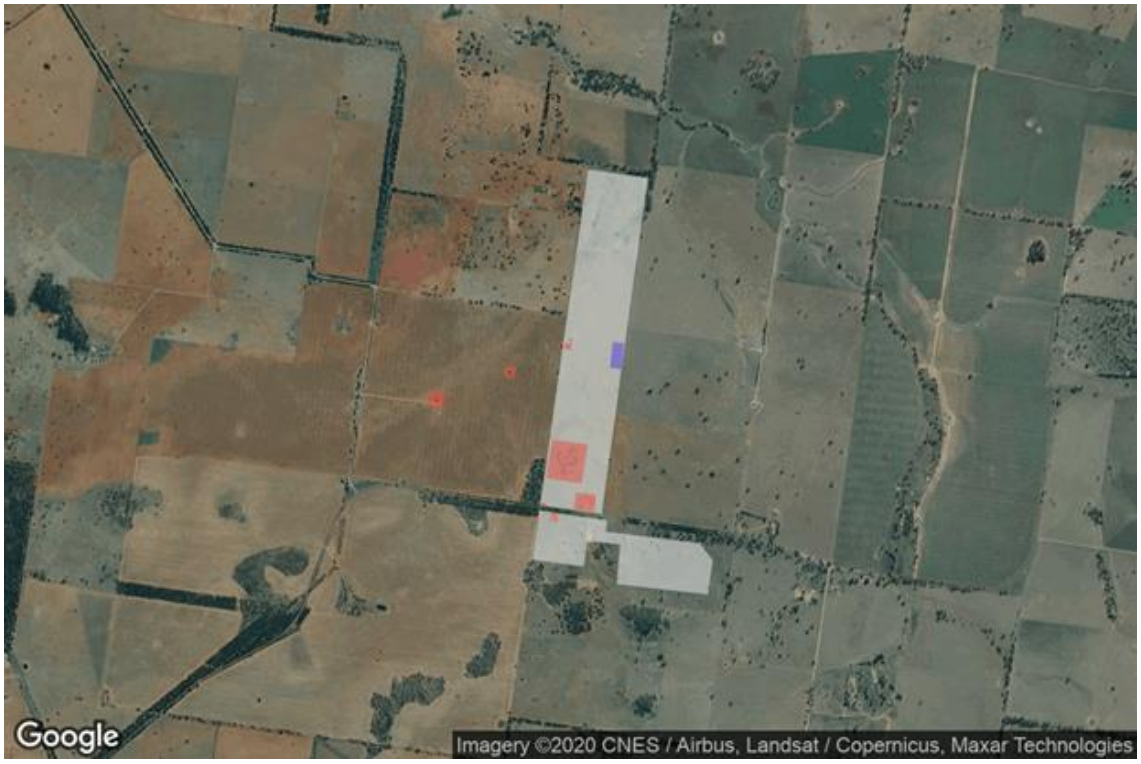
Patrick Dale
Level 3, 201 Charlotte Street
Brisbane QLD 4000

Subject: ***Pre-Lodgement Advice for Peninsula Solar Farm Subdivision – Lot 441 & 442, DP 1124885, Paytens Bridge***

Dear Patrick

Council refers to your email on 12 January 2020 to Eliza Noakes, Councils Town Planner, requesting pre-lodgement advice on a proposed subdivision to accommodate the proposed Peninsula Solar Farm at Lot 441 and 442 DP 1124885, Paytens Bridge NSW 2871.

Council understands that two subdivisions are proposed. The first subdividing Lot 442 into a northern and southern portion, and the second creating an additional lot for the substation on the eastern boundary of Lot 441. These are depicted in the plan below which were supplied to Council for pre-lodgement advice. There are no dwellings on any lot subject to the proposed subdivisions.



Council has reviewed the proposal and can confirm that the subdivision is permissible, subject to Development Consent, in accordance with Clause 4.2 of the *Forbes Local Environmental Plan 2013.* At this stage Council does not identify any concerns with the subdivision. This advice may change subject to a comprehensive assessment upon receipt of a Development Application.

I trust this information is of assistance. Should you have any further enquiries please contact Eliza Noakes, Town Planner, on (02) 6850 2300 (Option 1).

Yours faithfully,

Mathew Teale
ACTING DIRECTOR
PLANNING & GROWTH

Email Correspondence with Tastex Pty Ltd re: rock quarry to west of project site

Re: FW: Peninsula Solar Farm - Introductions

JC Jim Carpenter <kjtastex01@gmail.com>
To Patrick Dale
You forwarded this message on 4/12/2020 8:26 AM.

Reply | Reply All | Forward | ...
Thu 3/12/2020 5:20 PM

Hey patrick
Yes that's a correct summary of our conversation last week
Cheers mate
Jim
On Thu, 3 Dec 2020 at 12:42 pm, Patrick Dale <Patrick.dale@edifyenergy.com> wrote:

> Good afternoon Jim,
>
> I would appreciate if you could reply and let me know if the below mail is consistent with your understanding of our phone call last week.
>
> All the best,
>
> **Patrick Dale**
> D +61 2 8790 4044
> M +61 487 177 136
>
> Edify
>
> Edify Energy
> Level 3, 201 Charlotte Street
> Brisbane QLD 4000
>
> www.edifyenergy.com
>
>

From: Patrick Dale <Patrick.dale@edifyenergy.com>
Sent: Thursday, 26 November 2020 2:31 PM
To: kjtastex01@gmail.com
Subject: FW: Peninsula Solar Farm - Introductions

Further to below, the attached map should help illustrate our respective interests and Lot 441 and 442 discussed below.

Cheers

Patrick Dale
D +61 2 8790 4044
M +61 487 177 136

Edify

Edify Energy
Level 3, 201 Charlotte Street
Brisbane QLD 4000

www.edifyenergy.com

From: Patrick Dale <Patrick.dale@edifyenergy.com>
Sent: Thursday, 26 November 2020 2:29 PM
To: kitastex01@gmail.com
Subject: Peninsula Solar Farm - Introductions

Good afternoon Jim,

It was good to talk with you on the phone earlier regarding Edify's plans to develop the Peninsula Solar Farm (circa 80 MW), and the business Tastex is conducting in the region.

It is still early stages in our planning phase, but I appreciated the opportunity to discuss our project and also the exploration licenses that Tastex manages on lands adjacent to the western boundary of the project (*ELA5983 and MLA571*). Our project has secured Lot 441 and 442 in DP 1124885, which will house the solar infrastructure.

I'm pleased to hear that you believe the activities under your licences, and our solar farm plans will not pose a disruption to our respective interests.

I have also added you and Tastex to our Local Contractors Register and will ensure we provide updates on the project's progress and consider Tastex during the construction phase for road, civil and other activities that may be of interest. Whilst Edify does not undertake the EPC work ourselves, we do appoint the EPC Contractor and in turn, prioritise and encourage the use of local contractors. In time, we will happily provide introductions to the EPC Contractor once appointed.

Finally, just a reminder that my colleague and I will be in Paytens Bridge from Monday-Wednesday next week, to meet with Council and other members of the community to discuss the project in greater detail. If you would like to catch up, I'd be happy to make time.

Please also feel free to contact me at any time.

Patrick Dale
D +61 2 8790 4044
M +61 487 177 136

Edify™

Edify Energy
Level 3, 201 Charlotte Street
Brisbane QLD 4000

www.edifyenergy.com

Email Correspondence with State and Federal Members relevant to the project location

Edify Energy - Peninsular Solar Power Station

Reply | Reply All | Forward | ...

JC John Cole
To orange@parliament.nsw.gov.au; brett.cooke@parliament.nsw.gov.au
Cc Aaron Hawkins; Patrick Dale; Jane Gibson

Mon 9/11/2020 12:20 PM

Phil and Brett,

Thank you for taking the time to meet with Aaron and me last week to discuss our business and the proposed Peninsular Solar Power Station (incorporating solar, batteries and advanced power electronics technologies) on Paytens Bridge Rd, south of Eugowra and west of Moxy Farms.

We will be making a State Significant Development Approval application and we will keep you in the loop as the project progresses.

The project will:

- have a capital cost in the order of $150m. We will be looking for a significant amount of that to be spent locally;
- generate enough electricity to power approximately 40,000 NSW homes;
- place downward pressure on the wholesale price of electricity in NSW, which should pass though to lower electricity prices for consumers; and
- create c 300 direct jobs during construction, with a multiplier positive impact on indirect jobs in the region.

Please do let us know if you have any queries at any time.

All the best,

John

John Cole
D +61 2 8790 4024
M +61 416 944 650

Edify

Edify Energy
Level 1, 34-35 South Steyne
Manly NSW 2095
www.edifyenergy.com

FW: Meeting Request from Edify Energy with Hon Michael McCormack MP

Reply | Reply All | Forward | ...

JG Jane Gibson <Jane.Gibson@edifyenergy.com>
To Patrick Dale

Tue 12/01/2021 1:10 PM

Hi Patrick,

The Hon Michel McCormack was not available – but we received the follow up email below.

Kind regards,

Jane Gibson
D +61 2 8790 4041
M +61 417 106 840

Edify

Edify Energy
Level 1, 34-35 South Steyne
Manly NSW 2095
www.edifyenergy.com

From: Buckland, Eliza (M. McCormack, MP) <Eliza.Buckland@aph.gov.au>
Sent: Monday, 2 November 2020 4:03 PM
To: Jane Gibson <Jane.Gibson@edifyenergy.com>
Cc: Buckland, Eliza (M. McCormack, MP) <Eliza.Buckland@aph.gov.au>
Subject: RE: Meeting Request from Edify Energy with Hon Michael McCormack MP

Good Afternoon Jane

Thank you for your invitation for the Hon Michael McCormack MP, Deputy Prime Minister and Federal Member for Riverina to discuss your upcoming project with Edify Energy CEO, Mr John Cole on 3 November 20202.

Regrettably due to longstanding commitments Mr McCormack is unable to meet with Mr Cole at this time. Should Mr Cole be visiting the area in the future, please let me know and I will assist in scheduling a meeting. Mr McCormack would also be more than happy to engage with Forbes Shire Council regarding the proposal.

If you can kindly keep Mr McCormack and myself abreast of any progress and developments concerning this project, it would be most appreciated.

I apologise for not being able to accommodate your initial request and thank you for your understanding.

Kind Regards

Eliza

Eliza Buckland
THE NATIONALS for Regional Australia
ELECTORATE OFFICER
Office of the Hon. Michael McCormack MP
Deputy Prime Minister
Minister for Infrastructure, Transport and Regional Development
Leader of The Nationals
Federal Member for Riverina
eliza.buckland@aph.gov.au
www.michaelmccormack.com.au
207a Clarinda Street
Parkes NSW 2870
ph 02 6862 4560
@MichaelMcCormackMP
@M_McCormackMP
@m_mccormackMP

From: Jane Gibson <Jane.Gibson@edifyenergy.com>
Sent: Wednesday, 28 October 2020 2:58 PM
To: McCormack, Michael (MP) <Michael.McCormack.MP@aph.gov.au>
Subject: Meeting Request from Edify Energy with Hon Michael McCormack MP

Hi Eliza,

As discussed, I work for Edify Energy who is an Australian owned developer of utility scale solar and battery projects. Edify has developed and brought into operation six utility-scale solar projects (773 MW) across New South Wales, Victoria and Queensland. This is in addition to the 25 MW / 50 MWh Gannawarra Energy Storage System in Victoria, which forms part of the Gannawarra Solar Hybrid Facility and has been operating for over a year.

We have recently secured land within the Forbes Shire, located in the township of Paytens Bridge. Over the coming period, we will be commencing our planning assessments to develop a new solar and battery project and continue our investment in New South Wales.

The project will have a capital investment of greater than $30 million and therefore, we believe will be considered a State Significant Development. We are finalising a Scoping Report in the coming weeks that will be lodged to NSW DPIE. This will then inform the preparation of our detailed Environmental Impact Statement in H1 2021.

Notwithstanding the involvement of the State Government, we are committed to early and detailed engagement with Forbes Shire Council and the broader community in Paytens Bridge and beyond. We recognise that various solar farms already exist and are proposed within the Forbes Shire and wish to open the conversation to gather your feedback and experience of such projects to date, so that we can improve upon and deliver equitable outcomes for your constituents.

As discussed, John Cole, CEO of Edify Energy, will be in Orange on Tuesday, 3rd November and would like to discuss the project plans, goals and hear from the Hon Michael McCormack's experiences to date. I understand that the Hon Michael McCormack may not have any available time while John is visiting Parkes this time, but hopefully we can set up a meeting in the future to discuss this project. While in the region John will be meeting with the Forbes Shire Council and potentially with Mr Philip Donato, MP.

We look forward to trying to confirm a meeting with the Hon Michael McCormack.

Kind regards,

Jane Gibson
D +61 2 8790 4041
M +61 417 106 840

Edify™

Edify Energy
Level 1, 34-35 South Steyne
Manly NSW 2095
www.edifyenergy.com

Appendix B AHIMS Searches

AHIMS Web Services (AWS)
Search Result

Purchase Order/Reference : Peninsula

Client Service ID : 560127

Claire Driessen

Townsville
Townsville 4810

Attention: Claire Driessen

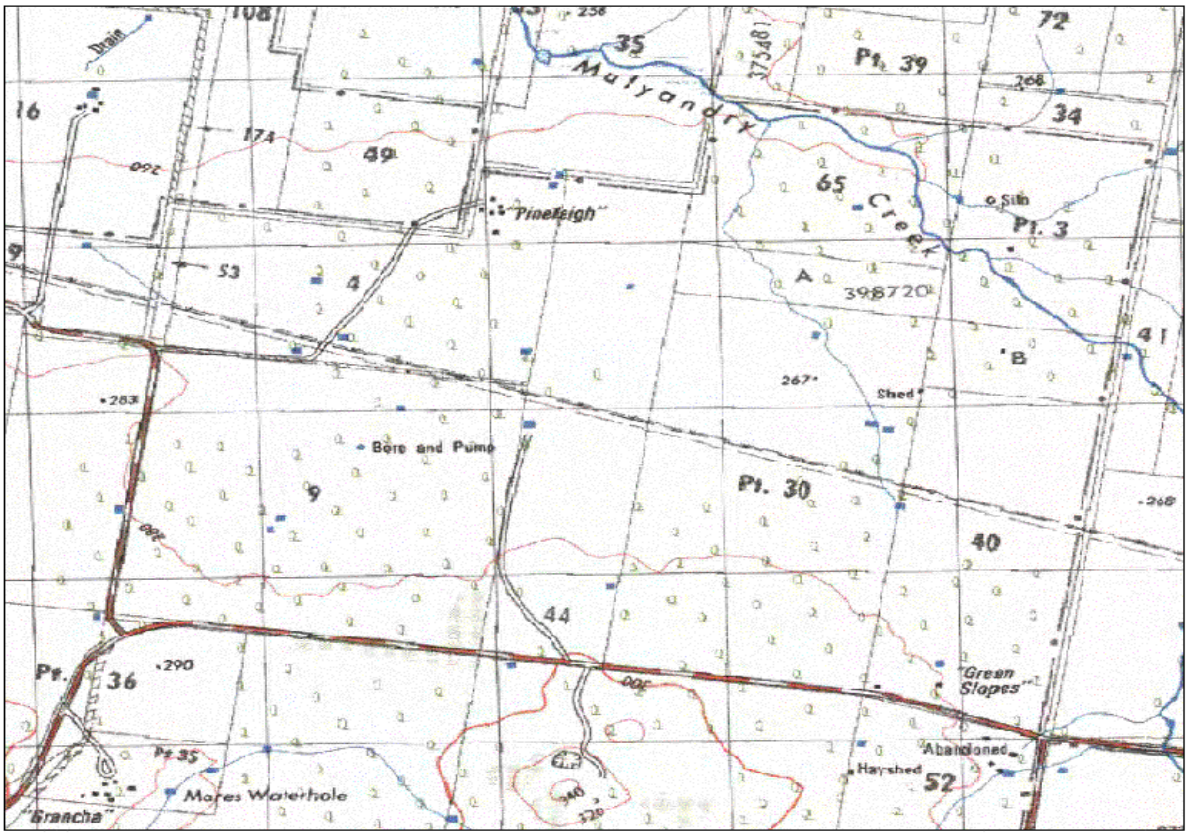
Email: claire.driessen@edifyenergy.com

Date: 08 January 2021

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lot : 441, DP:DP1124885 with a Buffer of 1000 meters, conducted by Claire Driessen on 08 January 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 the Office of the Environment and Heritage AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

1	**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 (http://www.nsw.gov.au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Office of Environment and Heritage's Aboriginal Heritage Information Unit 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 Office of Environment and Heritage 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.

3 Marist Place, Parramatta NSW 2150
Locked Bag 5020 Parramatta NSW 2220
Tel: (02) 9585 6380 Fax: (02) 9873 8599

ABN 30 841 387 271
Email: ahims@environment.nsw.gov.au
Web: www.environment.nsw.gov.au

AHIMS Web Services (AWS)
Search Result

Purchase Order/Reference : Peninsula

Client Service ID : 560126

Claire Driessen

Townsville
Townsville 4810

Attention: Claire Driessen

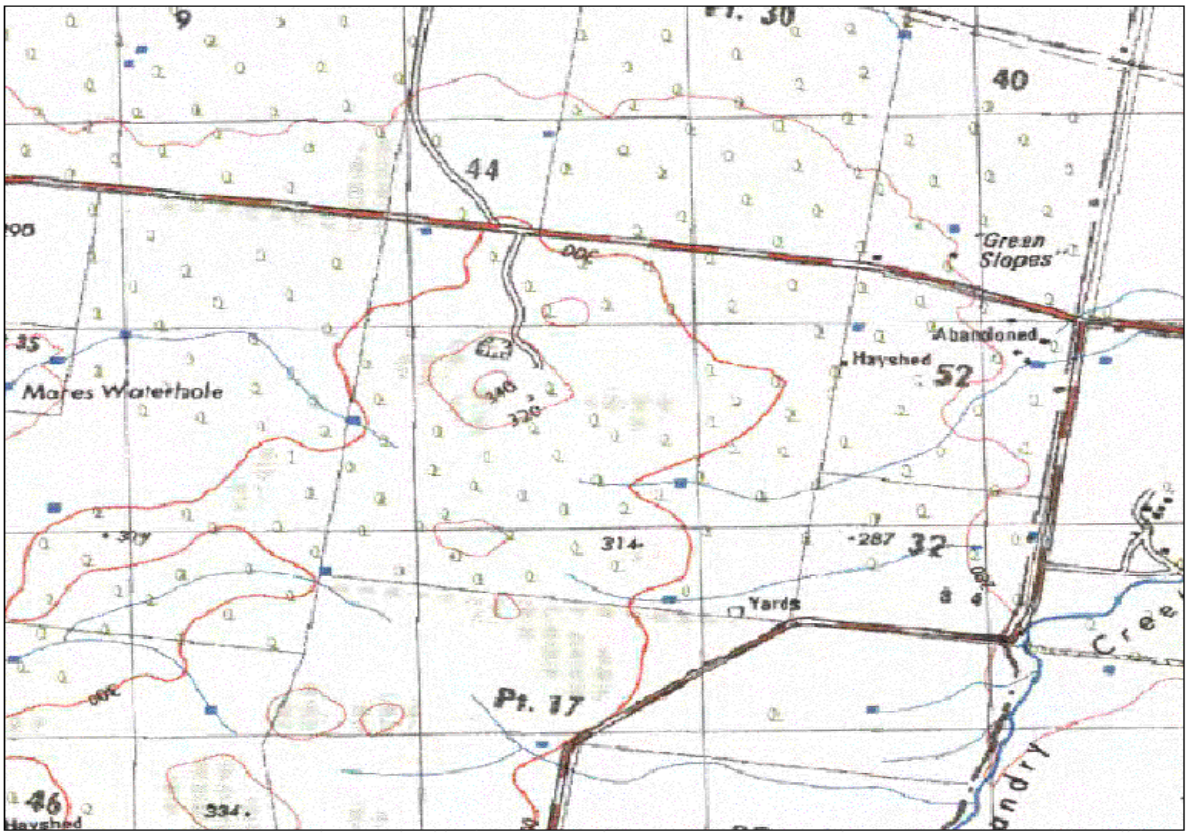
Email: claire.driessen@edifyenergy.com

Date: 08 January 2021

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lot : 442, DP:DP1124885 with a Buffer of 1000 meters, conducted by Claire Driessen on 08 January 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.



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- AHIMS records information about Aboriginal sites that have been provided to Office of Environment and Heritage and Aboriginal places that have been declared by the Minister;
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- 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.

3 Marist Place, Parramatta NSW 2150
Locked Bag 5020 Parramatta NSW 2220
Tel: (02) 9585 6380 Fax: (02) 9873 8599

ABN 30 841 387 271
Email: ahims@environment.nsw.gov.au
Web: www.environment.nsw.gov.au

AHIMS Web Services (AWS)
Search Result

Purchase Order/Reference : Peninsula

Client Service ID : 568980

Claire Driessen

Townsville
Townsville Queensland 4810
Attention: Claire Driessen

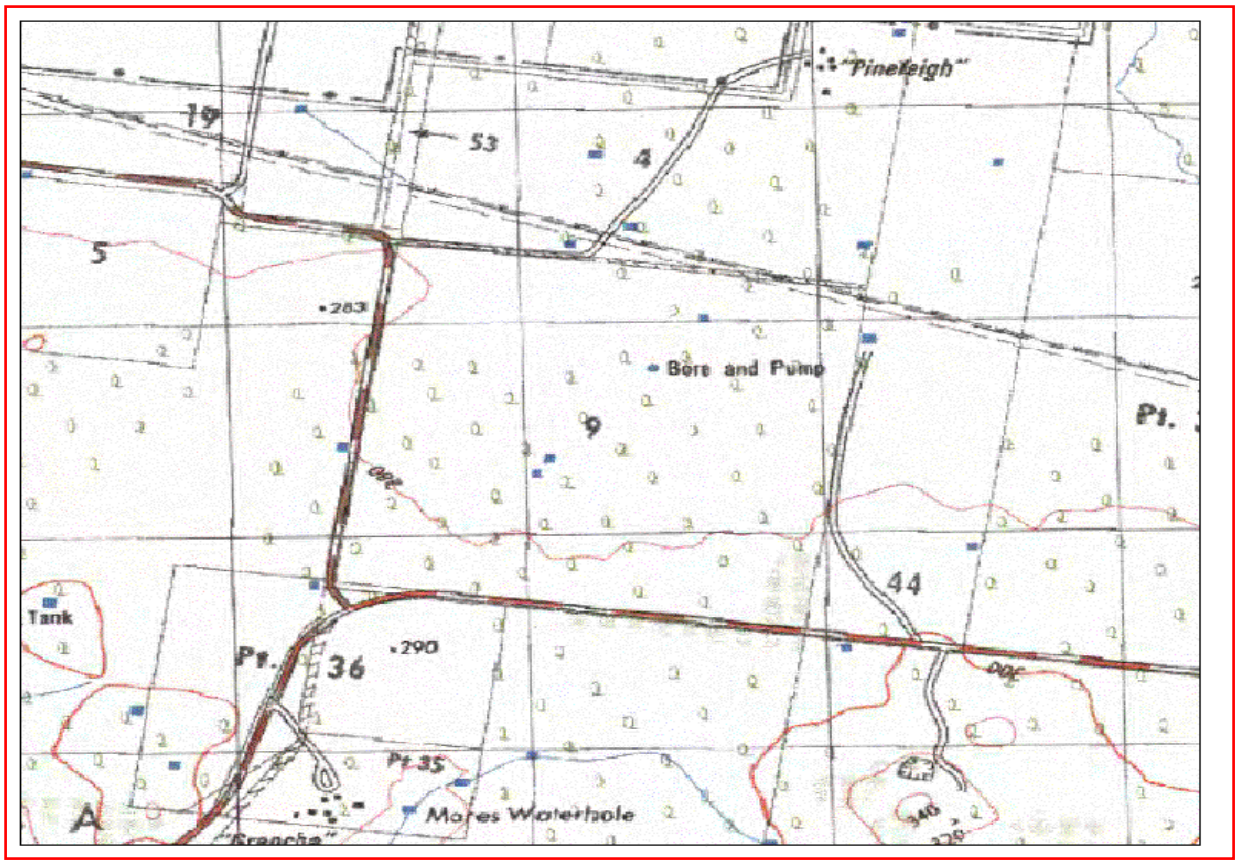
Email: claire.driessen@edifyenergy.com

Date: 17 February 2021

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lot : 9, DP:DP752938 with a Buffer of 1000 meters, conducted by Claire Driessen on 17 February 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 the Office of the Environment and Heritage AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

1	**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?

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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 Office of Environment and Heritage 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.
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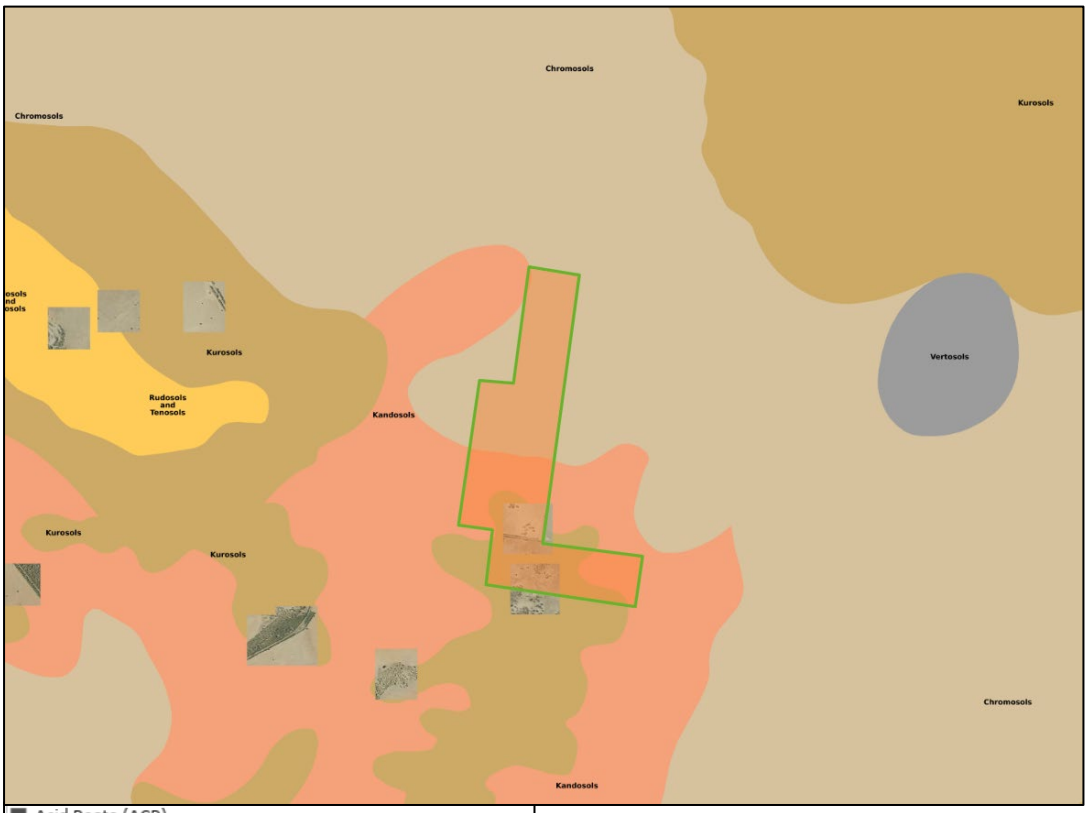
ABN 30 841 387 271
Email: ahims@environment.nsw.gov.au
Web: www.environment.nsw.gov.au

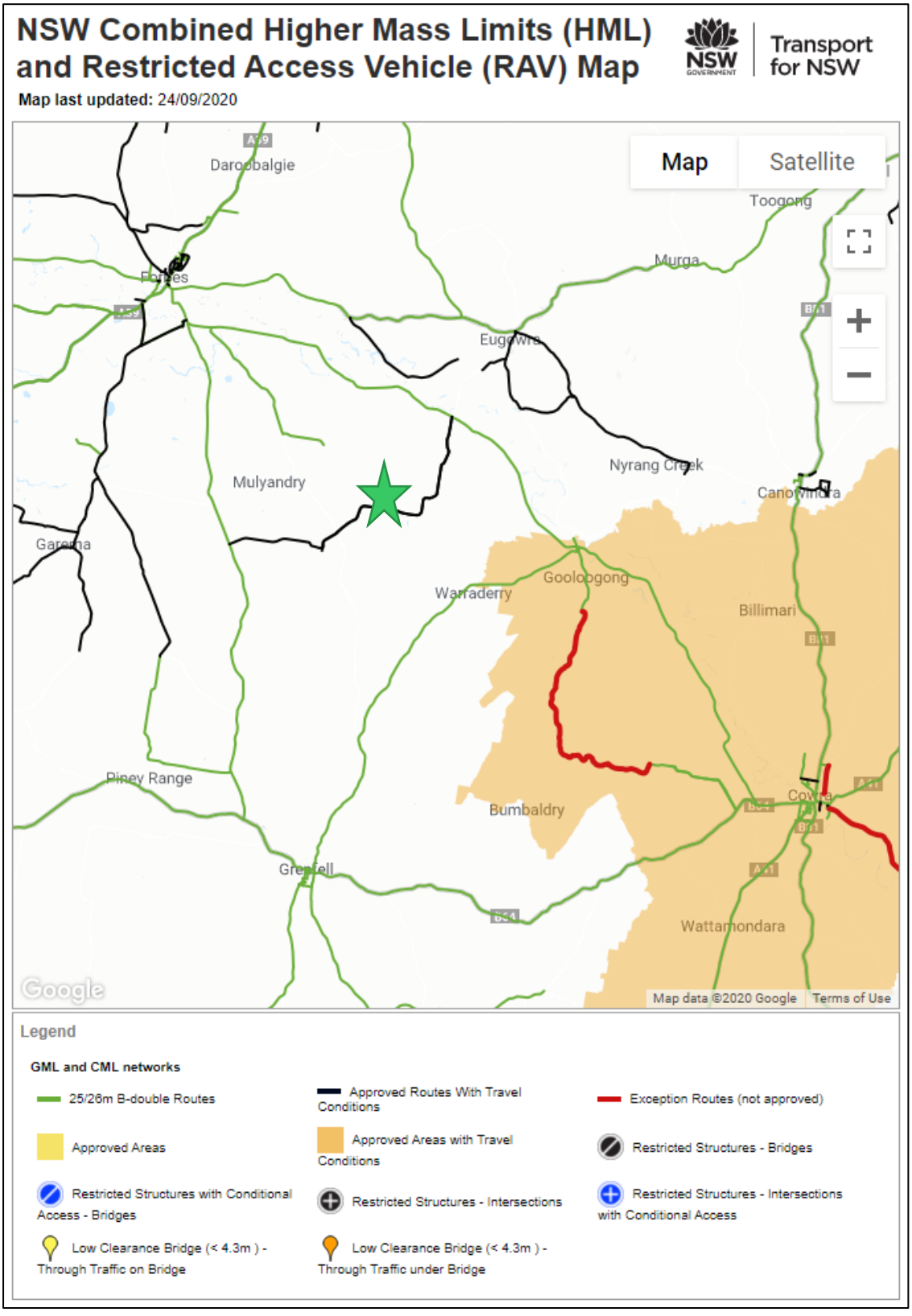
Appendix C Other Searches

Great Soils Groups and Outcrop Areas, Regional NSW (2020).



- Acid Peats (ACP)
- Alluvial Soils - Light Sandy Textured (Sands to Sandy Loams)
- Alluvial Soils - Medium Textured (Loams, Clay Loams)
- Alpine Humus soils (AH)
- Black Earths (BE)
- Brown Earths (BRE)
- Brown Podzolic Soils (BP)
- Calcareous Red Earths (KRE)
- Chernozems (CH)
- Chocolate Soils (C)
- Desert Loams (DL)
- Desert Loams (DL)
- Earthy Sands (ES)
- Euchrozems (E)
- Gleyed Podzolic Soils (GBP)
- Grey-Brown and Red Calcareous Soils (GBK & RK)
- Grey, Brown and Red Clays (GC, BC & RC)
- Grey, Brown and Red Clays - good surface condition
- Humic Gleys (HG)
- Humus Podzols (HP)
- Kraznozems (K)
- Lateritic Podzolic Soils (LP)
- Lithosols (L)
- Neutral to Alkaline Peats (NP & ALP)
- Non Calcic Brown Soils (NKB)
- Peaty Podzols (PP)
- Podzols (P)
- Prairie Soils (PS)
- Red-brown Earths (RBE)
- Red Earths - less fertile (granites and metasediment) (REl)

NSW Transport map – for potential access route/s to site



Historic Heritage database search result

Australian Government
Department of Agriculture, Water and the Environment

Heritage
Australian Heritage Database

You are here: Environment home » Heritage » Australian Heritage Database

Search Results

27 results found.

new search edit search

ANZ Bank 74 Lachlan St	Forbes, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Albion Hotel 135 Lachlan St	Forbes, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Anglesey House, Stables and Front Fence 44 Templar St	Forbes, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
CBC Bank (former) 71 Lachlan St	Forbes, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Cotton Trig Geological Site Burrawang Rd	Forbes, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Eugowra Nature Reserve	Eugowra, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Forbes Courthouse Victoria La	Forbes, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Forbes General Cemetery Churchill St	Forbes, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Forbes Post Office 118 Lachlan St	Forbes, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Forbes Post Office 118 Lachlan St	Forbes, NSW, Australia	(Listed Place) Commonwealth Heritage List
Forbes Post Office and Town Hall Group Court St	Forbes, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Forbes Railway Station Union St	Forbes, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Forbes Town Hall Court St	Forbes, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Hillview Graves Ironbarks Rd	Hillview via Garema, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Hodges Family Cemetery on The Elms North Condobolin Rd	Bedgerebong, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Indigenous Place	Gooloogong, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Indigenous Place	Yarrabandai via Ootha, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Lake Cowal Burcher Marsden Rd	Burcher, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Lands Office Camp St	Forbes, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Lone Grave on Wongajong Wongajong Rd	Wongajong via Forbes, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Orana Ornithological Area Parkes Eugowra Rd	Cookamidgera, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Post Office Hotel 117 Lachlan St	Forbes, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Private Cemetery on Springgrove North Condobolin Rd	Bedgerebong, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
St Andrews Presbyterian Church Harold St	Forbes, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
St Johns Anglican Church Court St	Forbes, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Vandenberg Hotel Court St	Forbes, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Victoria Park Including Bandstand and Fountain Court St	Forbes, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)

Report Produced: Tue Oct 13 10:01:06 2020

Search for NSW heritage

Return to search page where you can refine/broaden your search.

Statutory listed items

Information and items listed in the State Heritage Inventory come from a number of sources. This means that there may be several entries for the same heritage item in the database. For clarity, the search results have been divided into three sections.

- **Section 1** - contains Aboriginal Places declared by the **Minister for the Environment** under the National Parks and Wildlife Act. This information is provided by Heritage NSW.
- **Section 2** - contains heritage items listed by the **Heritage Council of NSW** under the Heritage Act. This includes listing on the State Heritage Register, an Interim Heritage Order or protected under section 136 of the Heritage Act. This information is provided by Heritage NSW.
- **Section 3** - contains items listed by **local councils** on Local Environmental Plans under the Environmental Planning and Assessment Act and **State government agencies** under s.170 of the Heritage Act. This information is provided by local councils and State government agencies.

Section 1. Aboriginal Places listed under the National Parks and Wildlife Act.

Your search did not return any matching results.

Section 2. Items listed under the Heritage Act.

Your search returned 3 records.

Item name ▲	Address	Suburb	LGA	SHR
Forbes Post Office	118 Lachlan Street	Forbes	Forbes	01414
Forbes Railway Station group	Parkes-Stockinbingal railway	Forbes	Forbes	01145
The Ben Hall Sites (Collectively)	Various	Forbes	Forbes	01827

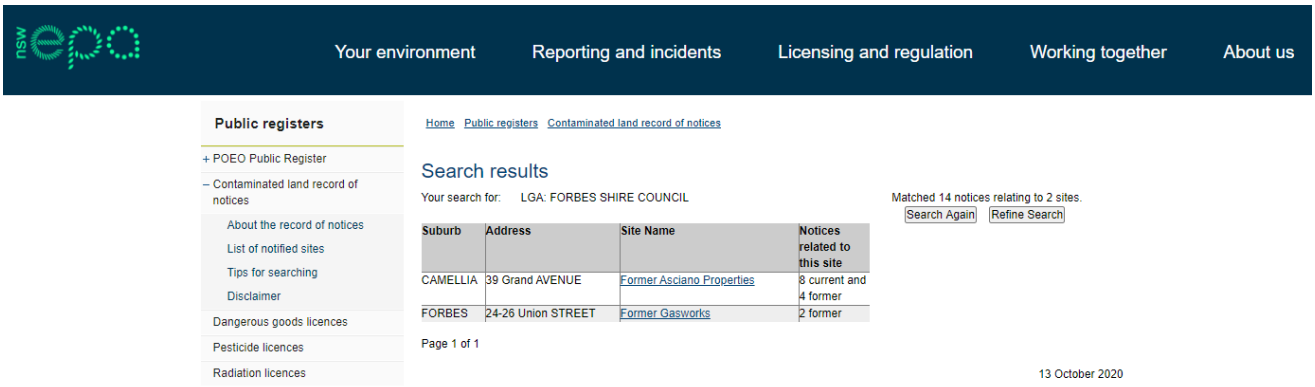
Section 3. Items listed by Local Government and State Agencies.

Your search did not return any matching results.

There was a total of 3 records matching your search criteria.

Key:
LGA = Local Government Area
GAZ= NSW Government Gazette (statutory listings prior to 1997), HGA = Heritage Grant Application, HS = Heritage Study, LGOV = Local Government, SGOV = State Government Agency.
Note: While Heritage NSW seeks to keep the Inventory up to date, it is reliant on State agencies and local councils to provide their data. Always check with the relevant State agency or local council for the most up-to-date information.

Contaminated Land Register search result



nsw epa

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Public registers

+ POEO Public Register
– Contaminated land record of notices
  - About the record of notices
  - List of notified sites
  - Tips for searching
  - Disclaimer
- Dangerous goods licences
- Pesticide licences
- Radiation licences

Home Public registers Contaminated land record of notices

Search results

Your search for: LGA: FORBES SHIRE COUNCIL

Matched 14 notices relating to 2 sites.
Search Again Refine Search

Suburb	Address	Site Name	Notices related to this site
CAMELLIA	39 Grand AVENUE	Former Asciano Properties	8 current and 4 former
FORBES	24-26 Union STREET	Former Gasworks	2 former

Page 1 of 1

13 October 2020

NSW Rural Fire Service – Bushfire prone land search result

NSW RURAL FIRE SERVICE

EMERGENCY INFORMATION

Search the NSW RFS website GO

FIRE INFORMATION | PLAN AND PREPARE | VOLUNTEER | NEWS AND MEDIA | RESOURCES | ABOUT US

Plan and prepare

- Bush fire survival plan
- Know your risk
- Prepare your home
- Prepare yourself and family
- Fire Danger Ratings
- Alert Levels
- Neighbourhood Safer Places
- **Building in a bush fire area**
  - What you need to know
  - Building after bush fire
  - Planning for Bush Fire Protection
    - Bush fire prone land
  - Additional Information
- Travelling in a bush fire area
- AIDER
- Home fire safety
- 10/50 vegetation clearing
- Farm fire safety
- Fire Trails

Home › Plan and prepare › Building in a bush fire area › Planning for Bush Fire Protection › Bush fire prone land › Check if you're in bush fire prone land

Check if you're in bush fire prone land

You can check here if your land is in a bush fire prone area.

- Enter your address including house number, street and suburb or town. Select your address from the drop down options provided.
- Check the map has correctly located your property. If not drag and drop the red marker on to your property.
- Click the 'Get Results' button to see if you're in a designated bush fire prone area.
- You should consider seeking expert advice before commencing any development.

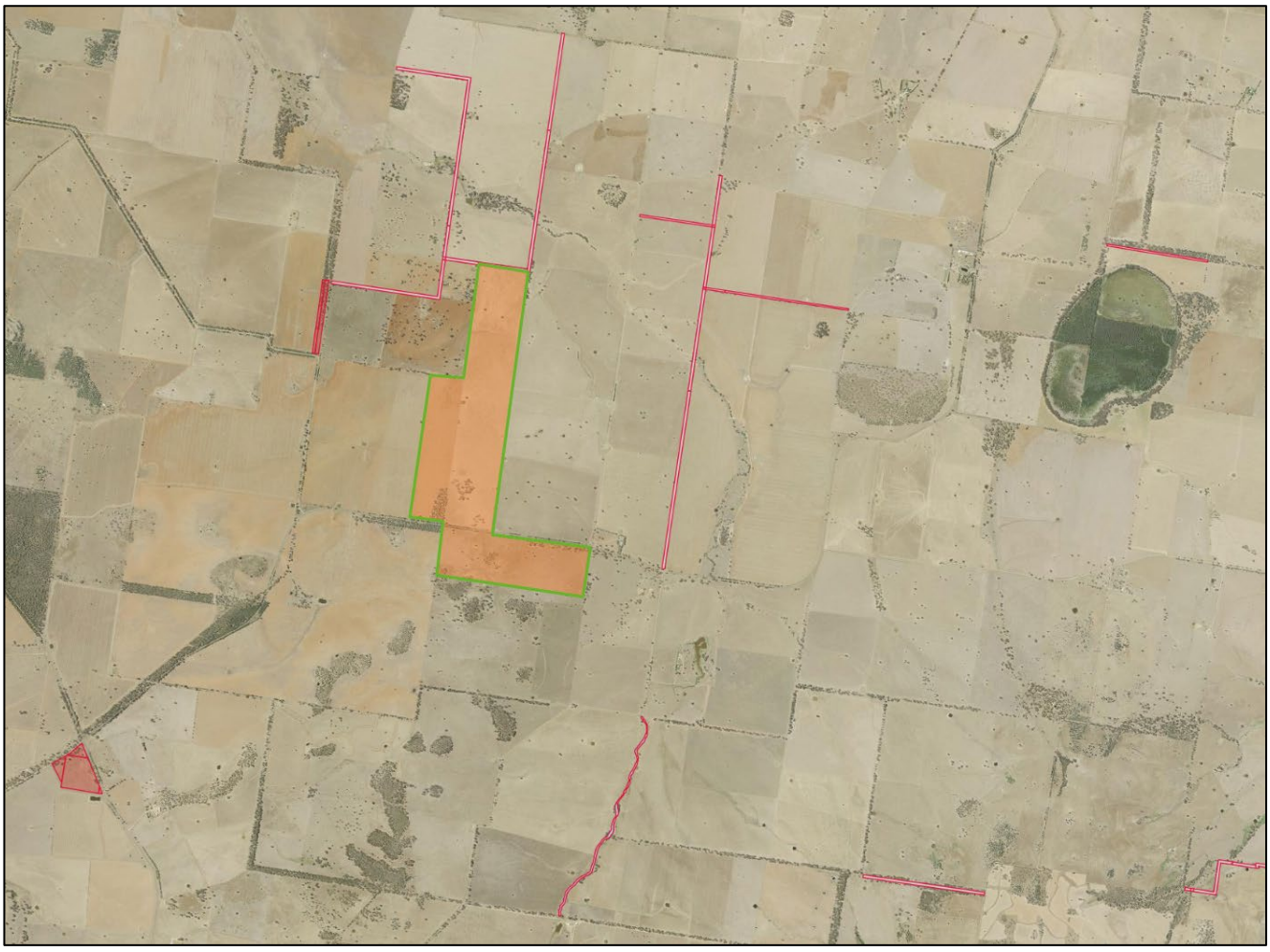
Your Property

Your search result

You have conducted a search of the online bush fire prone land tool for the land in the map above. This search result is valid for the date the search was conducted. If you have any questions about the Bush Fire Prone Land Tool please contact bushfireprone.mapping@rfs.nsw.gov.au

The parcel of land selected is not identified as bush fire prone however you could still be affected by a bush fire.

Crown Road abutting north boundary of subject land



Appendix D Preliminary Ecology Assessment, NGH
Land Category Assessment, NGH

PRELIMINARY ECOLOGY ASSESSMENT

Peninsula Solar Farm

February 2021

Project Number: 20-805

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DOCUMENT VERIFICATION

Project Title:	Peninsula Solar Farm
Project Number:	20-805
Project File Name:	20-805 Peninsula Preliminary Ecology Assessment Final V.1.1

Revision	Date	Prepared by	Reviewed by	Approved by
Draft V.1	18/12/2020	Kirsten Vine	Michelle Patrick (BAAS19078)	
Final V.1.2	22/01/2021	Kirsten Vine	Nicola Smith Lisa Hamilton (BAAS190039)	Erwin Budde
Final V1.2	19/02/2021	Kirsten Vine	Nicola Smith Lisa Hamilton (BAAS190039)	Erwin Budde

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ACRONYMS AND ABBREVIATIONS

BAM	Biodiversity Assessment Method
BC Act	*Biodiversity Conservation Act 2016* (NSW)
BCD	Biodiversity Conservation Division, Refer to DPIE
BESS	Battery energy storage system
BOM	Australian Bureau of Meteorology
BUS	Bird Utilisation Survey
Cwth	Commonwealth
DPIE	Department of Planning Industry and Environment
EEC	Endangered ecological community – as defined under relevant law applying to the proposal
EPBC Act	Environment Protection and Biodiversity Conservation 1999 (NSW)
ha	hectares
KFH	Key Fish Habitat
km	kilometres
LEP	Local Environment Plan
LGA	Local Government Area
m	Metres
MNES	Matters of National environmental significance under the EPBC Act (*c.f.*)
NSW	New South Wales
OEH	(NSW) Office of Environment and Heritage, Refer to DPIE
PCT	Plant Community Type
PVP	Property Vegetation Plan
SAII	Serious and irreversible Impact
SEAR	Secretary Environmental Assessment Requirements
sp/spp	Species/multiple species
SSD	State Significant Development
TEC	Threatened Ecological Community

1. INTRODUCTION

It is understood that Edify Energy (Edify) propose to lodge a scoping report and request for Secretary Environmental Assessment Requirements (SEARs) for the development of the Peninsula Solar Farm. The proposal area is located at Payten's Bridge, approximately 30 kilometres south east of Forbes, NSW, and occupies approximately 288 hectares (ha) across three lots:

- Lot 441 DP 1124885 – 152.16ha
- Lot 442 DP 1124886. 91.78ha (partial)
- Lot 9 DP 752938 - 44.49ha (partial)

The proposal area is zoned RU1 (Primary Production) under the Forbes Local Environmental Plan (LEP) in the Forbes Shire Council Local Government Area (LGA). The site is currently used for cattle grazing and small areas for fodder cropping.

The entirety of Lot 9 DP 752938 is managed under a Property Vegetation Plan (PVP), under Map Units 4b and 4f. Areas of the development included in Map Unit 4b does not exclude solar farm development. Map unit 4f is located in the south-east corner of Map Unit 4b. Map Unit 4f (approximately 5.52 ha) is managed in perpetuity under a PVP for biodiversity values (see Figure 1-1 and Figure 1-2). Map Unit 4f is excluded from the development footprint and this assessment.

1.1. THE PROPOSAL

The subject land (proposal area) is around 288ha as shown in Figure 1-1. The proposed solar farm would be circa 130MWdc and occupy approximately 288 ha. A 10km buffer was added to the subject land to assess connectivity in the surrounding landscape.

Key features of the proposal would include:

- Solar panels and associated infrastructure.
- Substation and connection to the existing TransGrid 132kV transmission line located on site.
- Battery energy storage system(s) (BESS).
- Access and perimeter tracks.
- Buildings, including operations and maintenance.
- Amenities, including site office and car park.

NGH has been commissioned to complete a submission that includes:

1. Site inspection and visual assessment by an ecologist.
2. Vegetation and Groundwater Dependant Ecosystem desktop assessment, to complement site assessment findings.
3. Preliminary desktop Biodiversity Assessment Methodology (BAM) calculator results, to complement site assessment findings.
4. NSW Bionet species desktop survey (particularly confirmation of existing findings).

Key biodiversity features likely to pose constraints for the proposal may include:

- Plant Community Types listed as threatened under the NSW *Biodiversity Conservation Act 2016* (BC Act) or Commonwealth *Environment Protection and Biodiversity Act 1999* (EPBC Act).
- Threatened species listed under the BC or EPBC Act.
- Habitat for threatened species listed under the BC or EPBC Act.
- Prescribed biodiversity impacts under the Biodiversity Assessment Methodology (BAM).
- Biodiversity Values mapped under the BC Act.
- Serious or Irreversible Impacts (SAII).
- Riparian and/or terrestrial corridors and connectivity and wetland inundation areas.
- Groundwater Dependent Ecosystems.

The occurrence of these values within the study were determined with a high-level desktop assessment and preliminary site visit.

1.2. STUDY AIMS

The main objectives of the scoping report are to provide:

- Results of the site inspection, including a description of methodology undertaken
- Maps of PCTs identified on site. Shapefiles and plot data would be provided.
- Any Threatened Ecological Communities (TECs) identified on site
- Targeted species requiring survey in accordance with the BAM
- Additional survey efforts required, including number of required floristic plots

- Results of the desktop assessment, including:
    - BioNet results
    - GDE results, including maps
- Preliminary desktop BAM calculator results.
- Candidate species requiring targeted survey would be identified.

1.3. SOURCES OF INFORMATION USED IN THE ASSESSMENT

The following information sources were used in the development of this BDAR:

- Proposal layers, construction methodology and concept designs provided by the Proponent.
- State Vegetation Type Map: Riverina Region Version v1.2 (OEH)
- Australian Government's Species Profiles and Threats (SPRAT) database http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl
- NSW Threatened Species Profiles http://www.environment.nsw.gov.au/threatenedspeciesapp/ and www.environment.nsw.gov.au/AtlasApp/UI_Modules/
- Department of Primary Industries (DPI) profiles of threatened species, population, and ecological communities
- Commonwealth Department of Agriculture, Water and the Environment Protected Matters Search Tool. Accessed online at http://environment.gov.au/epbc/protected-matters-search-tool
- Australia's IBRA Bioregions and sub-bioregions. Accessed online at http://environment.gov.au/land/nrs/science/ibra/australias-bioregions-maps
- Department of Environment and Climate Change NSW (DECC) (2002). Descriptions for NSW (Mitchell) Landscapes, Version 3
- NSW OEH's Biodiversity Assessment Method (BAM) calculator (http://www.environment.nsw.gov.au/bbccapp/ui/mynews.aspx)
- NSW OEH's BioNet threatened biodiversity database. Accessed online via login at http://www.bionet.nsw.gov.au/
- OEH BioNet Vegetation Classification Database (OEH 2017). Accessed online via login at http://www.environment.nsw.gov.au/NSWVCA20PRapp/default.aspx
- OEH VIS Mapping. Accessed online at http://www.environment.nsw.gov.au/research/VISmap.htm
- Office of Environment and Heritage (OEH) (2017). Biodiversity Assessment Method
- NSW Government SEED Mapping. https://geo.seed.nsw.gov.au/Public_Viewer/index.html?viewer=Public_Viewer&locale=en-AU
- NSW Biodiversity Values Maphttps://www.lmbc.nsw.gov.au/Maps/index.html?viewer=BVMap
- Aerial imagery of historical land use (Sourced from Google Earth and Spatial Services Delivery)
- 2017 Land Use Dataset (Australian Land Use and Management (ALUM) Classification Version 7 (Office of Environment and Heritage (OEH), 2017)
- NSW Woody vegetation extent and Foliage Projective Cover (FPC) 2011 (OEH, 2015)
- Sensitive regulated and vulnerable regulated lands on the Native Vegetation Regulatory Map portal

- Land Category Assessment – 20-805 Peninsula Solar Farm, January 2021. Prepared by NGH

Figure 1-1 Proposal Area

Figure 1-2 Property Vegetation Plan Lot 9

LAND CATEGORY ASSESSMENT

Under Section 6.8(3) of the BC Act, the Biodiversity Assessment Method (BAM) determines areas of exclusion from an assessment based on historic impacts of clearing of native vegetation on Category 1-exempt land (within the meaning of Part 5A of the *Local Land Services Act 2013* (LLS Act)). Boundaries mapping Category 1-exempt land on the Native Vegetation Regulatory Mapping are not yet publicly available. During the transitional period, accredited assessors may establish the categorisation of land for the agency head to consider, following the method utilised to develop the Native Vegetation Regulatory Map.

Category 1-exempt land is defined under the LLS Act (Part 5A Division 2 Section 60H) as;

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

Category 2- Regulated Land is defined as;

- Land **not** cleared as at 1st January 1990 or unlawfully cleared after 1st January 1990;
- Native vegetation grown with the assistance of public funds;
- Land that is (or was previously) subject to a Private Native Forestry Plan or Private Native Forestry PVP;
- Grasslands that are neither low nor high conservation grasslands;
- Travelling stock reserves;

Additionally, two subcategories of Category 2 – Regulated Land are also relevant and include;

- *Category 2 Vulnerable Regulated Land*
    - Steep or highly erodible land;
    - Protected riparian areas;
    - Land susceptible to erosion, or land that is otherwise environmentally sensitive.
- *Category 2 Sensitive Regulated Land*
    - Land subject to a private land conservation agreement;
    - A set aside under the Land Management Code;
    - Land subject to a bio-certification conservation measure;
    - Land comprising an offset under a Property Vegetation Plan or set aside under a code under the *Native Vegetation Act 2003;*
    - Coastal wetlands and littoral rainforests *(Coastal Management Act 2016);*
    - High conservation grasslands;

The Land Category Assessment was completed to determine Category 1 and Category 2 land. This included a desktop assessment and literature review of the subject land. Resources used include:

- Aerial imagery of historical land use (Sourced from Google Earth and Spatial Services Delivery)
- 2017 Land Use Dataset (Australian Land Use and Management (ALUM) Classification Version 7 (Office of Environment and Heritage (OEH), 2017)
- NSW Woody vegetation extent and Foliage Projective Cover (FPC) 2011 (OEH, 2015)
- Sensitive regulated and vulnerable regulated lands on the Native Vegetation Regulatory Map portal
- Western NSW State Vegetation Mapping (OEH, 2018).

A Land Category Assessment forms part of a Biodiversity Development Assessment Report (BDAR).

There is evidence to suggest that a large portion (approximately 291.87) of the proposal area had largely been used for grazing and cropping pre-1990. This is supported by recent imagery, 1989 and 1993 aerial imagery, field surveys, landuse datasets, woody vegetation extent datasets, and land zoning mapping data. These areas have been mapped as Category 1 – Exempt Land (NGH, 2021), except where the EPBC listed PCT 250 was found.

Areas of woody vegetation and scattered paddock trees have been mapped as Category 2 – regulated land. Some grassland areas mapped as 'grazing modified pastures' in the 2017 land use dataset with no clear evidence of historic ground disturbance have been mapped as Category 2 – regulated land as a precautionary approach (see Figure 1-3 below) (NGH, 2021).

Additionally, an area identified with a PVP has been mapped as Category 2 sensitive regulated land.

A

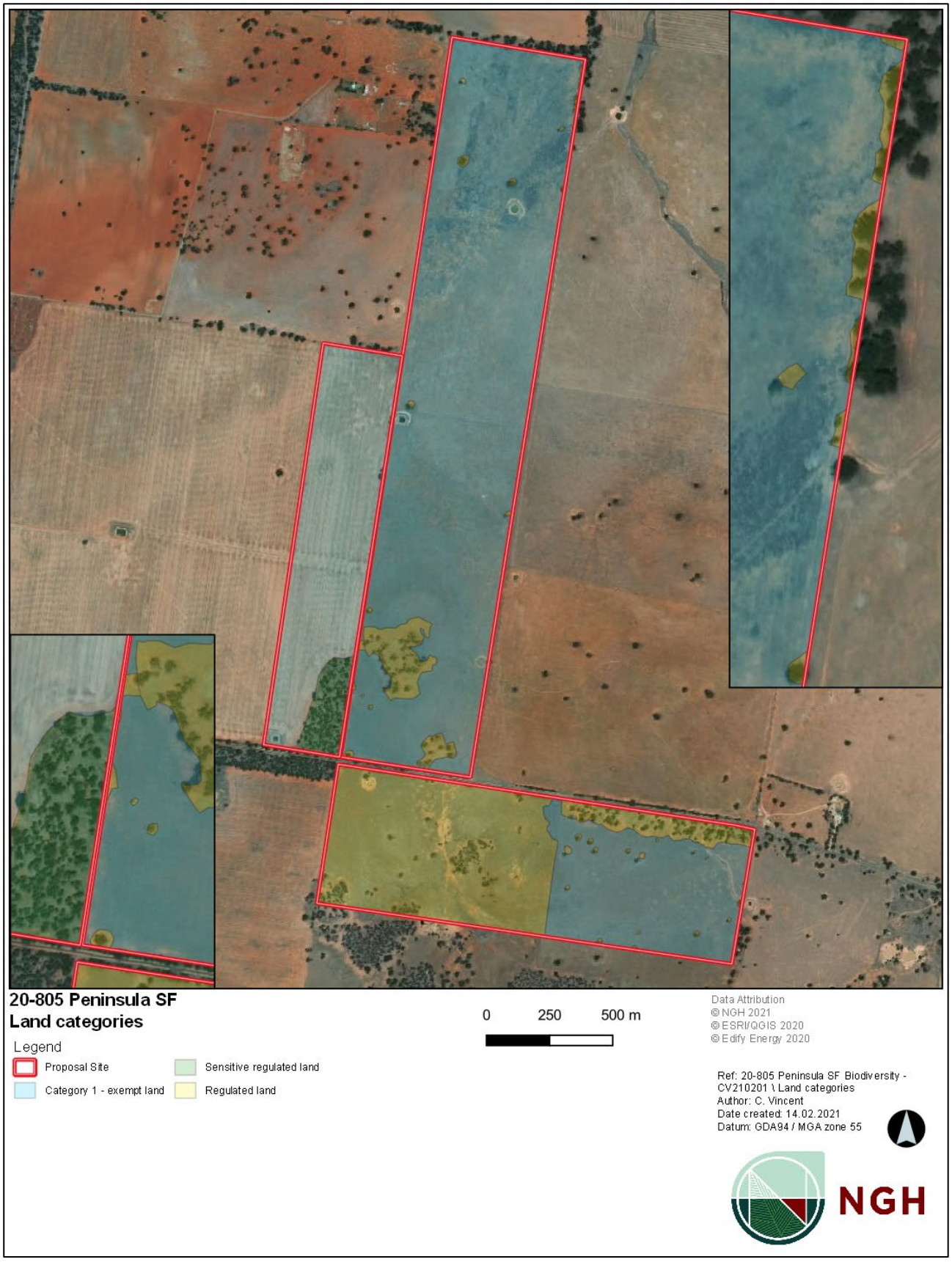

Figure 1-3 Land categorisation.

2. METHODOLOGY

2.1. DATABASE SEARCHES

The following databases searches were undertaken to inform this scoping assessment:

- NSW DPIE (OEH) BioNet Atlas Records within 10km of the subject land.
- NSW DPIE (OEH) Threatened Ecological Communities (TEC) associations data
- EPBC Protected Matters Search Tool within 10km of the subject land
- NSW Biodiversity Values Map and Threshold
- DPI Threatened Fish Indicative Populations
- BOM Groundwater Dependent Ecosystem Mapping
- DPIE State Vegetation Mapping
- DFSI LGA Mapping

2.2. FIELD ASSESSMENT

A preliminary field assessment was conducted on the 10-11th December 2020 by two NGH Ecologists.

Site evaluation utilised 44 rapid assessments to determine:

- Key vegetation types
- Plant Community Types (PCTs) determination
- Rapid assessment was also utilised to determine the likelihood of threatened ecological community occurrence
- Potential for threatened vegetation communities or habitat to support threatened species
- Presence of threatened flora and fauna
- Habitat of conservation significance.
- Defining non-native vegetation areas which were used for cropping or grazing

An assessment of habitat values included recording biodiversity features such as:

- Hollow-bearing trees
- Natural and artificial water sources
- Woodland stands,
- Large (eagle) stick nests and habitat presence, quality, and connectivity.
- Isolated paddock trees
- Fallen Timber
- Rocky Outcrops

3. BIODIVERSITY RESULTS

3.1. PLANT COMMUNITY TYPES

Under the NSW Department of Planning, Industry and Environment (DPIE) Biodiversity Conservation Division (BCD) Plant Community Type's (PCTs) are the lowest level of classification and the accepted standard for describing plant communities. Existing State Vegetation Mapping (VIS_ID_4469) and rapid assessment on site by a senior (BAM accredited) NGH ecologist was utilised to determine presence/absence of PCTs within the Subject land. The vegetation mapping required ground-truthing and was determined to require revision. Overall, three PCTs were determined to occur on site. Table 3-4 lists the PCTs and associated details (1).

The PCTs in the proposal area occur in a degraded form due to agricultural practices and historic clearing. The shrub and groundcover components are significantly altered in the overall project area. The forested areas in the proposal area consist of small, isolated patches or corridors associated with roadsides and fence lines. This vegetation pattern forms assemblages that may not include a typical assemblage for each of these PCTs.

Justification for each PCT was based on dominant canopy species as they were most likely to have not been impacted as heavily as the shrub and groundcover components.

Woodland PCTs were distinguished from the isolated paddock trees by defining anything greater than two trees within 100m^2 as a paddock tree. Paddock trees were found to occur in non-native pasture and native grassland.

3.2. THREATENED ECOLOGICAL COMMUNITIES

Three PCTs occur on the site and all are associated with Threatened Ecological Communities (TECs) (DPIE, 2020). Areas of BC Act and EPBC Act listed communities occur within the site. These communities are described in Table 3-4 and located in Figure 3-1.

Further assessment was required to determine if the patches of PCT 76 fully met the condition thresholds for the TEC (Endangered) *Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions* under both the EPBC and BC Acts. This PCT was found to meet the criteria for the EPBC Act and BC Act listing (see Table 3.1). Given this community occurs predominantly adjacent to the proposal area it does not pose a significant constraint on the project. This PCT is adjacent to Category 1 exempt land in the proposal area.

PCTs 250 and 267 are both considered to be associated with the BC (Critically Endangered) and EPBC Act (Critically Endangered) listed *White Box Yellow Box Blakely's Red Gum Woodland* (DPIE, 2020) and required further assessment to determine if the vegetation in the proposal area meet the listed criteria for this TEC. The EPBC Act stipulates that specific thresholds must be satisfied to be classified as a TEC under the EPBC Act (criteria listed in Table 3.1 below). Both PCT 267 and PCT 250 patches are over 0.1ha, in some places these patches are adjacent to, not within, the proposal area. Under the EPBC Act, PCT 250 (medium/high condition areas) and PCT 267 meet the criteria

Under the BC Act, PCTs 250 and 267 do meet the criteria for this TEC as both include the characteristic species, even where characteristic canopy species are absent, as there is a native grassy understorey and has potential for regeneration.

Table 3.1 PCT-TEC relationship justification for PCT 76

Final Determination attribute	**76** **Listed EPBC Act, E: Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions (Part) ;**	**76** **Listed BC Act, E: Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions (Part)**
Characteristic species EPBC Act	*Eucalyptus microcarpa* must be predominant **Condition satisfied**	*Eucalyptus microcarpa* in association with Bimbil Box, White Cypress-pine, Kurrajong, Buloke, White Box or Yellow Box. **Condition satisfied**
Characteristic species BC Act	Recorded native species are characteristic of the TEC **Condition satisfied**	Recorded native species are characteristic of the TEC. Sparse shrub layer. **Condition satisfied**
Geographic location	TEC mainly restricted to the eastern section of the Riverina Bioregion and the western section of the NSW South-western Slopes Bioregion – **Condition satisfied**	Within Forbes local government area - **Condition satisfied**
Minimum patch size	Must exceed 0.5 ha. **Condition satisfied**	**Final Determination contains no attribute**
Minimum canopy cover	Must exceed 10% **Condition satisfied within patch area**	**Final Determination contains no attribute**
Minimum native groundcover	Cover must exceed 10%, exotic non - grass weeds no more than 30% **Condition satisfied**	**Final Determination contains no attribute**

Final Determination attribute	**76** **Listed EPBC Act, E: Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions (Part) ;**	**76** **Listed BC Act, E: Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions (Part)**
EEC reference	http://www.environment.gov.au/system/files/resources/e6041636-388e-40cc-9bd4-8c8b2dbe6419/files/grey-box-booklet.pdf	https://www.environment.nsw.gov.au/topics/animals-and-plants/threatened-species/nsw-threatened-species-scientific-committee/determinations/final-determinations/2004-2007/inland-grey-box-woodland-endangered-ecological-community-listing
TEC?	**Yes**	**Yes**

Table 3.2 PCT-TEC relationship justification for PCT 250

Final Determination attribute	**250** **Listed BC Act, E: White Box Yellow Box Blakely's Red Gum Woodland (Partially contains) ; (OEH, 2020b)**	**250** **Listed EPBC Act, E: White Box Yellow Box Blakely's Red Gum Woodland (Partially contains) ; (DEH 2006)**
Characteristic species	*Presence of Eucalyptus albens, E.melliodora,* and/or *E.blakelyi?* **Condition satisfied as paddock trees**	Historic or current presence of *Eucalyptus albens, E.melliodora,* and/or *E.blakelyi?* **Condition satisfied as paddock trees**
Characteristic species	Is groundlayer mostly grassy? **Condition satisfied**	Is there more than 12 non-grass native understorey species and at least one important species. If not, does the patch size exceed 2ha? **Condition satisfied**
Geographic location	Is site located on tablelands or western slopes of NSW? – **Condition satisfied**	

Final Determination attribute	**250** **Listed BC Act, E: White Box Yellow Box Blakely's Red Gum Woodland (Partially contains) ; (OEH, 2020b)**	**250** **Listed EPBC Act, E: White Box Yellow Box Blakely's Red Gum Woodland (Partially contains) ; (DEH 2006)**
Site condition	Is there potential for natural regeneration of tree layer if grazing was removed? **Potentially**	Does patch have an average of 20+ mature trees/ha OR is there natural regeneration of canopy species? **Condition not satisfied**
Minimum patch size		Is patch size greater than 0.1ha? **Condition met**
EEC reference	https://www.environment.nsw.gov.au/resources/threatenedspecies/EECWhiteboxLowRes.pdf	http://www.environment.gov.au/system/files/resources/be2ff840-7e59-48b0-9eb5-4ad003d01481/files/box-gum.pdf
TEC?	**PCT 250 moderate/high Yes** **PCT 250 poor No**	**PCT 250 moderate/high Yes** **PCT 250 poor No**

Table 3.3 PCT-TEC relationship justification for PCT 267

Final Determination attribute	**267** **Listed BC Act, E: White Box Yellow Box Blakely's Red Gum Woodland (Partially contains) ; (OEH, 2020b)**	**267** **Listed EPBC Act, E: White Box Yellow Box Blakely's Red Gum Woodland (Partially contains) ; (DEH 2006)**
Characteristic species	*Presence of Eucalyptus albens, E.melliodora,* and/or *E.blakelyi?* **Condition satisfied as paddock trees**	Historic or current presence of *Eucalyptus albens, E.melliodora,* and/or *E.blakelyi?* **Condition satisfied as paddock trees**
Characteristic species	Is groundlayer mostly grassy? **Condition satisfied**	Is there more than 12 non-grass native understorey species and at least one important species. If not, does the patch size exceed 2ha? **Condition satisfied**

Final Determination attribute	**267** **Listed BC Act, E: White Box Yellow Box Blakely's Red Gum Woodland (Partially contains) ; (OEH, 2020b)**	**267** **Listed EPBC Act, E: White Box Yellow Box Blakely's Red Gum Woodland (Partially contains) ; (DEH 2006)**
Geographic location	Is site located on tablelands or western slopes of NSW? – **Condition satisfied**	
Site condition	Is there potential for natural regeneration of tree layer if grazing was removed? **Potentially**	Does patch have an average of 20+ mature trees/ha OR is there natural regeneration of canopy species? **Condition satisfied**
Minimum patch size		Is patch size greater than 0.1ha? **Condition satisfied**
EEC reference	https://www.environment.nsw.gov.au/resources/threatenedspecies/EECWhiteboxLowRes.pdf	http://www.environment.gov.au/system/files/resources/be2ff840-7e59-48b0-9eb5-4ad003d01481/files/box-gum.pdf
TEC?	**Yes**	**Yes**

Table 3-4: Plant Community Types (PCTs) as mapped on the subject land (excluding Category 1 exempt).

PCT	PCT Name	Description	Vegetation Class	Vegetation Formation	Area (ha) within proposal area only	Threatened Ecological Community Name
0	Not native	This is deemed to not be a community consisting of native flora species	NA	NA	NA	NA
45	Plains Grass grassland on alluvial mainly clay soils in the Riverina Bioregion and NSW South Western Slopes Bioregion ***Note this community was found to be PCT 250**	Tussock grassland dominated by the grass species Plains Grass (Austrostipa aristiglumis), *Walwhalleya proluta, Austrodanthonia duttoniana, Enteropogon ramosus, Sporobolus caroli* and *Chloris truncata*. Nardoo Nardoo (*Marsilea drummondii*) is common throughout along with forbs such as *Wurmbea dioica* subsp. *dioica, Rumex dumosus, Arthropodium minus, Leptorhynchos squamatus* subsp. *A, Crassula decumbens* var. *decumbens, Goodenia fascicularis, Rhodanthe corymbiflora* and several species of *Swainsona*. Weed species are common and at some sites may be dominant. Often containing a high proportion of annual exotic species in Spring. Poorly represented in reserves and threatened due to cropping and grazing.	Riverine plain Grasslands	Grasslands	NA	**Listed BC Act, E**: Artesian Springs Ecological Community in the Great Artesian Basin. Ground truthing found this area to be PCT 250 in poor condition. **(Does not meet criteria)**
76	Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions	Tall woodland to 25 m high dominated by Western Grey Box (*Eucalyptus microcarpa*) often as the only tree species, often occupying 90% of the canopy cover but other trees may include Yellow Box (*E. melliodora*), White Cypress Pine (*Callitris glaucophylla)* and minor Buloke. The shrub layer is absent or sparse and includes *Dodonaea viscosa* subsp. *cuneata,*	Floodplain Transition Woodlands	Grassy Woodlands	0.29 ha	**Listed BC Act, E**: Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions **Listed EPBC Act, E:** Inland Grey Box Woodland in the

		Acacia buxifolia, Acacia acinacea, Acacia hakeoides, Bursaria spinosa. Grazing has eliminated these shrubs in many places. A mid-dense or dense grass ground cover is present composed of *Austrodanthonia caespitosa, Austrodanthonia setacea, Austrostipa scabra subsp. falcata, Paspalidium constrictum,Themeda australis, Austrostipa aristiglumis, Aristida behriana* and *Elymus scaber* var. *scaber* along with introduced grasses, such as *Bromus spp., Vulpia spp*.and *Hordeum leporinum*. The small scrambler *Einadia nutans* subsp. *nutans* is usually present. Native forbs include *Sida corrugata, Wahlenbergia gracilis, Vittadinia gracilis, Dianella porracea, Oxalis perennans and Chamaesyce drummondii.* Occurs on texture contrast red or brown earths or grey clay soils on undulating alluvial plains. Distributed from north of Forbes in the north to near Albury in the south extending into north-central Victoria. Grades into the more shrubby Western Grey Box-White Cypress Pine - Buloke community (ID80) on loamy-sand soils and grades into White Box (*E.albens*) on podzolic soils to the east on the western slopes. Grades into a riverine Western Grey Box community ID237 along the floodplains of the Murrumbidgee and Murray Rivers. Due to its occurrence on arable soils, this community has largely been cleared. Much of its remaining extent is threatened by grazing and weed invasion**.**				Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions.
250 (moderate	Derived tussock grassland of the central western	Mid-high to tall grasslands that have been derived from clearing of woodland vegetation in central west NSW. Scattered trees such as	Western Slopes Grasslands	Grasslands	44.72 ha (moderate/high condition)	**Listed BC Act, E:** White Box Yellow Box Blakely's Red Gum Woodland.

to high condition)	plains and lower slopes of NSW	Western Rosewood (Al*ectryon oleifolius* subsp. *canescens*), Kurrajong (*Brachychiton populneus subsp. trilobus*) and White Cypress Pine (*Callitris glaucophylla*) may occur. Shrubs are absent or very sparse and may include *Acacia deanei* subsp. *deanei, Geijera parviflora, Eremophila mitchellii, Acacia decora, Rhagodia spinescens* and the low shrub *Sclerolaena birchii*. The ground cover usually dense especially after rain but may be sparse during dry times. Common grass species include *Aristida calycina var. calycina, Aristida jerichoensis var. subspinulifera, Aristida ramosa, Austrodanthonia setacea, Austrostipa scabra subsp. scabra, Bothriochloa macra, Chloris truncata, Enteropogon acicularis, Eragrostis lacunaria, Dichanthium sericeum subsp. sericeum* and *Digitaria brownii*. Forbs include *Chamaesyce drummondii* and *Dichondra repens*. The rock fern *Cheilanthes sieberi subsp. sieberi* is often present. Weeds may be common in places particularly where ground may have been cropped in the past. Occurs on loam and clay soils derived from metamorphic or sedimentary rocks and colluvium on slopes and crests of cleared rises and low hills in central NSW. A derived grassland community with a range of floristic variation. Useful for control of salinity and as a matrix between wooded remnants.				**(Does meet criteria)** **Listed EPBC Act, CE**: White Box Yellow Box Blakely's Red Gum Woodland. **(Does meet criteria)**
267	White Box - White Cypress Pine - Western Grey Box shrub/grass/forb woodland in the NSW	Tall or mid-high woodland or open woodland with trees to about 15 m high dominated by White Box (*Eucalyptus albens*), White Cypress Pine (*Callitris glaucophylla)* and often Western Grey Box (*E.microcarpa*) and rarely Black	Grassy Woodlands	Western Slopes Grassy Woodlands	17.46 ha	**Listed BC Act, E**: White Box Yellow Box Blakely's Red Gum Woodland. **(Does meet criteria)**

	South Western Slopes Bioregion	Cypress Pine (*Callitris endlicheri*). The shrub layer is sparse containing wattles such as *Acacia decora, Acacia hakeoides, Acacia deanei subsp. paucijuga, Acacia implexa* and in the south *Acacia pycnantha*. Other shrubs include *Dodonaea viscosa subsp. cuneata, Myoporum montanum, Pittosporum angustifolium, Senna artemisioides, Maireana enchylaenoides* and *Maireana microphylla*. The ground cover is mid-dense to very sparse depending on rainfall. Grass species include *Austrostipa densiflora, Austrostipa bigeniculata, Austrostipa verticillata, Austrodanthonia caespitosa,Themeda triandra, Enteropogon acicularis* and *Bothriochloa macra*. Forb species include *Xerochrysum viscosa, Dianella revoluta, Dichopogon strictus, Chrysocephalum apiculatum, Hydrocotyle laxiflora, Podolepis jaceoides, Vittadinia cuneata, Wahlenbergia luteola, Einadia hastata, Einadia nutans, Plantago varia* and *Atriplex semibaccata*. The mat-rushes *Lomandra multiflora* and *Lomandra filiformis subsp. coriacea* may be present. Weeds dominate distrubed locations. Occurs on red-brown loamy soils or loamy sandy soils derived from sedimentary or volcanic rocks on hillslopes and hillcrests or parna soils on low rises in undulating low hills landscapes in the mid-western part of the NSW South-western Slopes Bioregion. Contains elements of White Box woodland on the slopes (e.g. ID266), White Cypress Pine woodland (ID70) and Western Grey Box woodlands on the plains (ID76 and ID80). Mostly cleared with remnant stands affected by heavy grazing and weed invasion.				**Listed EPBC Act, CE**: White Box Yellow Box Blakely's Red Gum Woodland. **(Does meet criteria)**

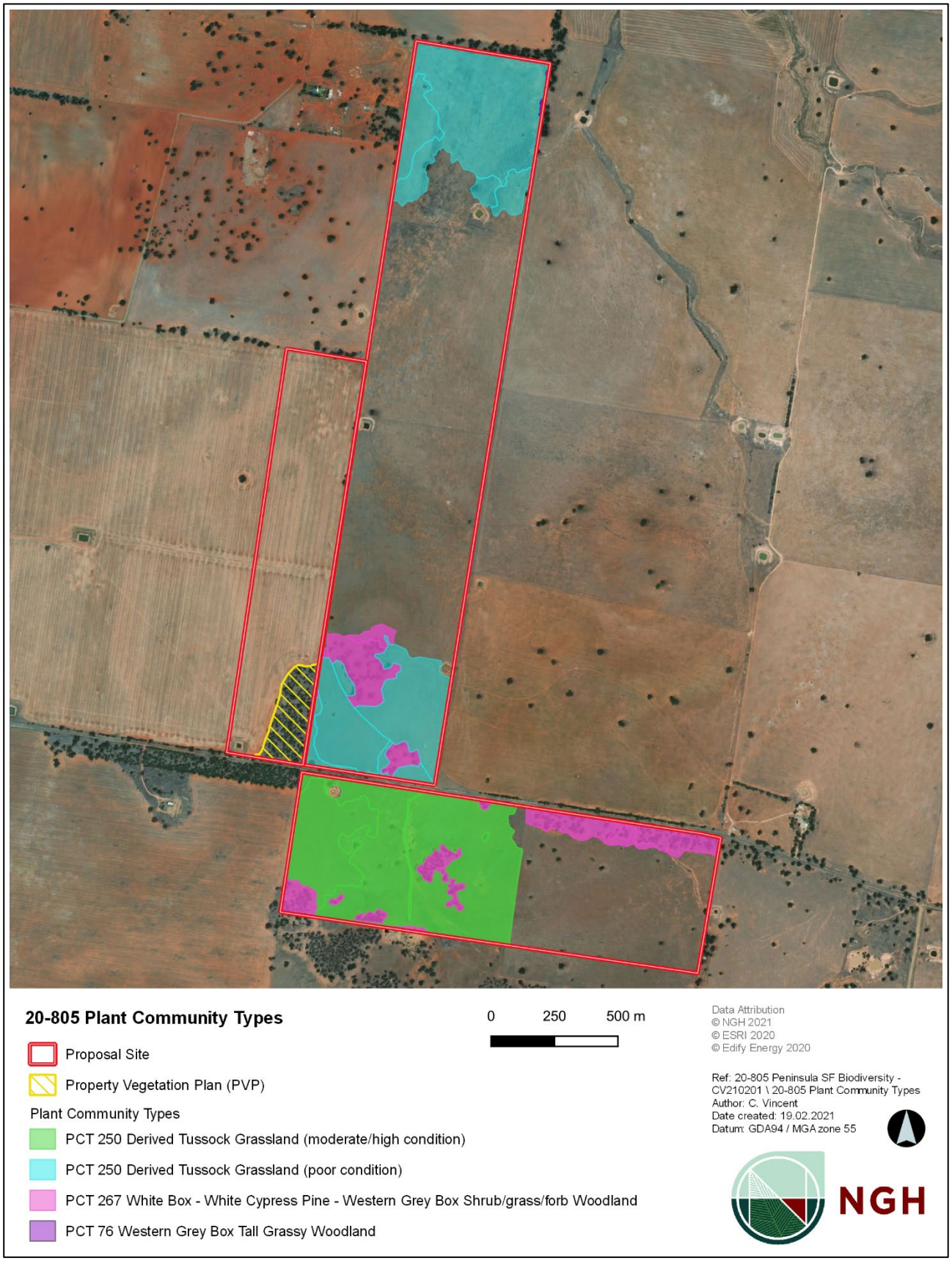

Figure 3-1 Plant community types - ground-truthed

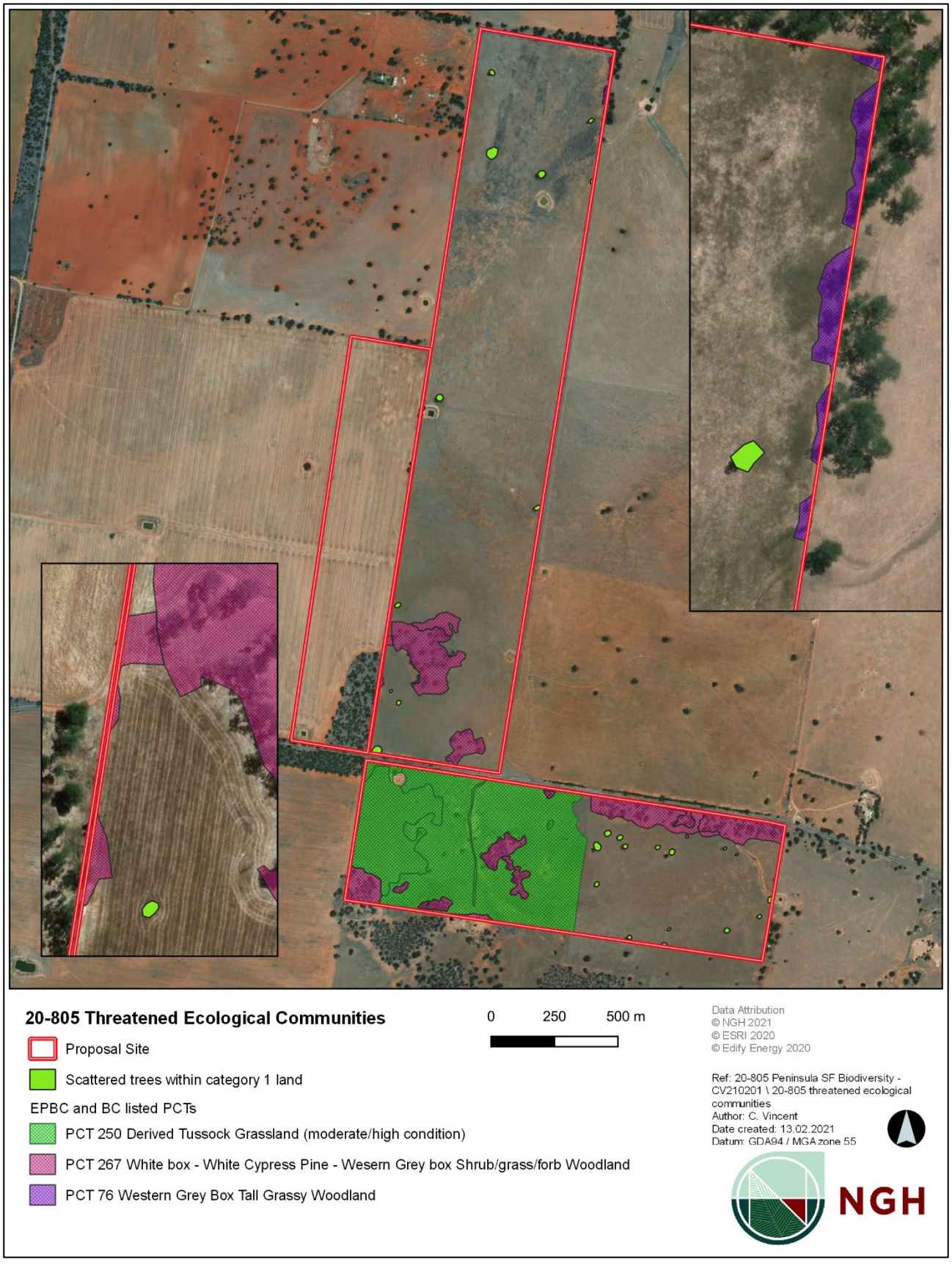

Figure 3-2 Threatened Ecological Communities in Category 2 regulated land

3.3. THREATENED SPECIES

A search of the NSW Bionet Atlas revealed threatened fauna and flora are known to occur in the study area (10 km radius from the subject land). The search results were 8 threatened bird species, 2 threatened mammal species and one threatened flora species. Of these, none occurred within the project area.

Brown Treecreeper – eastern subspecies *(Climacteris picumnus victoriae),* Speckled Warbler (*Chthonicola sagittata)* and Flame Robin (*Petroica phoenicea*) were recorded within 1 km of the subject land. Figure 4-3 details locations of threatened species records.

No threatened flora or fauna were identified onsite during the initial survey, but this can be attributed to time of day, weather, season, disturbance by stock and agricultural activities. Additional species may be identified during the BAM assessment and survey process.

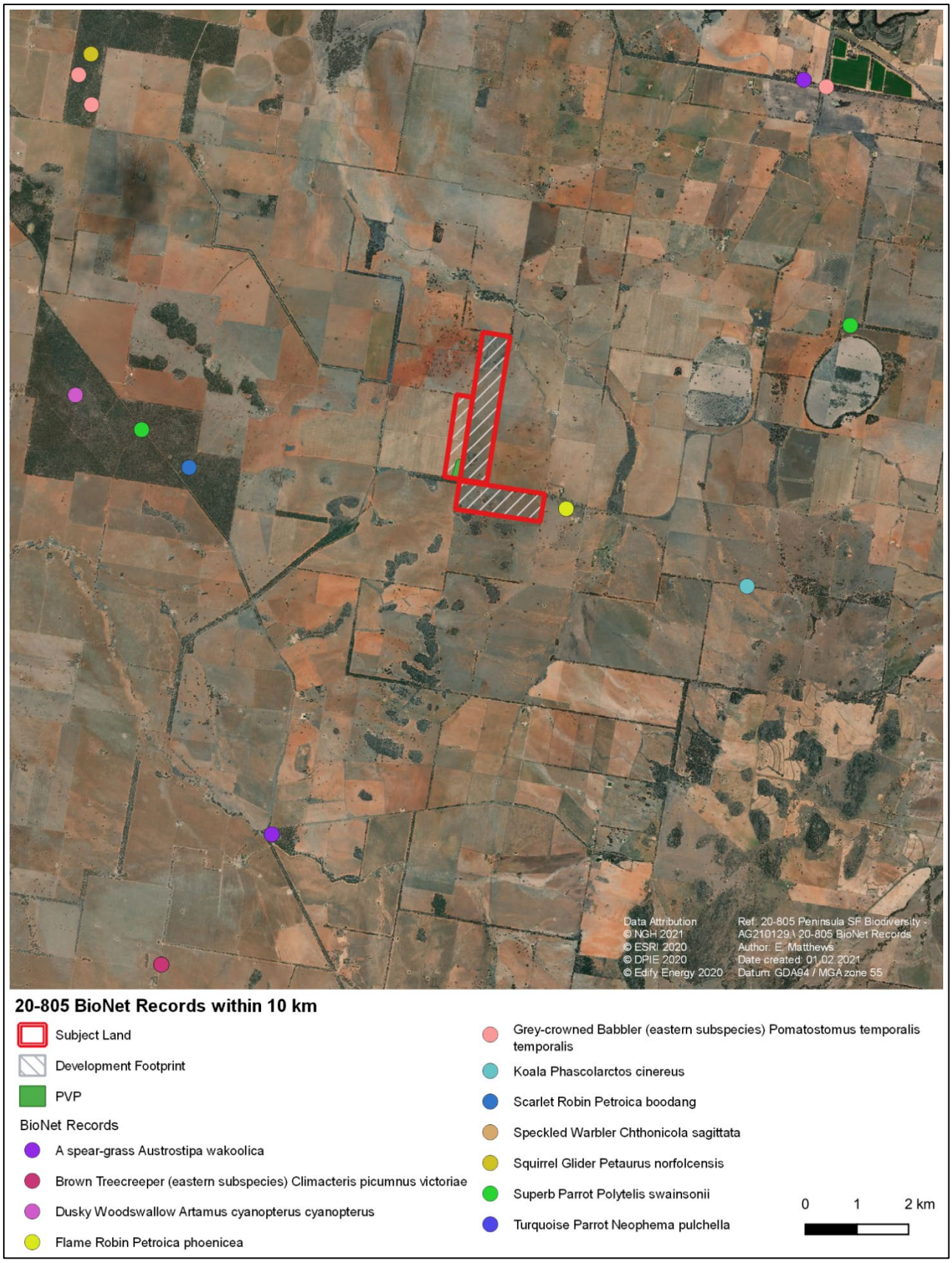

Figure 3-3. NSW BioNet Atlas Threatened Species Records.

3.4. BAM THREATENED SPECIES SURVEY REQUIREMENTS

The calculations below are an indicative representation of threatened species requiring survey as full BAM plot data of the required number of plots is required to accurately assess numbers of credits. The list of species requiring further survey is accurate at time of entry into the BAM Calculator. Further assessment of the patch size and area of land categorised as Category 1 is required to quantify the number of credits per PCT and species.

3.4.1. Ecosystem credit species to be assessed

Ecosystem credit species returned by the calculator as being associated with the PCTs present within the study area are shown in Table 3-4. Ecosystem credit species do not require survey to determine presence. Ecosystem credits apply to these species and an indicative list of credit prices is included in Appendix.

Table 3-5 Ecosystem credit species predicted by the BAM-C

Common Name	Associated PCT	NSW Listing Status	National Listing Status	Sensitivity to Gain
Regent Honeyeater (foraging) *Anthochaera phrygia*	267	Critically Endangered	Critically Endangered	High
Dusky Woodswallow *Artamus cyanopterus cyanopterus*	267, 250, 76	Vulnerable	Not Listed	Moderate
Glossy Black Cockatoo (foraging) *Calyptorhynchus lathami*	76	Vulnerable	Not listed	High
Speckled Warbler *Chthonicola sagittata*	267, 76	Vulnerable	Not Listed	High
Brown Treecreeper (Eastern subspecies) *Climacteris picumnus victoriae*	267, 76	Vulnerable	Not listed	High
Spotted-tailed Quoll *Dasyurus maculatus*	267	Vulnerable	Endangered	High

Common Name	Associated PCT	NSW Listing Status	National Listing Status	Sensitivity to Gain
White-fronted Chat *Epthiana albifrons*	250	Vulnerable	Not listed	Moderate
Grey Falcon *Falco hypoleucos*	250, 76	Endangered	Not listed	Moderate
Little Lorikeet *Glossopsitta pusilla*	267	Vulnerable	Not listed	High
White-bellied Sea-eagle (foraging only) *Haliaeetus leucogaster*	267, 250, 76	Vulnerable	Not listed	High
Swift Parrot (foraging) *Lathamus discolor*	267, 76	Endangered	Critically Endangered	Moderate
Major Mitchell's Cockatoo (foraging only) *Lophochroa leadbeateri*	250, 76	Vulnerable	Not listed	Moderate
Hooded Robin (Eastern form) *Melanodryas cucullata cucullata*	267, 76	Vulnerable	Not listed	Moderate
Scarlet Robin *Petroica boodang*	267, 250, 76	Vulnerable	Not listed	Moderate
Flame Robbin *Petroica phoenicea*	267, 250, 76	Vulnerable	Not listed	Moderate
Koala (foraging) *Phascolarctos cinereus*	267, 76	Vulnerable	Vulnerable	High
Superb Parrot (foraging) *Polytelis swainsonii*	267, 250, 76	Vulnerable	Vulnerable	Moderate
Grey-crowned Babbler (eastern subspecies)	267, 250, 76	Vulnerable	Not listed	Moderate

Common Name	Associated PCT	NSW Listing Status	National Listing Status	Sensitivity to Gain
Pomatostomus temporalis temporalis				
Grey-headed Flying-fox *Pteropus poliocephalus*	267, 76	Vulnerable	Vulnerable	High
Diamond Firetail *Stagonopleura guttata*	267, 250, 76	Vulnerable	Not listed	Moderate

3.4.2. Candidate species credit species to be assessed

The BAM-C predicted the following species credit species to occur at the development site. The following Table 4-3 assess each species credit species to see if they require targeted surveys and declares them included or excluded from requiring targeted survey. All included species (in bold) require surveys in the specified survey period to confirm presence and for the purpose of quantifying credits.

Table 3-6 Candidate species credit species requiring assessment

Species Credit Species	Habitat components and geographic restrictions	Sensitivity to gain class	Biodiversity Risk weighting	NSW Listing Status	National listing status	Habitat Components and abundance on site	Included or Excluded	Reason for Inclusion or exclusion	Survey period
Ausfeld's Wattle *Acacia ausfeldii*	**Foot slopes and low rises on sandstone**	**High**	**High - 2**	**Vulnerable**	**Not listed**	**Associated White Box woodland**	**Included**	**No sandstone in project area**	**Aug-Oct**
Regent Honeyeater (breeding) *Anthochaera phrygia*	**As mapped areas**	**High**	**Very High - 3**	**Critically endangered**	**Critically endangered**	**Presence of key eucalyptus species for foraging**	**Included**	**Not in mapped breeding areas**	**No specified months**

Species Credit Species	Habitat components and geographic restrictions	Sensitivity to gain class	Biodiversity Risk weighting	NSW Listing Status	National listing status	Habitat Components and abundance on site	Included or Excluded	Reason for Inclusion or exclusion	Survey period
Pink-tailed Legless Lizard *Aprasia parapulchella*	**Rocky areas or within 50m of rocky areas**	**High**	**High - 2**	**Vulnerable**	**Vulnerable**	**Rocky outcrop**	**Included**	**Presence of rocky outcrop with native groundcover species**	**Sept-Nov**
Speargrass – *Austrostipa wakoolica*	Alluvial plains and plains; south of Narrandera	Moderate	NA	Endangered	Endangered	Presence of grasslands on plains	Excluded	North of Narrandera. Outside of geographical range	NA
Mossgiel Daisy – *Brachyscome papillosa*	South & west of the Coolamon to Ardlethan Road, west of Lockhart and north of Rand	High	NA	Vulnerable	Vulnerable	No associated flora species	Excluded	Not in specified distribution range	NA
Sand-hill Spider Orchid *Caladenia arenaria*	West of Lockhart and north of Rand	Moderate	NA	Endangered	Endangered	None	Excluded	Located east of Lockhart	NA
Glossy Black Cockatoo (breeding) *Calyptorhynchus lathami*	**Hollow bearing trees; living or dead trees with greater than 15cm diameter and greater than 5m above ground level**	**Moderate**	**High - 2**	**Vulnerable**	**Endangered**	**Hollows**	**Included**	**Hollows above 5m above ground and more than 15cm**	**April-Aug**

Species Credit Species	Habitat components and geographic restrictions	Sensitivity to gain class	Biodiversity Risk weighting	NSW Listing Status	National listing status	Habitat Components and abundance on site	Included or Excluded	Reason for Inclusion or exclusion	Survey period
Sloane's Froglet *Crinia sloanei*	**Semi-permanent wet areas, within 500m of waterbodies; shallow sections with emergent or sub-emergent vegetation**	**Moderate**	**Moderate – 1.5**	**Vulnerable**	**Endangered**	**Dams**	**Included**	**Presence of permanent dams on site**	**July-Aug**
Pine Donkey Orchid *Diuris tricolor*	**None**	**Moderate**	**Moderate – 1.5**	**Vulnerable**	**Not listed**	***Callitris glaucophylla* in woodland and as paddock trees**	**Included**	**Presence of associated canopy trees *Callitris glaucophylla***	**Sept-Oct**
Spike-rush *Eleocharis obicis*	**Periodically waterlogged sites including dams and table drains**	**High**	**High - 2**	**Vulnerable**	**Vulnerable**	**Farm dams**	**Included**	**Presence of farm dams**	**Oct-Nov**
White-bellied Sea-eagle (Breeding) *Haliaeetus leucogaster*	**Living or dead trees within 1km of rivers, lakes, large dams, wetlands or creeks**	**High**	**High - 2**	**Vulnerable**	**Not listed**	**Farm dams**	**Included**	**Presence of farm dams and suitable living or dead trees**	**Jul-Dec**
Swift Parrot (breeding) *Lathamus discolor*	As per mapped areas	Moderate	NA	Endangered	Critically endangered	None	Excluded	Breeds in Tasmania	NA

Species Credit Species	Habitat components and geographic restrictions	Sensitivity to gain class	Biodiversity Risk weighting	NSW Listing Status	National listing status	Habitat Components and abundance on site	Included or Excluded	Reason for Inclusion or exclusion	Survey period
Spiny Peppercress *Lepidium aschersonii*		High	High - 2	Vulnerable	Vulnerable	Grey Box woodland	Included	Presence of associated species	Nov-April
Major Mitchell Cockatoo (breeding) *Lophochroa leadbeateri*	Hollow bearing trees with hollows greater than 10cm diameter	High	High - 2	Vulnerable	Not listed	Hollow-bearing trees	Included	Presence of hollows greater than 10cm diameter	Sept-Dec
Squirrel Glider *Petaurus norfolcensis*		High	High - 2	Vulnerable	Not listed	Mature Box trees with hollows	Included	Presence of Grey and White Box trees with hollows	All months
Koala (Breeding) *Phascolarctus cinereus*	Areas identified as important habitat	High	High - 2	Vulnerable	Vulnerable	Mature feed trees	Included	Bionet recording within 5kms	All months
Superb Parrot (breeding) *Polytelis swainsonii*	Living or dead *E.melliodora/ albens*; hollows greater than 5cm diameter and greater than 4m above ground	High	High - 2	Vulnerable	Vulnerable	Suitable hollow-bearing trees in Yellow and White Box	Included	Presence of suitable hollows and Eucalyptus species	Sept-Nov

Species Credit Species	Habitat components and geographic restrictions	Sensitivity to gain class	Biodiversity Risk weighting	NSW Listing Status	National listing status	Habitat Components and abundance on site	Included or Excluded	Reason for Inclusion or exclusion	Survey period
Grey-headed Flying-fox (breeding) *Pteropus poliocephalus*	Breeding camps	High		Vulnerable	Vulnerable	None	Excluded	No recorded flying fox camps within 30kms	NA
Slender Darling Pea *Swainsona murrayana*		**High**	**High - 2**	**Vulnerable**	**Vulnerable**	**Woodland/ Grassland**	**Included**	**Presence of woodland and grassland habitat**	**Sept**
Small Purple-pea *Swainsona recta*		**Moderate**	**High - 2**	**Endangered**	**Endangered**	**Woodland/ Grassland**	**Included**	**Presence of woodland and grassland habitat**	**Sept-Nov**
Silky Swainson-pea *Swainsona sericea*		**High**	**High - 2**	**Vulnerable**	**Not listed**	**Woodland/ Grassland**	**Included**	**Presence of woodland and grassland habitat**	**Sept-Nov**

BAM survey recommendations

Under the BAM a minimum number of plots are required per zone. The number of plots required per zone can now be calculated after PCTs have been ground-truthed as shown in Table 4-4. Figure 4-4 shows the minimum plot requirements (BAM Stage 1, 2018).

Table 1 Minimum number of plots required per zone (copy of Table 4 from Paragraph 5. of the BAM)

Vegetation zone area (ha)	Minimum number of plots / mid-lines
<2	1 plot/ mid-line
>2–5	2 plots/ mid-lines
>5–20	3 plots/ mid-lines
>20–50	4 plots/ mid-lines
>50–100	5 plots/ mid-lines
>100–250	6 plots/ mid-lines
>250–1000	7 plots/ mid-lines; more plots may be needed if the condition of the vegetation is variable across the zone
>1000	8 plots/mid-lines; more plots may be needed if the condition of the vegetation is variable across the zone

Figure 3-4 BAM minimum plot requirements (BAM Stage 1, 2018)

Table 3-7 BAM plot requirements

PCT	Approx. area of PCT in project area (ha)	No. of BAM plots required
76	0.29	1
250	44.72.571	4
267	17.46	3
0	0	0

Note: PCT 250 poor excluded due to it being category 1 exempt land.

3.5. HABITAT VALUES

The key habitat values that occur in the subject land include but may not be limited to:

- Grassland.
- Woodland.
- Fallen timber.
- Isolated paddock trees.
- Water sources:
    - Artificial water sources (dams/troughs/channels).
    - Wetland inundation areas.

- Hollow bearing and nest trees
- Transmission line.
- Agricultural crops.

3.5.1. Grasslands

Grasslands provide cover, refuge, breeding, and foraging resources for fauna species. Threatened species such as the White-fronted Chat *(Epthianura albifrons)* utilise grasslands. Within the subject land, large areas of grasslands occur at varying levels of quality (Figure 3-5). All areas have been subject to varying levels of clearing and grazing, with higher quality grasslands to the south of Payten's Bridge Road.

This grassland patch was in good condition with mature groundcover plant species. Further BAM plots are required to determine if the non-native grassland is to be included in PCT 250, albeit in poor condition. Grasslands in good condition represent threatened species habitat and high constraints to the proposal. Areas with predominantly exotic pasture represents low constraints but require further BAM plots to determine their vegetation integrity under the BAM.

Figure 3-5: Typical grassland.

3.5.2. Woodlands

Woodlands provide cover, refuge, breeding and foraging resources for fauna species. Woodland patches varied in quality and condition. Majority of the woodland patches contained mature White Box (*Eucalyptus albens*), Western Grey Box (*Eucalyptus microcarpa*) and White Cypress Pine (*Callitris glaucophylla*) and Kurrajong (*Brachychiton populneus*) and no shrub understory (Figure 3-6). Some patches also contained scattered *Casuarina cristata* and *Acacia spp.* Woodland patches

were isolated across the site and consisted of up to 50 individual mature trees. Fauna presence increased significantly at these patches. Several small-medium stick nests occurred at each woodland patch. A number of threatened species utilise woodland, for breeding, foraging and shelter. Due to the limited number of woodland patches, woodlands within the subject land represent threatened species habitat and high constraints to the proposal.

Figure 3-6: A woodland patch of White Box, White Cypress and *Casuarina cristata.*

3.5.3. Fallen Timber

Fallen timber occurred in woodland patches. Fallen timber is utilised by a range of species for cover, refuge, breeding and foraging. Fallen timber can contain hollows. Some fallen timber occurred outside woodland patches were isolated trees and shrubs have died. Fallen timber occurred only within woodland patches (Figure 3-7) and would fall under the representation of threatened species habitat within woodland areas. Therefore, fallen timber is considered a low constraint to the proposal.

Figure 3-7: Fallen timber.

3.5.4. Isolated paddock trees

Isolated paddock trees and shrubs predominately consisted of mature White Box (*Eucalyptus albens*), Western Grey Box (*Eucalyptus microcarpa*), White Cypress Pine (*Callitris glaucophylla*) and Kurrajong (*Brachychiton populneus*) species (Figure 4-8). Isolated trees and shrub patches provide a small level of connectivity between woodland patches as well as foraging, breeding, cover, and refuge for fauna species. Several isolated trees contained small to medium stick or mud nests. Some trees contained both, demonstrating use by a range of bird species. These isolated paddock trees provide connectivity between woodland patches and roadside vegetation and hence provide habitat value in the broader landscape. There were several dead standing paddock trees providing habitat value within the project area. Isolated paddock trees and shrubs represent threatened species habitat and are likely to pose moderate constraints to the proposal.

Figure 3-8: Isolated paddock trees in non-native pasture.

3.5.5. Water

Water sources are a valuable resource for fauna species in agricultural landscapes (Figure 4-9). Water sources provide habitat for aquatic species including fishes and amphibians. Water is also an important resource for terrestrial species. No watercourses occur within the project area, but five small dams occur, one on the south side of Payten's Bridge Road and four on the north side of the

road. All of these water sources provide ephemeral or permanent resources. Many threatened species rely on the presence of water to sustain presence within an environment. Water sources represent threatened species resources and habitat and are likely to moderate constraints to the proposal.

Figure 3-9: Dams containing water, near paddock trees.

3.5.6. Hollow bearing trees and nesting habitat

Many fauna species, including threatened species, are hollow dependent. Hollow bearing trees can take over 100 years to form and are therefore a valuable resource. Hollow bearing trees within the subject land occurred predominately in White Box (*Eucalyptus albens*) and Western Grey Box (*Eucalyptus microcarpa*) stands. Other mature trees present may contain hollows. Hollow bearing trees represent high biodiversity constraints for the proposal.

Stick and mud nests that were found on the site demonstrate a range of bird species using these patches as breeding habitat.

3.5.7. Rocky outcrops

Rocky outcrops can provide important habitat for reptile invertebrate and other species (Figure 4-10). A rocky outcrop was present at the highest point of the site, south of Payten's Bridge Road. This rocky outcrop occurred within native grassland. Rocky outcrops represent high biodiversity constraints for the proposal.

Figure 3-10 Rocky habitat within project area

3.5.8. Transmission line

A transmission line is present on the subject land. Eagles and other raptors occasionally utilise the transmission infrastructure to build nests. The transmission line is permanent infrastructure and poses no biodiversity constraints to the proposal.

3.5.9. Agricultural crops and grazing

Some broad acre agricultural cropping, that is occurring within the project area, can provide seasonal habitat, simulating 'grassland' like habitats. These areas are currently used for grazing cattle. These areas are highly disturbed from clearing and are likely to represent very low biodiversity values. Threatened species such as White-fronted Chat *(Epthianura albifrons)* and Australasian Bittern are known to utilise agricultural crops in agricultural landscapes. Paddock trees occur within the areas marked as non-native pasture.

4. 5. PRESCRIBED BIODIVERSITY IMPACTS

4.1. BIODIVERSITY VALUES

Biodiversity values mapped by the Department of Planning, Industry and Environment (DPIE), indicates land that is identified as containing high biodiversity value. areas of high biodiversity value are particularly sensitive to clearing and development. There are no areas of high biodiversity value within the subject land, and therefore pose no constraint on the proposal Figure 5-1).

4.2. SERIOUS AND IRREVERSIBLE IMPACT (SAII)

Entities identified as having a Serious and Irreversible Impact (SAII) that occur in the project area according to the BAM-C include:

- White Box Yellow Box Blakely's Red Gum Woodland
- *Anthochaera phrygia* / Regent Honeyeater

The woodland areas should be avoided as much as possible but further BAM surveys will determine the vegetation condition and inform an in-depth assessment as part of a Biodiversity Development Assessment Report.

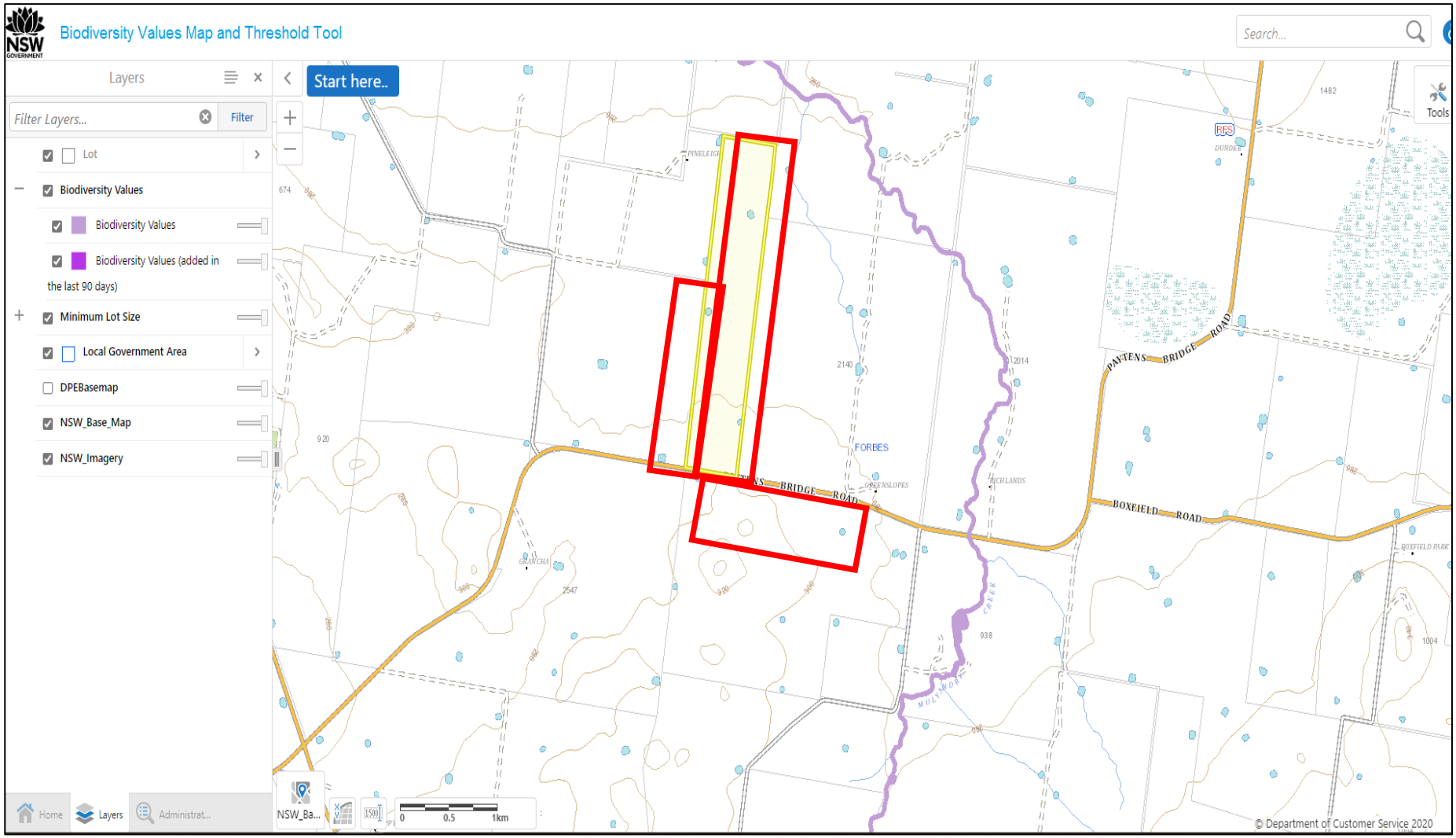

Figure 4-1. Areas of high Biodiversity Value as mapped by the DPIE.

4.3. RIPARIAN AND TERRESTRIAL CORRIDORS

The terrestrial landscape within the Subject land contains discontinuous woodland corridors. Patches of woodland form important corridors and connectivity across the landscape and refuges for highly mobile species such as birds and bats. There are no riparian corridors in the project area.

Payten's Bridge Road intersects the project area and forms an important vegetation corridor in the area that links various nature reserves, Mulyandry Creek, and the Lachlan River (Figure 4-2). These systems form important fauna movement corridors on a regional scale, including important habitat for migratory wetland bird species. These corridors are likely to present a moderate constraint to the proposal.

4.4. GROUNDWATER DEPENDENT ECOSYSTEMS

Groundwater dependent ecosystems are vulnerable to pressures such as agriculture, mining, urban and commercial development (BOM 2017). Doody et al. (2019) define Groundwater Dependent Ecosystems (GDEs) as *whose species and ecological processes rely on groundwater, either entirely or intermittently*. GDEs are roughly grouped into subterranean, aquatic and terrestrial ecosystems. For the purpose of this report, aquatic and terrestrial GDEs are mapped. Subterranean mapping has not been conducted outside of QLD under the Bureau of Meteorology GDE atlas. Aquatic GDEs do not occur within the subject land (see Figure 4-4) but Terrestrial GDEs do occur and are displayed in Figure 4-3. Terrestrial GDE in the project area is classified as 'Unclassified Potential GDE', but the areas mapped correspond to the mapped PCTs 250 and 267 and 76 and hence already pose a high constraint.

4.5. KEY FISH HABITAT

Key Fish Habitat (KFH) are habitats that are important to the sustainability of the recreational and commercial fishing industries, the maintenance of fish populations and the survival and recovery of threatened aquatic systems.

The project area contains no mapped key fish habitat.

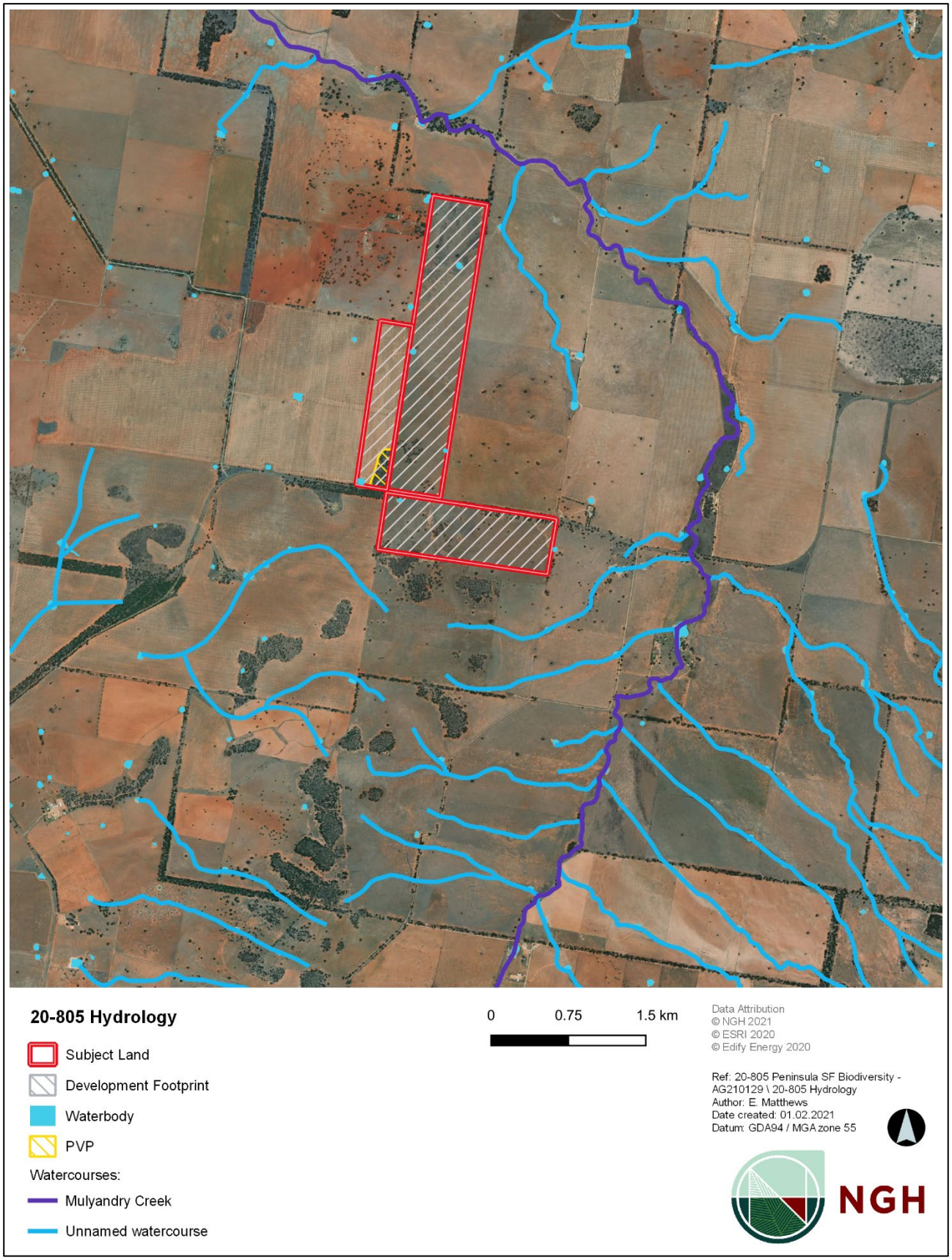

Figure 4-2 Site hydrology

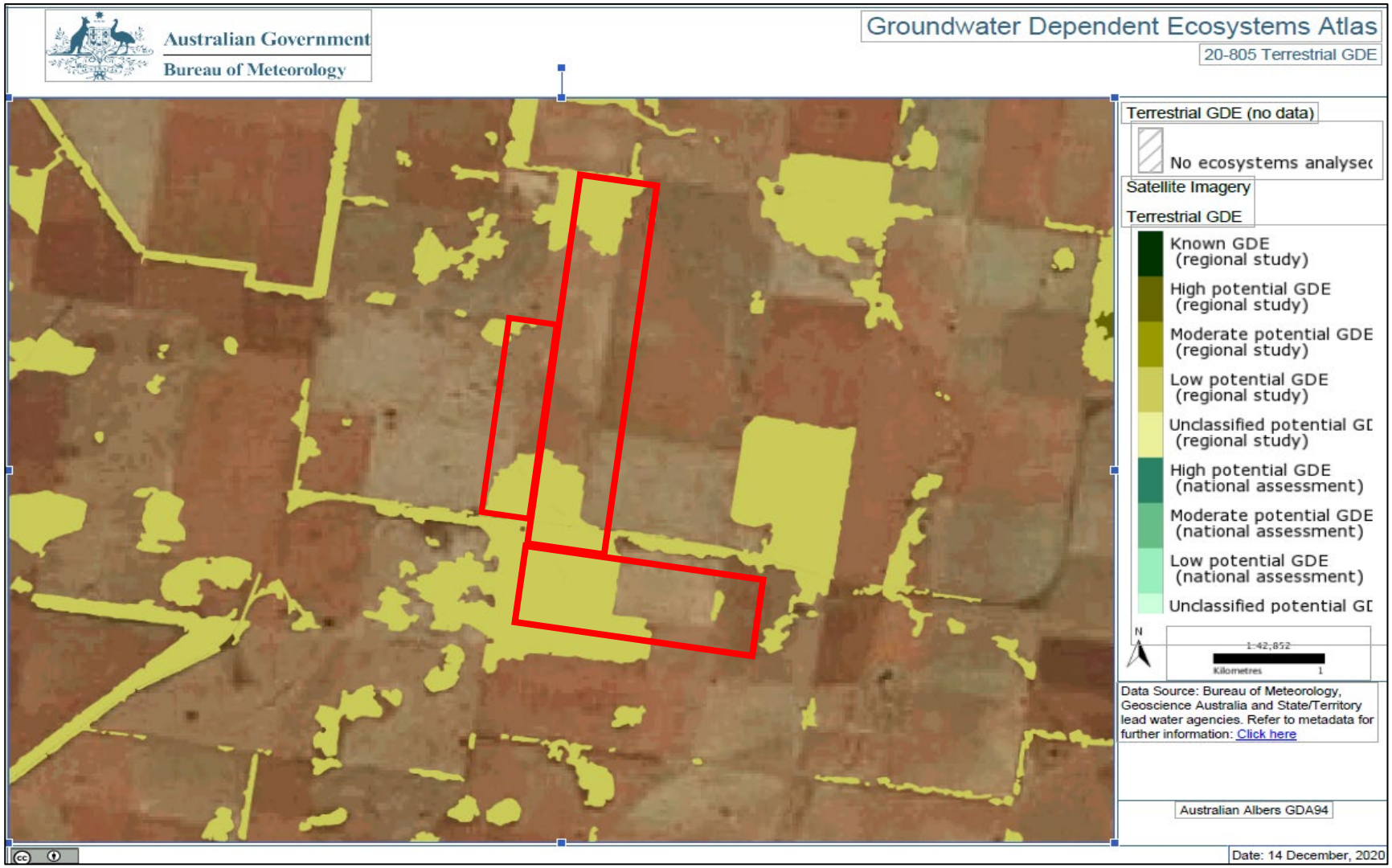

Figure 4-3: Groundwater Dependent Ecosystems – Terrestrial.

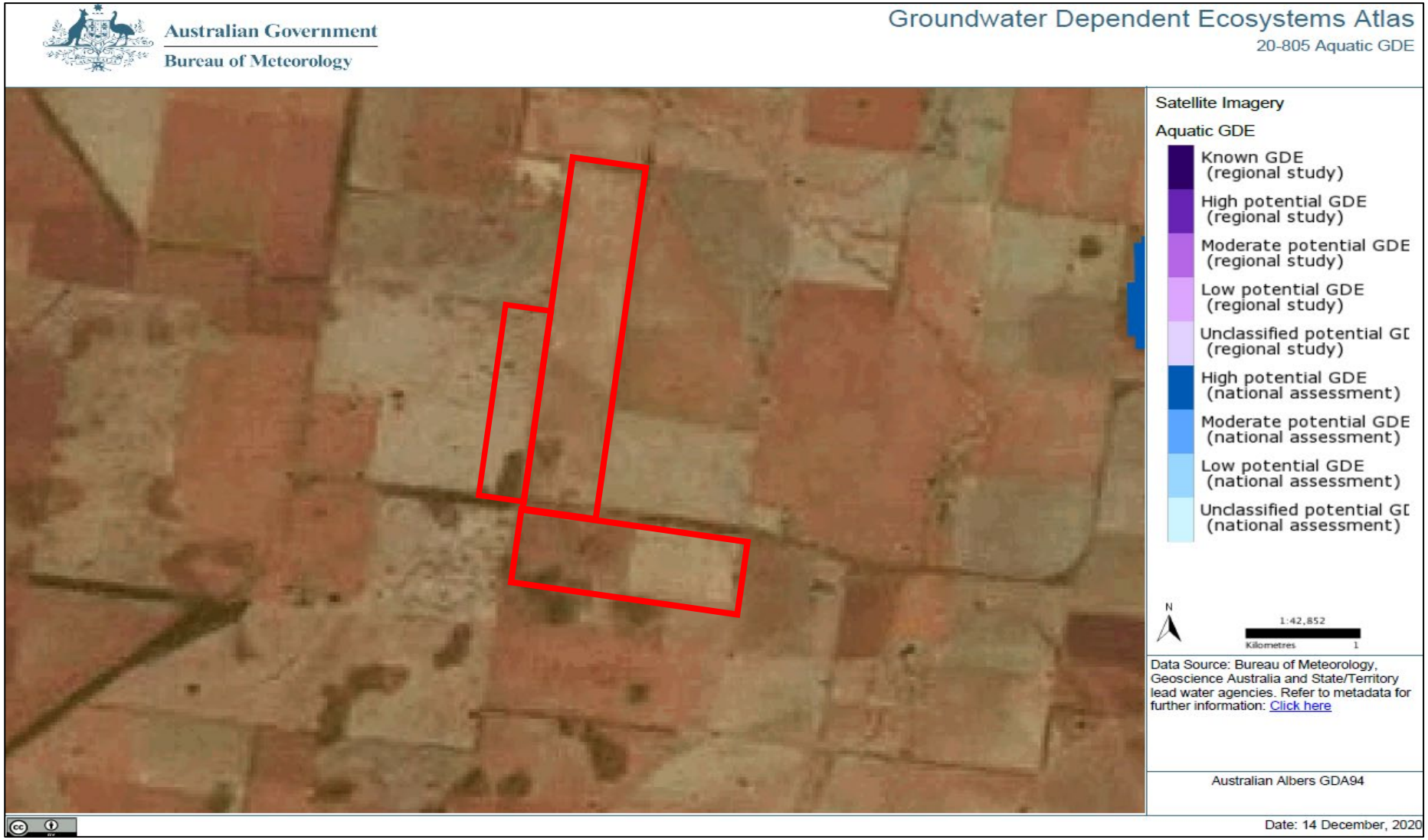

Figure 4-4 Groundwater Dependant Ecosystems – Aquatic

5. BIODIVERSITY ASSESSMENT PATHWAY

State Significant Developments (SSDs) require the preparation of a BDAR, in accordance with BAM pursuant with the BC Act. To meet these requirements, a BDAR must:

- Demonstrate how impacts have been avoided, mitigated and as a last resort, offset. The constraints mapping provided in this report and other logistical factors should be scrutinised to ensure that the final impact areas presented have avoided impacts on key biodiversity constraints as much as possible, namely:
    - Threatened species habitat
    - TECs
- Consider Serious and Irreversible Impact (SAII) entities. If a SAII is determined by an approval authority, the proposal cannot be approved unless overruled by the minister. Key risks for the project here relate to the loss of small populations to threatened species.

As part of the BAM process, detailed ecological surveys and further investigation and assessment would be undertaken including:

- Field validation of vegetation community mapping
- Floristic plot data (to confirm the PCTs, TECs, their vegetation integrity score, condition and distribution)
- Targeted surveys for candidate threatened species (generated by the SEARs and BAM process)
- Recommendations to avoid and minimise impacts
- Offset calculations to determine the offset obligation of the final proposal
- Offset planning, to ensure the offset obligation can be met

Most solar farms trigger referral under the EPBC Act. All relevant EPBC listed communities and species would be included in the survey program. Matters of National Environmental Significance (MNES) are assessed within a BDAR, in accordance with Commonwealth criteria. Where a 'significant' impact is predicted, offsetting requirements for the project would need to be undertaken using the EPBC Offsets Assessment Guide (EPBC Offsets Calculator), discussed within and appended to the BDAR. Recent changes to the NSW/Commonwealth Bilateral Agreement would need further clarification to determine if it could be applied to this project.

As it is considered likely that a referral to Department of Agriculture, Water and Environment (DAWE) will be recommended, early referral can reduce duplication of assessment. Supplementary SEARs can be issued by DPIE to address MNES. This will allow a streamlined assessment process of Commonwealth Matters included concurrently within the EIS.

6. BIODIVERSITY CONSTRAINTS

Preliminary constraints mapping (Figure 6-1) was categorised from Low – High. These categories were determined using the following definitions and summarised in Table 6-1. This determination is subject to change following the BAM assessment process and formalisation of environmental assessments. Category 1 – Exempt land was excluded from this constraints analysis. The area included in this constraint's analysis covered approximately 62.48ha.

High Constraint (Red) – These are areas that should be avoided if possible and will require justification in the Biodiversity Development Assessment Report (BDAR) if they cannot be avoided, or areas that are likely to generate high biodiversity credit per hectare (ha) requirements that will require offsetting. These include areas of:

- TEC with an intact overstorey and/or native dominated understorey.
- Non-TEC Plant Community Types (PCTs) in good condition (good ecosystem credit species habitat).
- Areas containing a high abundance of hollow bearing trees in a landscape generally devoid of or that has a sparse abundance of canopy species.
- High potential candidate species credits habitat (i.e., *Hollow dependent species*).
- Riparian areas and marshlands in moderate to good condition. And mapped as vulnerable land on the Native Regulatory Map.

Moderate Constraint (Orange) – These areas do not necessarily need to be avoided but will generate a moderate biodiversity credit per hectare that require offsetting. These include areas of:

- Degraded TEC (absent of canopy species).
- Non-TEC PCTs in moderate to good condition with high cover of native species cover and moderate to high abundance of native species diversity (moderate ecosystem credit species habitat).
- Ephemeral riparian areas and farm dams in moderate condition with evidence of fringing riparian vegetation.

Low-Moderate Constraint (Yellow) – These areas are considered appropriate for development however will generate low-moderate biodiversity credit requirements per hectare. These include areas of:

- Degraded non-TEC PCTs with a high cover of native species but generally low-moderate species diversity.

Low Constraint (Green) – These areas are considered the most appropriate for development. These areas are unlikely to generate biodiversity credits (exotic areas) or may have low biodiversity credit requirements per hectare. These include areas of:

- Non-native vegetation (Exotic vegetation) or areas potentially mapped as Category 1 – Exempt Land under the *Local Land Services Amendment Act 2016.*
- Significantly degraded areas TEC that are unlikely to meet the criteria of the TEC determination.
- Highly degraded Non-TEC PCTs in low or poor condition.

- Ephemeral riparian areas and farm dams in low condition with no evidence of fringing riparian vegetation.

Table 6-1: Preliminary constraints

Constraints	Constraint Level	Justification	Area affected (ha)
PCT 0 Non-native pasture	Low	This PCT is declared non-native according to both vegetation mapping and ground-truthed survey	0
PCT 45 Plains Grass grassland on alluvial mainly clay soils in the Riverina Bioregion and NSW South Western Slopes Bioregion	NA	PCT is associated with BC Act listed, Endangered: *Artesian Springs Ecological Community in the Great Artesian Basin.* Found to not exist on site, due to absence of key tussock grasses.	0
PCT 76 Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions	High – only on northern side of road	PCT is associated with both the: **Listed BC Act, E**: Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions **Listed EPBC Act, E**: Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions Found only on north portion of subject site	0.29
PCT 250 MODERATE-HIGH Derived tussock grassland of the central western plains and lower slopes of NSW	High – only on south side of road	PCT is associated with both the: **Listed BC Act, E:** White Box Yellow Box Blakely's Red Gum Woodland **Listed EPBC Act, CE:** White Box Yellow Box Blakely's Red Gum Woodland This PCT is found in both moderate and good condition	44.72ha (medium/high condition)
PCT 250 POOR Derived tussock grassland of the central western plains and lower slopes of NSW	Poor	PCT is associated with both the: **Listed BC Act, E:** White Box Yellow Box Blakely's Red Gum Woodland **Listed EPBC Act, CE:** White Box Yellow Box Blakely's Red Gum Woodland	49.12
PCT 267 White Box - White Cypress Pine - Western Grey Box shrub/grass/forb woodland in	High	PCT is associated with both the: **Listed BC Act, E**: White Box Yellow Box Blakely's Red Gum Woodland **Listed EPBC Act, CE:** White Box Yellow Box Blakely's Red Gum Woodland	17.46

the NSW South Western Slopes Bioregion		This PCT is found in both moderate and good condition in small patches	
Hollow-bearing trees	High	Provides habitat for threatened species	<1
Rocky outcrop	High	Provides habitat for threatened species	0.6
Road reserve	High	Is part of continuous vegetation that meets TEC thresholds	67.6
Nest trees	Moderate	Provides habitat for threatened species	<1
Dams	Moderate	Four dams occur within the project area	<2
Transmission line	Low	Provides limited potential for habitat for threatened species	negligible

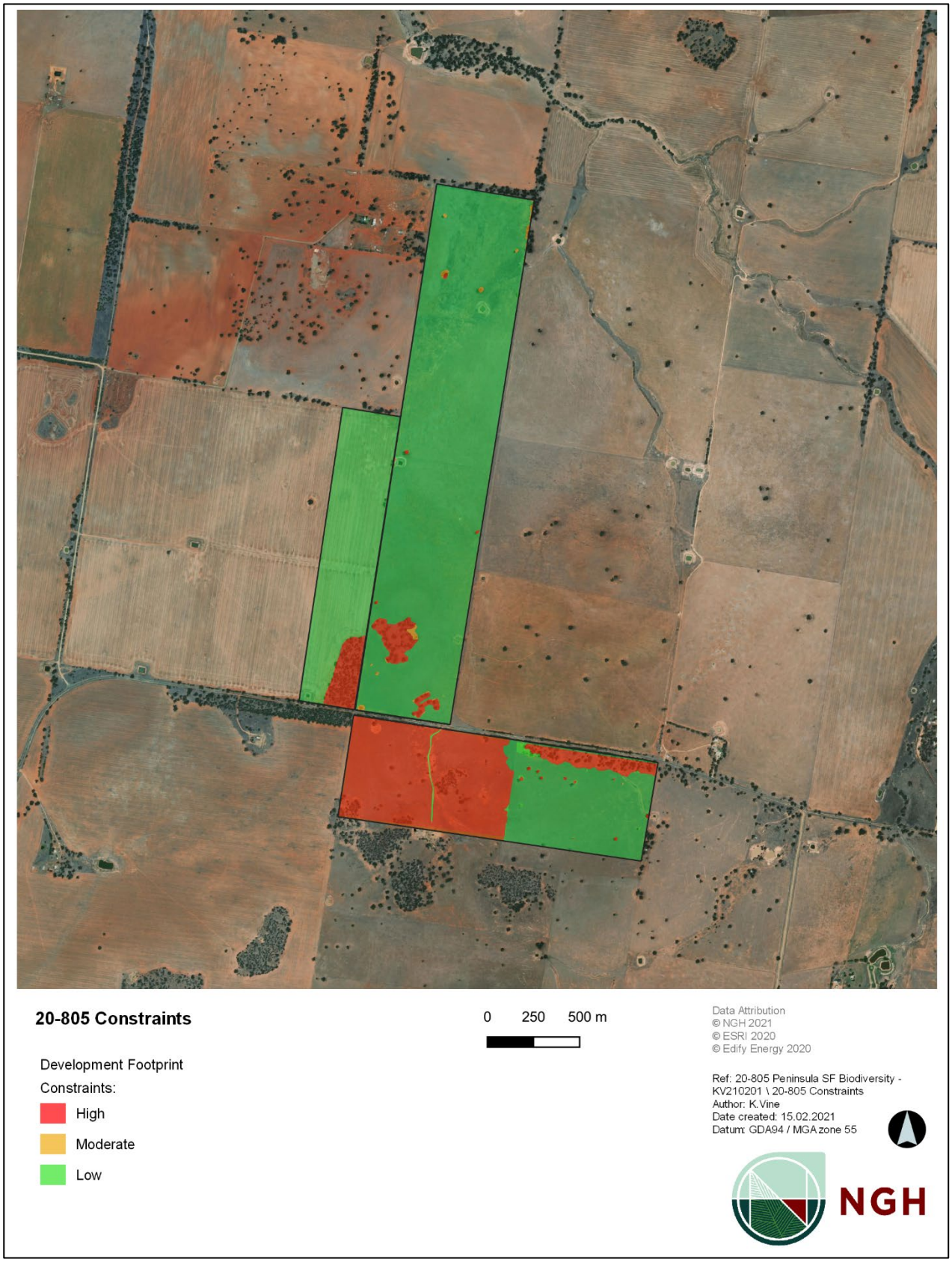

Figure 6-1 Constraints in project area excluding Category 1 exempt land

7. AVOID AND MINIMISE RECOMMENDATIONS

This section discusses the areas onsite that are recommended to be avoided or impacts minimised due to their high biodiversity value, these high value areas are mapped on Figure 6-1. The following details recommendations for avoiding and minimising biodiversity impacts.

- Avoid impacts to PCT 76. This PCT is of moderate value in per credit (approximately $4,100/credit) but represents a very small area in the project area (0.29ha).
- Avoid impacts to PCT 250. This is associated with high value credits (approximately $8,500/credit) and represents a significant portion of the project area (44.72ha). The PCT occurs in a degraded form and further plots are recommended to determine the exact areas and conditions of this PCT to potentially remove some areas from this classification.
- Avoid impacts to PCT 267. This is associated with high value credits and represents only small-isolated areas on the south and north side of Payten's Bridge Road (17.46ha). This PCT is continuous with vegetation in the road reserve.
- Avoid impacts to area immediately adjacent to PVP area. Allow an 8-10m buffer to ensure adjacent impacts do not disturb edges of PVP area.
- Minimise impacting vegetated areas in the road reserve when designing entrance to the project area. Utilise areas existing entrances. Vegetation within the road reserve is of good condition and is a TEC.
- Minimise removal of dams and adjacent paddock trees that provide habitat value to threatened species.
- Minimise removal of hollow bearing trees in non-native pasture. Hollow-bearing trees provide habitat to threatened species and serve as connectivity between woodland remnants.
- Avoid removal of hollow-bearing trees in mod-high condition PCT 250.
- Recommend completion of comprehensive BAM plots that meet the minimum number of plots, may result in some PCT condition statuses and number of ecosystem credits being reduced after the BAM calculator determines the Vegetation Integrity Score. The Vegetation Integrity Score has a direct result on the number of offset credits required.
- Recommend survey for high value threatened species may result in them not requiring offset. High value species (greater than $450-500/credit) include Regent Honeyeater, Pink-tailed Legless Lizard, Glossy Black Cockatoo, Sloane's Froglet, Major Mitchell Cockatoo, Squirrel Glider, and Koala.
- Recommend comprehensive survey of Superb Parrot and Small Purple-pea, which have high value credits between $700-900 per credit. These species require survey between September and November. These species are associated with all PCTs in the project area.
- Minimise use of the rocky outcrop areas which are associated with the Pink-tailed Legless Lizard. This species is worth between $450-500/credit.
- *Acacia ausfeldii* is a low value species credit (less than $55/credit) and can easily be avoided through survey completed in conjunction with other flora surveys, specifically with the high value Small Purple-pea that will occur in the same PCTs.

  Note that current credit values are subject to market forces and may change over time.

8. CONCLUSION

Based on preliminary scoping assessment, the Plant Community Types in the project area are:

- Just within the project area boundary comprises 0.29 ha of PCT 76: Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions. This PCT is continuous with vegetation in adjacent areas.
- 44.72ha of PCT 250: Derived tussock grassland of the central western plains and lower slopes of NSW
- 17.46 ha of PCT 267: White Box - White Cypress Pine - Western Grey Box shrub/grass/forb woodland in the NSW South Western Slopes Bioregion. This PCT is continuous with vegetation in the road reserve.

PCTs 250 and 267 are both associated with the BC (Endangered) and EPBC Act (Critically Endangered) listed *White Box Yellow Box Blakely's Red Gum Woodland*. Under the EPBC Act, PCT 250 low condition does not meet the criteria. The patches of PCT 267 that meet the EPBC criteria of size and minimum number of native understorey species occur in the south-eastern section of the site and adjacent to the road. Under the BC Act, PCTs 250 and 267 do meet the criteria for this TEC.

The constraints were rated as High, Moderate and Low. The following areas of high constraint are:

1. PCTs associated with the Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions (Listed BC Act as Endangered) and Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions (Listed EPBC Act as Endangered). These TECs areas include:
    a. PCT 76: Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions (located outside of project area)
    b. PCT 250 Derived tussock grassland of the central western plains and lower slopes of NSW located on south side of road
    c. PCT 267 White Box - White Cypress Pine - Western Grey Box shrub/grass/forb woodland in the NSW South Western Slopes Bioregion
2. Hollow-bearing trees
3. Rocky outcrop
4. Road reserve

The areas of moderate constraints were:

1. PCT 250 Derived tussock grassland of the central western plains and lower slopes of NSW located on north side of road
2. Nest trees
3. Dams

The areas of low constraints were:

1. Non-native pasture
2. Transmission line

3. PCT 45 Plains Grass grassland on alluvial mainly clay soils in the Riverina Bioregion and NSW South Western Slopes Bioregion

From the site assessment further no threatened flora and fauna were observed but a Biodiversity Development Assessment Report requires further surveys for candidate species under the BAM to determine the potential presence or absence.

The BDAR will further assess the Serious and Irreversible Impact (SAII) listed entities including White Box Yellow Box Blakely's Red Gum Woodland and the Regent Honeyeater.

The number of required BAM plots for each PCT includes:

1. 1 plot for PCT 76 (0.29 ha)
2. 4 plots for PCT 250 (44.72ha)
3. 3 plots for PCT 267 (17.46 ha)

A Land Category Assessment was completed to distinguish Category 1- exempt land and Category 2 regulated land (NGH, 2021).

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APPENDIX A CREDIT SUMMARY REPORT

Biodiversity payment summary report

Assessment Id	Payment data version	Assessment Revision	Report created
00023371/BAAS19031/20/00023372		0	16/12/2020

Assessor Name	Assessor Number	Proposal Name	BAM Case Status
Kirsten Marie Vine	BAAS19031	20-805 Peninsula SF	Open

Assessment Type	Date Finalised
Part 5 Activities	To be finalised

PCT list

Price calculated	PCT common name	Credits
Yes	**76 -** Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions	2231
Yes	**267 -** White Box - White Cypress Pine - Western Grey Box shrub/grass/forb woodland in the NSW South Western Slopes Bioregion	2422
Yes	**250 -** Derived tussock grassland of the central western plains and lower slopes of NSW	1112

Species list

Price calculated	Species	Credits
Yes	***Aprasia parapulchella*** (Pink-tailed Legless Lizard)	264
Yes	***Lophochroa leadbeateri*** (Major Mitchell's Cockatoo)	264
Yes	***Calyptorhynchus lathami*** (Glossy Black-Cockatoo)	264

Yes	***Diuris tricolor*** (Pine Donkey Orchid)	199
Yes	***Eleocharis obicis*** (Spike-Rush)	264
Yes	***Lepidium aschersonii*** (Spiny Peppercress)	264
Yes	***Petaurus norfolcensis*** (Squirrel Glider)	264
Yes	***Phascolarctos cinereus*** (Koala)	264
Yes	***Polytelis swainsonii*** (Superb Parrot)	264
Yes	***Swainsona murrayana*** (Slender Darling Pea)	264
Yes	***Swainsona recta*** (Small Purple-pea)	264
Yes	***Swainsona sericea*** (Silky Swainson-pea)	264
Yes	***Anthochaera phrygia*** (Regent Honeyeater)	396
Yes	***Acacia ausfeldii*** (Ausfeld's Wattle)	264
Yes	***Crinia sloanei*** (Sloane's Froglet)	199
Yes	***Haliaeetus leucogaster*** (White-bellied Sea-Eagle)	264

Ecosystem credits for plant communities types (PCT), ecological communities & threatened species habitat

Biodiversity payment summary report

IBRA sub region	PCT common name	Threat status	Offset trading group	Risk premium	Administrative cost	Methodology adjustment factor	Price per credit	No. of ecosystem credits	Final credits price
Lower Slopes	**76 -** Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions	Yes	Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions	15.97%	$137.47	1.9760	$4,123.14	2231	$ 9,198,731.00
Lower Slopes	**267 -** White Box - White Cypress Pine - Western Grey Box shrub/grass/forb woodland in the NSW South Western Slopes Bioregion	Yes	White Box Yellow Box Blakely's Red Gum Woodland	15.97%	$284.50	2.1064	$8,532.95	2422	$ 20,666,813.94
Lower Slopes	**250 -** Derived tussock grassland of the central western plains and lower slopes of NSW	Yes	White Box Yellow Box Blakely's Red Gum Woodland	15.97%	$284.50	2.1064	$8,532.95	1112	$ 9,488,644.55

Subtotal (excl. GST) **$39,354,189.49**

GST **$3,935,418.95**

Biodiversity payment summary report

Total ecosystem credits (incl. GST) **$43,289,608.44**

Species credits for threatened species

Species profile ID	Species	Threat status	Price per credit	Risk premium	Administrative cost	No. of species credits	Final credits price
10061	***Aprasia parapulchella*** (Pink-tailed Legless Lizard)	Vulnerable	$463.67	20.6900%	$80.00	264	$168,855.28
10116	***Lophochroa leadbeateri*** (Major Mitchell's Cockatoo)	Vulnerable	$463.67	20.6900%	$80.00	264	$168,855.28
10140	***Calyptorhynchus lathami*** (Glossy Black-Cockatoo)	Vulnerable	$463.67	20.6900%	$80.00	264	$168,855.28
10243	***Diuris tricolor*** (Pine Donkey Orchid)	Vulnerable	$158.64	20.6900%	$80.00	199	$54,021.06
10264	***Eleocharis obicis*** (Spike-Rush)	Vulnerable	$158.64	20.6900%	$80.00	264	$71,666.13
10461	***Lepidium aschersonii*** (Spiny Peppercress)	Vulnerable	$17.30	20.6900%	$80.00	264	$26,632.15
10604	***Petaurus norfolcensis*** (Squirrel Glider)	Vulnerable	$495.24	20.6900%	$80.00	264	$178,914.16
10616	***Phascolarctos cinereus*** (Koala)	Vulnerable	$495.24	20.6900%	$80.00	264	$178,914.16
10645	***Polytelis swainsonii*** (Superb Parrot)	Vulnerable	$741.31	20.6900%	$80.00	264	$257,317.38
10779	***Swainsona murrayana*** (Slender Darling Pea)	Vulnerable	$173.02	20.6900%	$80.00	264	$76,247.91
10782	***Swainsona recta*** (Small Purple-pea)	Endangered	$865.08	20.6900%	$80.00	264	$296,753.17

Biodiversity payment summary report

10783	***Swainsona sericea*** (Silky Swainson-pea)	Vulnerable	$158.64	20.6900%	$80.00	264	$71,666.13
10841	***Anthochaera phrygia*** (Regent Honeyeater)	Critically Endangered	$432.54	20.6900%	$80.00	396	$238,404.88
20061	***Acacia ausfeldii*** (Ausfeld's Wattle)	Vulnerable	$54.59	20.6900%	$80.00	264	$38,513.55
20088	***Crinia sloanei*** (Sloane's Froglet)	Vulnerable	$463.67	20.6900%	$80.00	199	$127,281.06
20322	***Haliaeetus leucogaster*** (White-bellied Sea-Eagle)	Vulnerable	$173.02	20.6900%	$80.00	264	$76,247.91

Subtotal (excl. GST)	**$2,199,145.49**
GST	**$219,914.55**
Total species credits (incl. GST)	**$2,419,060.04**
Grand total	**$45,708,668.48**

APPENDIX B BIONET SEARCH RESULTS

Kingdom	Class	Scientific Name	Common Name	BC Status	EPBC Status
Fauna	Aves	*Neophema pulchella*	Turquoise Parrot	V, P,3	
Fauna	Aves	*Polytelis swainsonii*	Superb Parrot	V, P,3	V
Fauna	Mammalia	*Petaurus norfolcensis*	Squirrel Glider	V, P	
Fauna	Aves	*Chthonicola sagittata*	Speckled Warbler	V, P	
Fauna	Aves	*Petroica boodang*	Scarlet Robin	V, P	
Fauna	Mammalia	*Phascolarctos cinereus*	Koala	V, P	V
Fauna	Aves	*Pomatostomus temporalis temporalis*	Grey-crowned Babbler (eastern subspecies)	V, P	
Fauna	Aves	*Petroica phoenicea*	Flame Robin	V, P	
Fauna	Aves	*Artamus cyanopterus cyanopterus*	Dusky Woodswallow	V, P	
Fauna	Aves	*Climacteris picumnus victoriae*	Brown Treecreeper (eastern subspecies)	V, P	
Flora	Flora	*Austrostipa wakoolica*	A spear-grass	E1	E

APPENDIX C MATTERS OF NATIONAL SIGNIFICANCE RESULTS

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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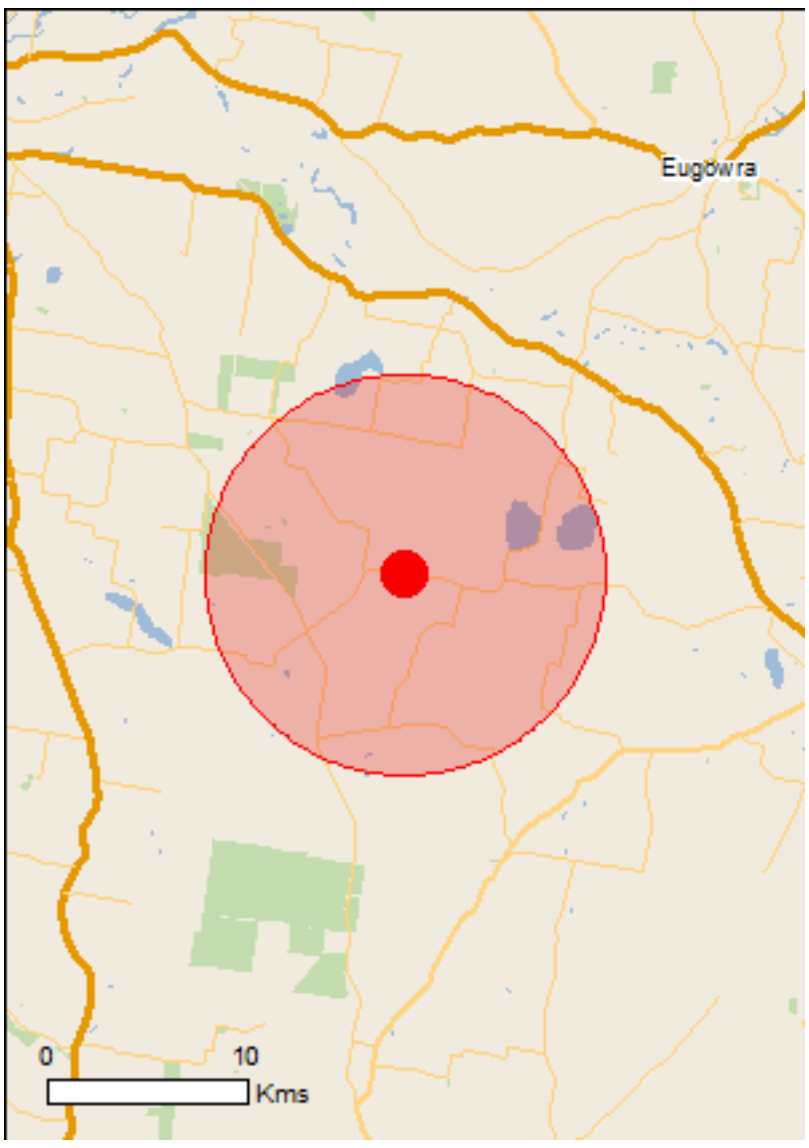

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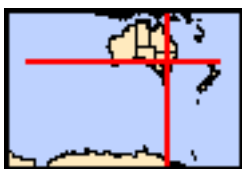

Summary

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:	4
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	4
Listed Threatened Species:	22
Listed Migratory Species:	12

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:	19
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:	None
Regional Forest Agreements:	None
Invasive Species:	23
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar)	[Resource Information]
Name	Proximity
Banrock station wetland complex	700 - 800km upstream
Hattah-kulkyne lakes	500 - 600km upstream
Riverland	600 - 700km upstream
The coorong, and lakes alexandrina and albert wetland	800 - 900km 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
Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia	Endangered	Community likely to occur within area
Poplar Box Grassy Woodland on Alluvial Plains	Endangered	Community likely to occur within area
Weeping Myall Woodlands	Endangered	Community likely to 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	Foraging, feeding or related behaviour may occur within area
Botaurus poiciloptilus		
Australasian Bittern [1001]	Endangered	Species or species habitat may 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 likely to occur within area
Hirundapus caudacutus		
White-throated Needletail [682]	Vulnerable	Species or species habitat may 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 known to occur within area
Rostratula australis		
Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Fish		
Maccullochella peelii		
Murray Cod [66633]	Vulnerable	Species or species habitat likely to occur within area
Macquaria australasica		
Macquarie Perch [66632]	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 may 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 may 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
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
Pteropus poliocephalus		
Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour may occur within area
Plants		
Austrostipa metatoris		
[66704]	Vulnerable	Species or species habitat may occur within area
Austrostipa wakoolica		
[66623]	Endangered	Species or species habitat known to 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 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		

Name	Threatened	Type of Presence
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	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 may occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat may 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
Pandion haliaetus Osprey [952]		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 alba Great Egret, White Egret [59541]		Species or species habitat likely to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
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 likely 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 likely to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat may 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 may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Species or species habitat may occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat may occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat likely to occur within area

Extra Information

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		
Alauda arvensis Skylark [656]		Species or species habitat likely to occur within area
Anas platyrhynchos Mallard [974]		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
Passer montanus Eurasian Tree Sparrow [406]		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
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

Name	Status	Type of Presence
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		
Asparagus asparagoides Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]		Species or species habitat likely to occur within area
Cytisus scoparius Broom, English Broom, Scotch Broom, Common Broom, Scottish Broom, Spanish Broom [5934]		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
Rubus fruticosus aggregate Blackberry, European Blackberry [68406]		Species or species habitat likely to occur within area

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

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.

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

Where very little information is available for species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc). In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

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

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

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

Coordinates

-33.58014 148.23109

Acknowledgements

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

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

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

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

Department of Agriculture Water and the Environment
GPO Box 858
Canberra City ACT 2601 Australia
+61 2 6274 1111

APPENDIX D (Cont.) LAND CATEGORY ASSESSMENT

LAND CATEGORY ASSESSMENT

Peninsula Solar Farm

February 2021

Project Number: 20-805

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DOCUMENT VERIFICATION

Project Title:	Peninsula Solar Farm
Project Number:	20-805
Project File Name:	20-805 Land Category Assessment Final V1.0

Revision	Date	Prepared by	Reviewed by	Approved by
Draft V.1	09/02/2021	C. Vincent	J. Gooding	N. Smith
Final V.1.	16/02/2021	C. Vincent	J. Gooding	N. Smith

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W. www.nghconsulting.com.au

E. ngh@nghconsulting.com.au

BEGA - ACT & SOUTH EAST NSW
Suite 11, 89-91 Auckland Street
(PO Box 470) Bega NSW 2550
T. (02) 6492 8333

NEWCASTLE - HUNTER & NORTH COAST
Unit 2, 54 Hudson Street
Hamilton NSW 2303
T. (02) 4929 2301

BRISBANE
Suite 4, Level 5, 87 Wickham Terrace
Spring Hill QLD 4000
T. (07) 3129 7633

SYDNEY REGION
Unit 18, Level 3, 21 Mary Street
Surry Hills NSW 2010
T. (02) 8202 8333

CANBERRA - NSW SE & ACT
Unit 8, 27 Yallourn Street
(PO Box 62) Fyshwick ACT 2609
T. (02) 6280 5053

WAGGA WAGGA - RIVERINA & WESTERN NSW
35 Kincaid Street (PO Box 5464)
Wagga Wagga NSW 2650
T. (02) 6971 9696

GOLD COAST
19a Philippine Parade
(PO Box 466 Palm Beach QLD 4221)
Tugun QLD 4224 **T.** (07) 3129 7633

WODONGA
Unit 2, 83 Hume Street
(PO Box 506) Wodonga VIC 3690
T. (02) 6067 2533

NSW • ACT • QLD • VIC
W. www.nghconsulting.com.au
ABN 31 124 444 622 ACN 124 444 622

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1. LAND CATEGORY ASSESSMENT

NGH were engaged by Edify Energy to prepare a Land Category Assessment (LCA) for the proposed Peninsula Solar Farm located approximately 30km south east of Forbes, NSW.

Section 6.8(3) of the Biodiversity Conservation Act 2016 determines that the Biodiversity Assessment Method (BAM) is to exclude the assessment of the impacts of clearing of native vegetation on Category 1-exempt land (within the meaning of Part 5A of the Local Land Services Act 2013). Boundaries mapping Category 1-exempt land on the Native Vegetation Regulatory Mapping are not yet publicly available. During the transitional period, accredited assessors may establish the categorisation of land for the agency head to consider, following the method utilised to develop the Native Vegetation Regulatory Map.

Category 1-exempt land is defined under the LLS act as;

- Land cleared of native vegetation as at 1 January 1990 or lawfully cleared after 1 January 1990.
- Low Conservation Grasslands (following commencement of the new framework on 25th August 2017
- Land (not being grasslands) containing only low conservation groundcover (following commencement of the new framework on 25th August 2017)
- Native vegetation identified as regrowth in a Property Vegetation Plan under the repealed Native Vegetation Act 2003
- Land biodiversity certified under the Biodiversity Conservation Act 2016.

Category 2 – Regulated Land is defined as:

- Land **not** cleared as at 1st January 1990 or unlawfully cleared after 1st January 1990;
- Native vegetation grown with the assistance of public funds;
- Land that is (or was previously) subject to a Private Native Forestry Plan or Private Native Forestry PVP;
- Grasslands that are neither low nor high conservation grasslands;
- Travelling stock reserves;

Additionally, two subcategories of Category 2 – Regulated Land are also relevant and include;

- *Category 2 Vulnerable Regulated Land*
    - Steep or highly erodible land;
    - Protected riparian areas;
    - Land susceptible to erosion, or land that is otherwise environmentally sensitive.
- *Category 2 Sensitive Regulated Land*
    - Land subject to a private land conservation agreement;
    - A set aside under the Land Management Code;
    - Land subject to a bio-certification conservation measure;
    - Land comprising an offset under a Property Vegetation Plan or set aside under a code under the *Native Vegetation Act 2003;*
    - Coastal wetlands and littoral rainforests *(Coastal Management Act 2016);*
    - High conservation grasslands;

This letter report establishes the methodology, results and conclusions to evaluate the land categorisation for the development site. It is anticipated that the Department of Planning, Industry and Environment (DPIE) (Biodiversity and Conservation Division) would support this approach and provide endorsement for the land categorisation of the development site for Peninsula Solar Farm.

1.1. Methodology

A desktop assessment, literature review of previous studies and field observations was undertaken over the development site to determine the ecological constraints and native vegetation communities on site early on in the project development, prior to detailed site investigations. A precautionary approach was used when identifying Category 2- Regulated Land. Where data was conflicting, land will be mapped as Category 2.

1.1.1. Desktop Assessment

A desktop assessment of the development site as Category 1 – exempt and Category 2 – regulated land was undertaken using the following data sources at a minimum and assessed in the listed order:

- 2017 Land Use Dataset (Australian Land Use and Management (ALUM) Classification version 7 (Office of Environment and Heritage (OEH) 2017).
- NSW Woody Vegetation extent and Foliage Projective Cover (FPC) 2011 (OEH 2015).
- Sensitive regulated and vulnerable lands on the Native Vegetation Regulatory Map Portal (LLS 2020).
- Aerial imagery of historical land use (sourced from spatial data services; DSFI 2020).
- Relevant State Vegetation Mapping (OEH).

1.1.2. Site Assessment

A site assessment was conducted by a BAM accredited assessor between the 10th of December 2020. The site assessment included assessment and classification of Plant Community Types (PCTs), vegetation condition and ground-truthing of vegetation mapping (refer to Appendix A.5). The Project site is classified as the following PCTs:

- PCT 250 – Derived Tussock Grassland
- PCT 267 – White Box – White Cypress Pine – Western Grey Box Shrub/grass/forb Woodland
- PCT 76 – Western Grey Box Tall Grassy Woodland

1.2. Results

The analysis of the above sources, in conjunction with historical aerial imagery, demonstrates evidence of broad vegetation modification resulting from agricultural land use within the Project site prior to and post 1990. The following table (Table 1-1) demonstrates how the above mentioned layers were used in determining land category.

Table 1-1 Summary of data sources and interpretation.

Data Sources	Category 1 – Exempt Land	Category 2– Regulated Land	Excluded Land
2017 Land Use Dataset	• Mapped as the following: ○ grazing modified pastures ○ cropping	• Woody vegetation present. • Grazing native vegetation. • Grazing modified pastures (Some areas).	N/A
NSW Woody vegetation extent, 2011 (A.2)	• **No** areas of woody vegetation regrowth that has occurred post 1990 following previous clearing events.	• Woody vegetation present as at 1990 inclusive of paddock trees.	N/A

Data Sources	Category 1 – Exempt Land	Category 2– Regulated Land	Excluded Land
1989 aerial imagery (A.3)	• Clear evidence of cropping and grazing. • Clear evidence of significant groundcover modification.	• Woody vegetation present at 1990 demonstrated within woody vegetation extent layer.	N/A
1993 aerial imagery (A.4)	• Clear evidence of cropping and grazing. • Clear evidence of significant groundcover modification.	• Woody vegetation present at 1990 demonstrated within woody vegetation extent layer.	N/A
Plant Community Types (NGH), Appendix A.5	• Cropped areas. • PCT 250 Derived Tussock Grassland (poor condition).	• PCT 250 Derived Tussock Grassland (moderate/high condition). • PCT267 White Box – Cypress Pine – Western Grey Box Shrubland/gras/forb Woodland. • PCT 76 Western Grey Box Tall Grassy Woodland. • Woody vegetation present at 1990 demonstrated within woody vegetation extent layer.	N/A
Native Regulatory Map, 2017 • **Sensitive regulated land** • **Vulnerable regulated land**	N/A	A small section of Lot 9 within the proposal area has Sensitive regulated land mapped (Land comprising an offset under a Property Vegetation Plan (PVP).	N/A

In summary, the analyses of the above sources identified the following:

- The entire proposal area is zoned as Primary Production - RU1 (Appendix A.7).
- There is evidence of continued cropping in most of the PCT 250 (poor condition) area. This is evident in the 1989 and 1993 historical imagery and current satellite imagery. This is mapped as Category 1 - exempt land. The scattered trees here have been mapped as Category 2 – regulated land.
- Some of the land that has been mapped under 2017 landuse dataset as grazing modified pastures (in northern and southern section of the project site) has proof of cropping since pre 1990 (using 1989 and 1993 aerial imagery, though not in more recent imagery). This is mapped as Category 1- exempt land (except for the scattered trees, which are mapped as Category 2 - regulated land and a small section in the south east that was ground truthed and found to meet EPBC listing (PCT 250).
- Some of the land that has been mapped under 2017 landuse dataset as grazing modified pastures (in south eastern section of the project site) is inconclusive to determine if groundcover had been disturbed pre-1990. From 1989 and 1993 historical imagery, and current satellite mapping this area appears to be continuously grazed but there is no clear evidence of ground disturbance. Native

grasses are currently present in this area. As a precautionary approach this area has been mapped as Category 2 – regulated land.

- Areas that are part of PCT 267 White Box – Cypress Pine – Western Grey Box Shrub/grass/forb Woodland are mapped as Category 2 – regulated land.
- The woody vegetation extent mapping shows many scattered trees throughout the site. The scattered trees are mapped as Category 2 - regulated land.
- A small portion of Lot 9 in the south eastern section (within the proposal area) comprises an offset under a PVP. This area has been mapped as Category 2 sensitive regulated land (Appendix A.1).
- The remaining area of Lot 9 (within the proposal area) has been mapped as cropped under the 2017 landuse dataset. The use of land as cropped is evident in both the 1989 and 1993 historical imagery. Further clearing can be seen in current imagery. This further clearing (of scattered trees) was legal under a PVP. This area has been mapped as Category 1 – exempt land.
- A determining feature of agricultural use is a lack of woody vegetation regrowth in the majority of the site, as represented in the aerial imagery (1989, 1993 and current) and field observations (Appendix A.1,A.3 and A.4).
- The 2011 Woody Vegetation extent identifies scattered paddock trees. From 1989 and 1993 historical imagery and current imagery there appears to be no clearing of these (except where there is a PVP in place). These have been mapped as Category 2 - regulated land (except the PVP area).
- Field surveys were conducted on 10th December 2020.

1.3. Conclusion

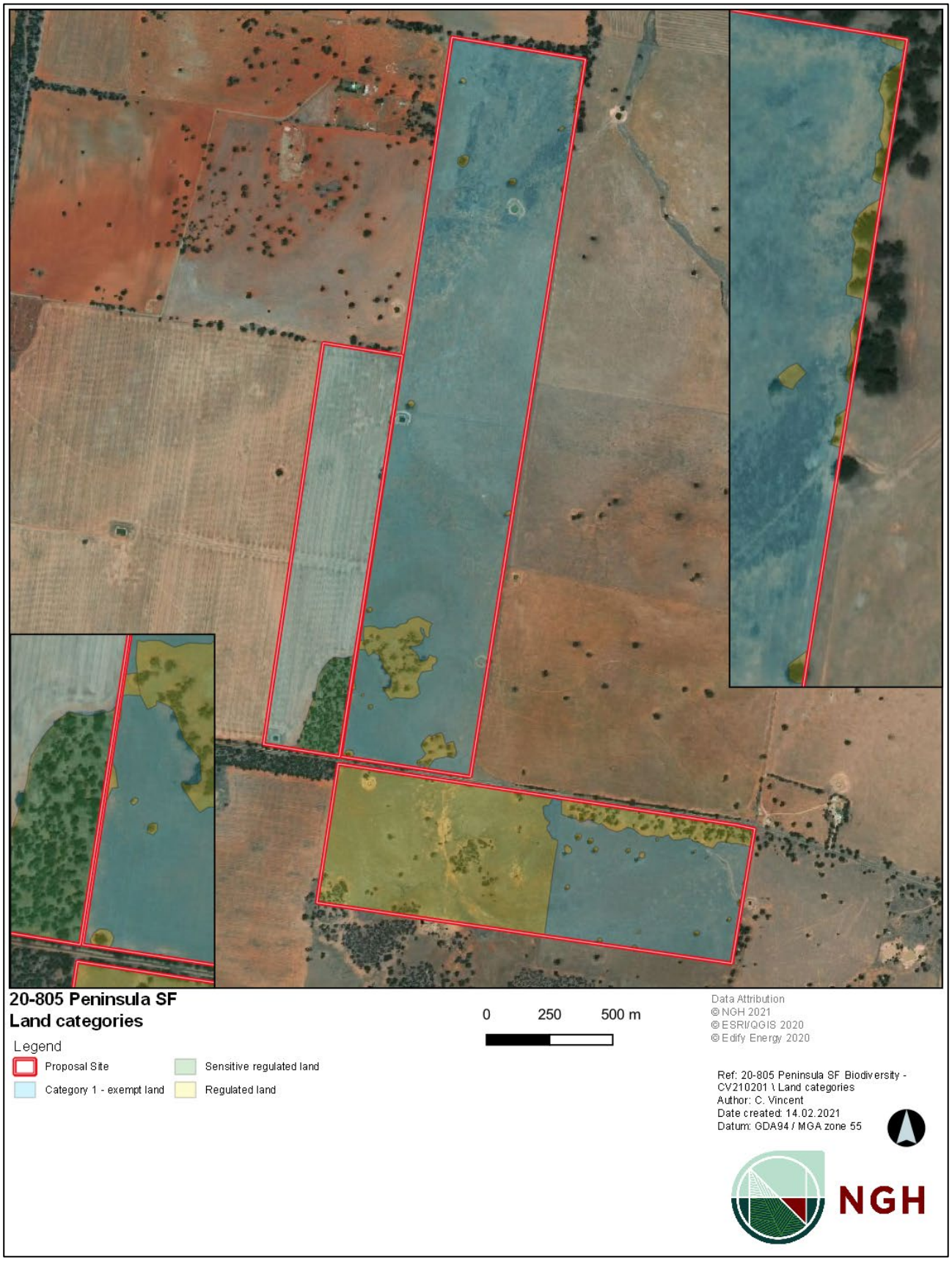
Based on the above data sources, there is evidence to suggest that large portions of the proposal area had largely been used for grazing and cropping pre-1990. This is supported by recent imagery, 1989 and 1993 aerial imagery, field surveys, landuse datasets, woody vegetation extent datasets, and land zoning mapping data. Except for a small section in the south east that was ground truthed and found to meet EPBC listing (PCT 250) these areas have been mapped as Category 1 – Exempt Land.

Areas of woody vegetation and scattered paddock trees have been mapped as Category 2 – regulated land. Some grassland areas mapped as ‘grazing modified pastures’ in the 2017 land use dataset with no clear evidence of historic ground disturbance have been mapped as Category 2 – regulated land as a precautionary approach.

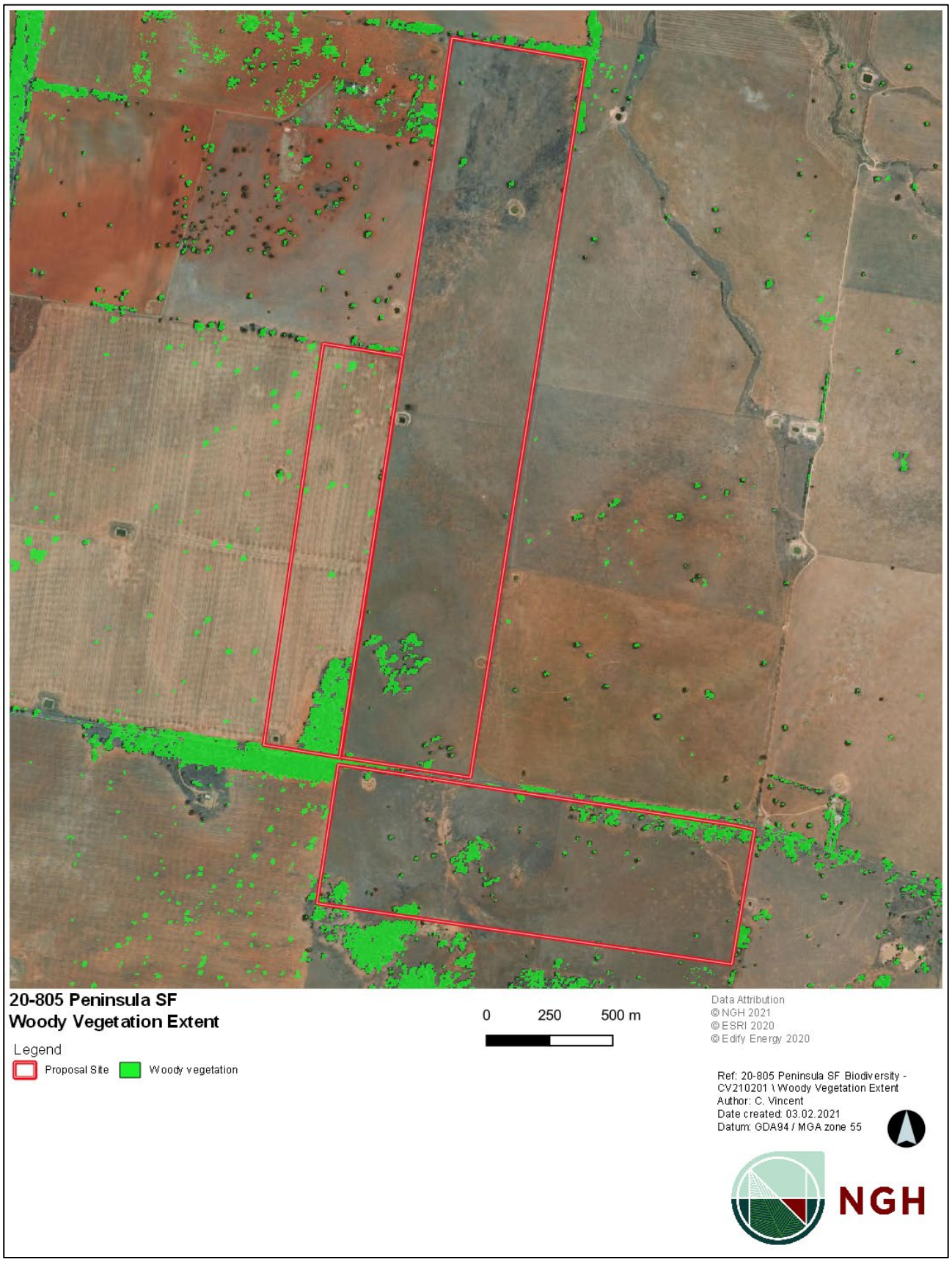
Based on our assessment, a draft map of areas considered to be Category 1 – Exempt Land and Category 2 – Regulated Land has been produced (AppendixA.1). The relevant datasets used in the assessment are following in Appendix A.2 – Appendix A.9.

APPENDIX A LAND CATEGORY ASSESSMENT MAPPING

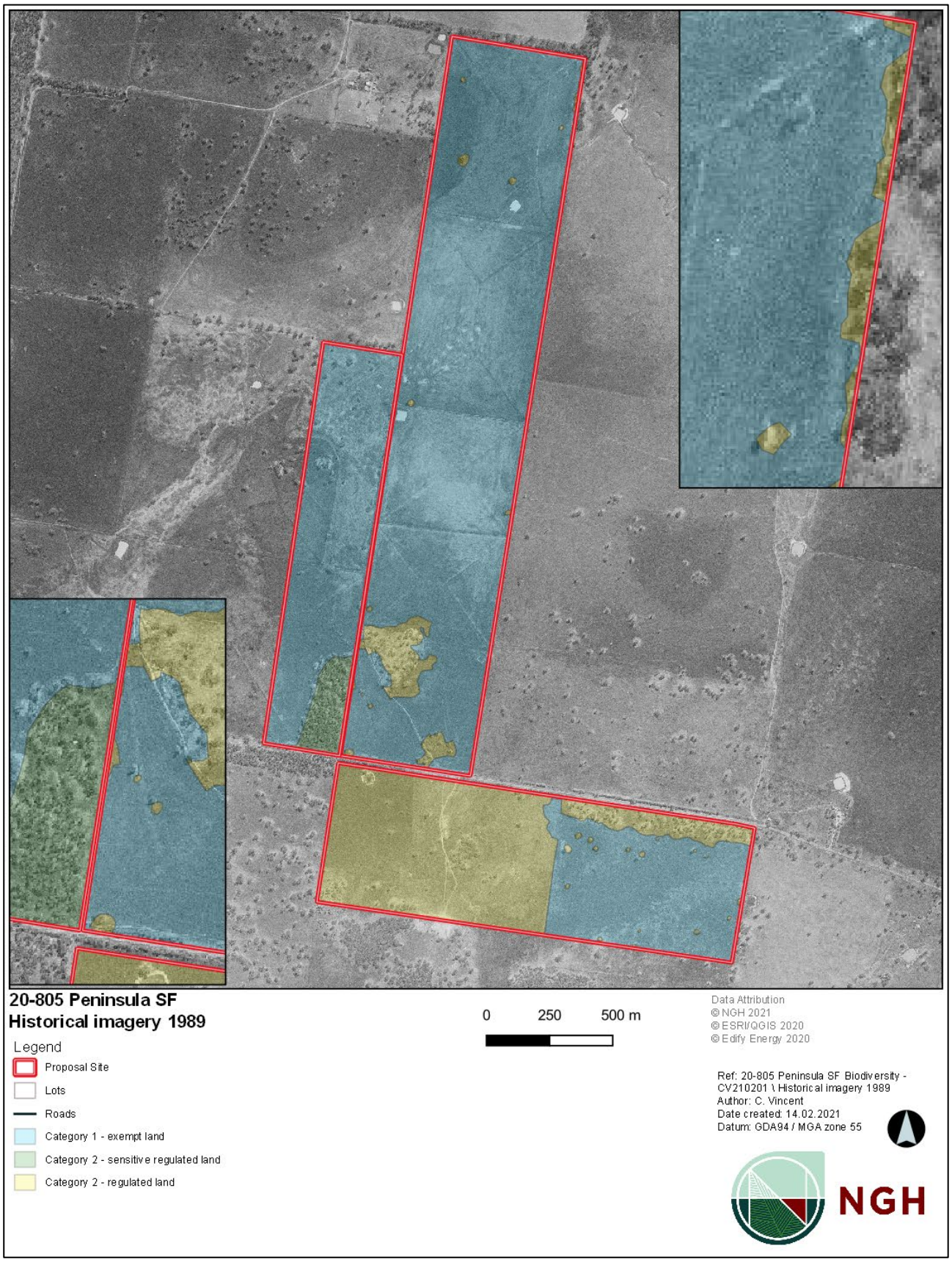
A.1 Development Site Overview and Land Categorisation



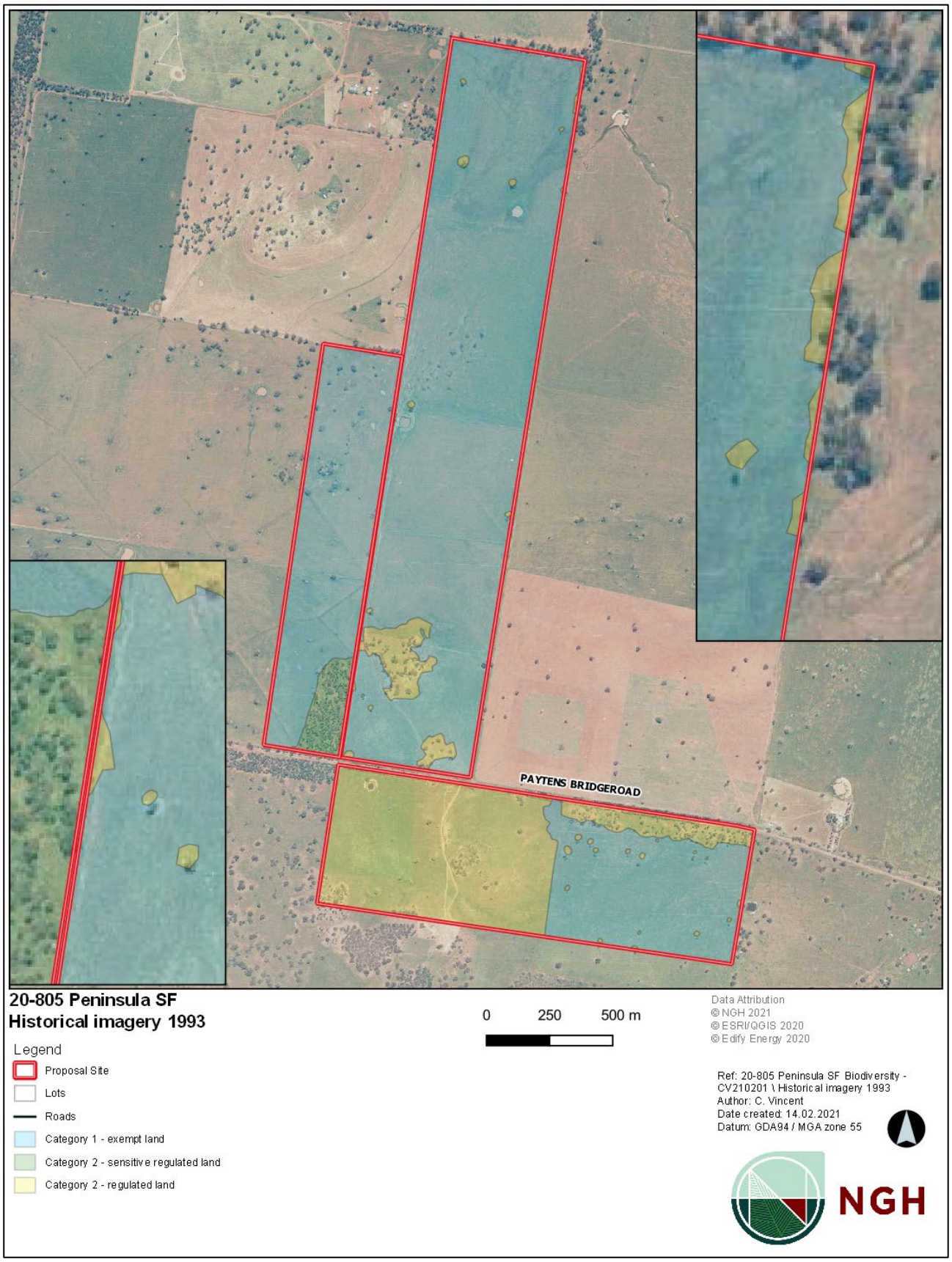
A.2 NSW Woody Vegetation Extent and FPC 2011



A.3 Aerial Imagery 1989 (Spatial Portal 2021)

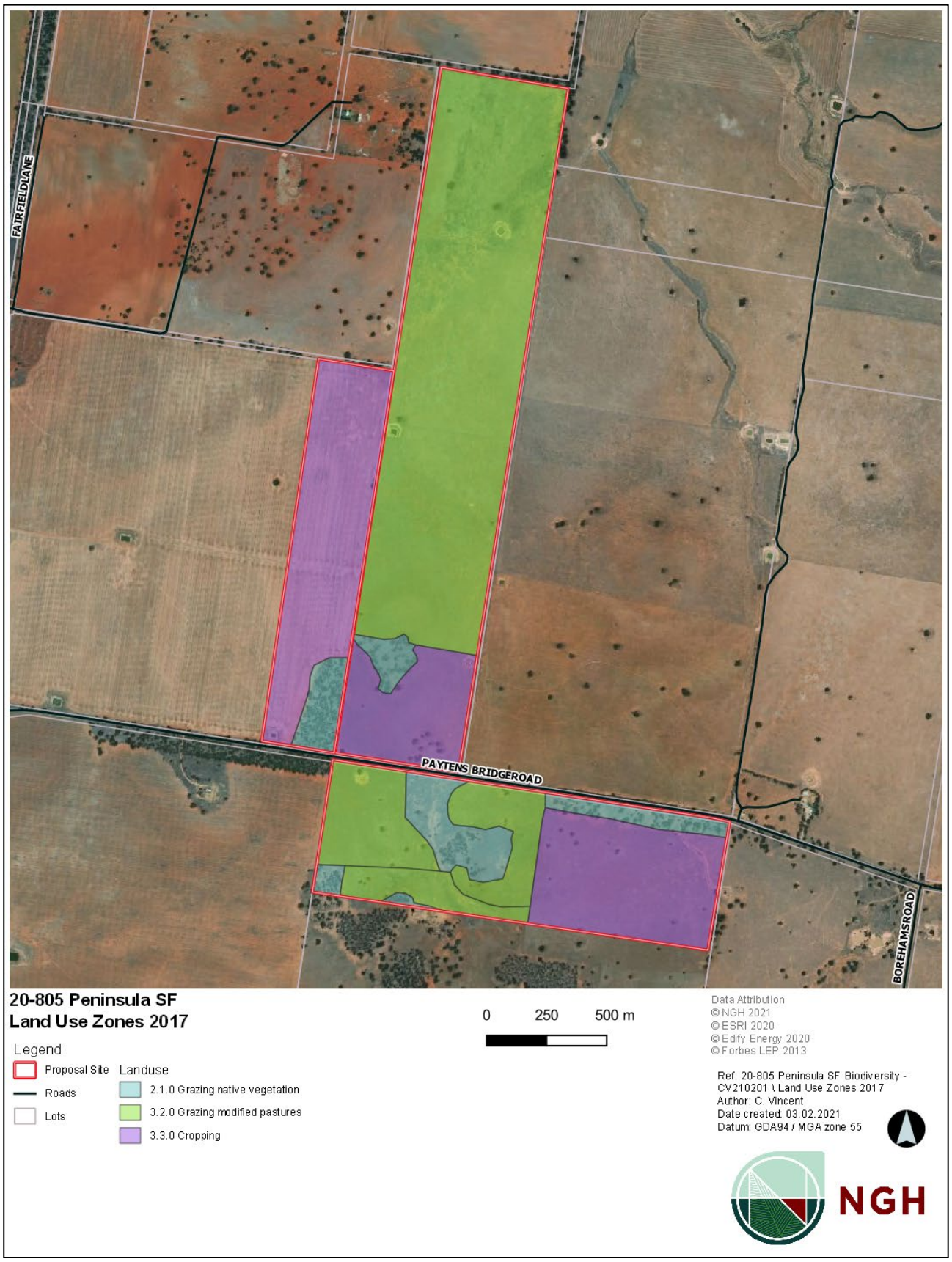


A.4 Aerial Imagery 1993 (Spatial Portal 2021)

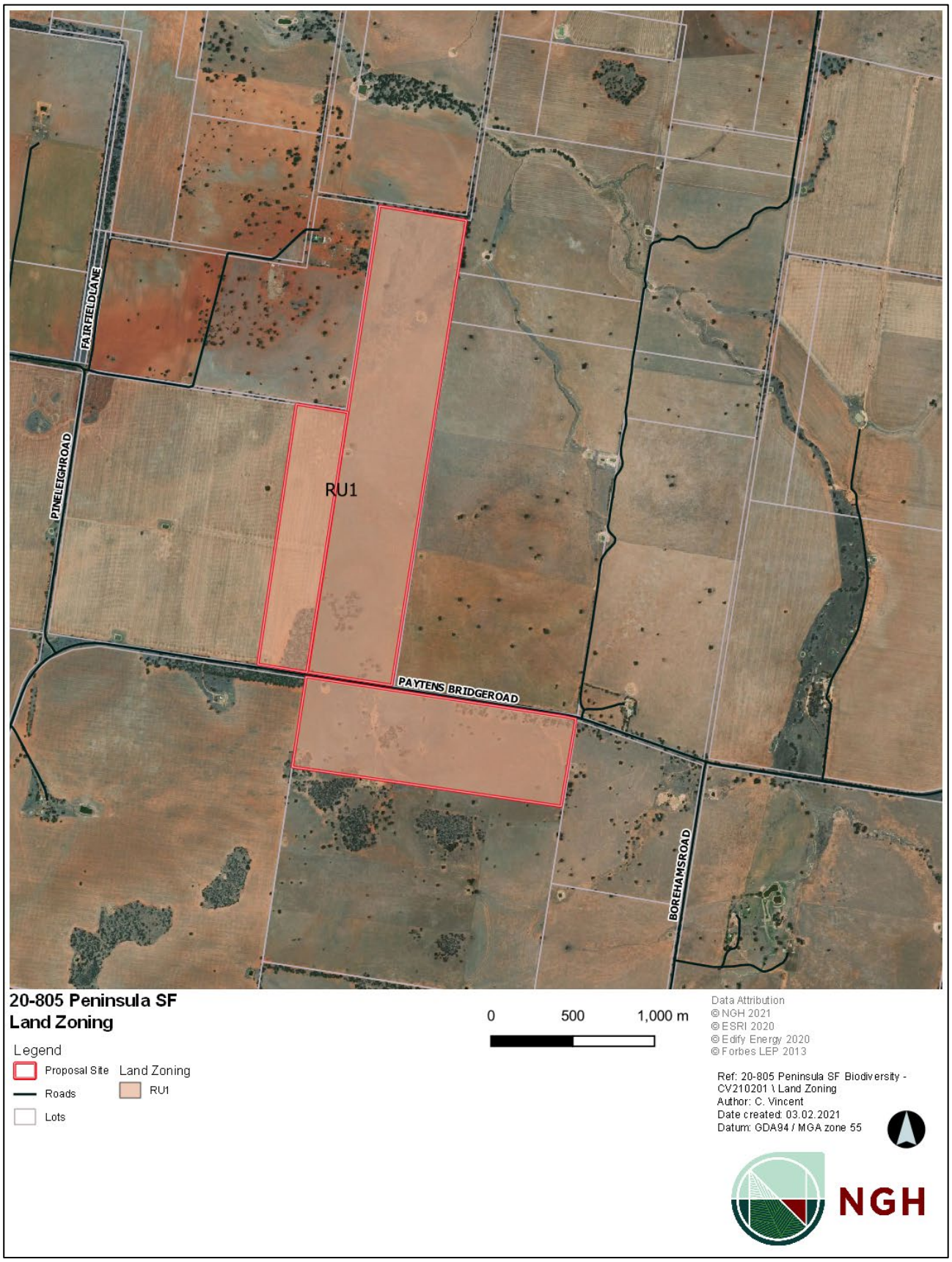


A.5 Plant Community Types (NGH 2020)

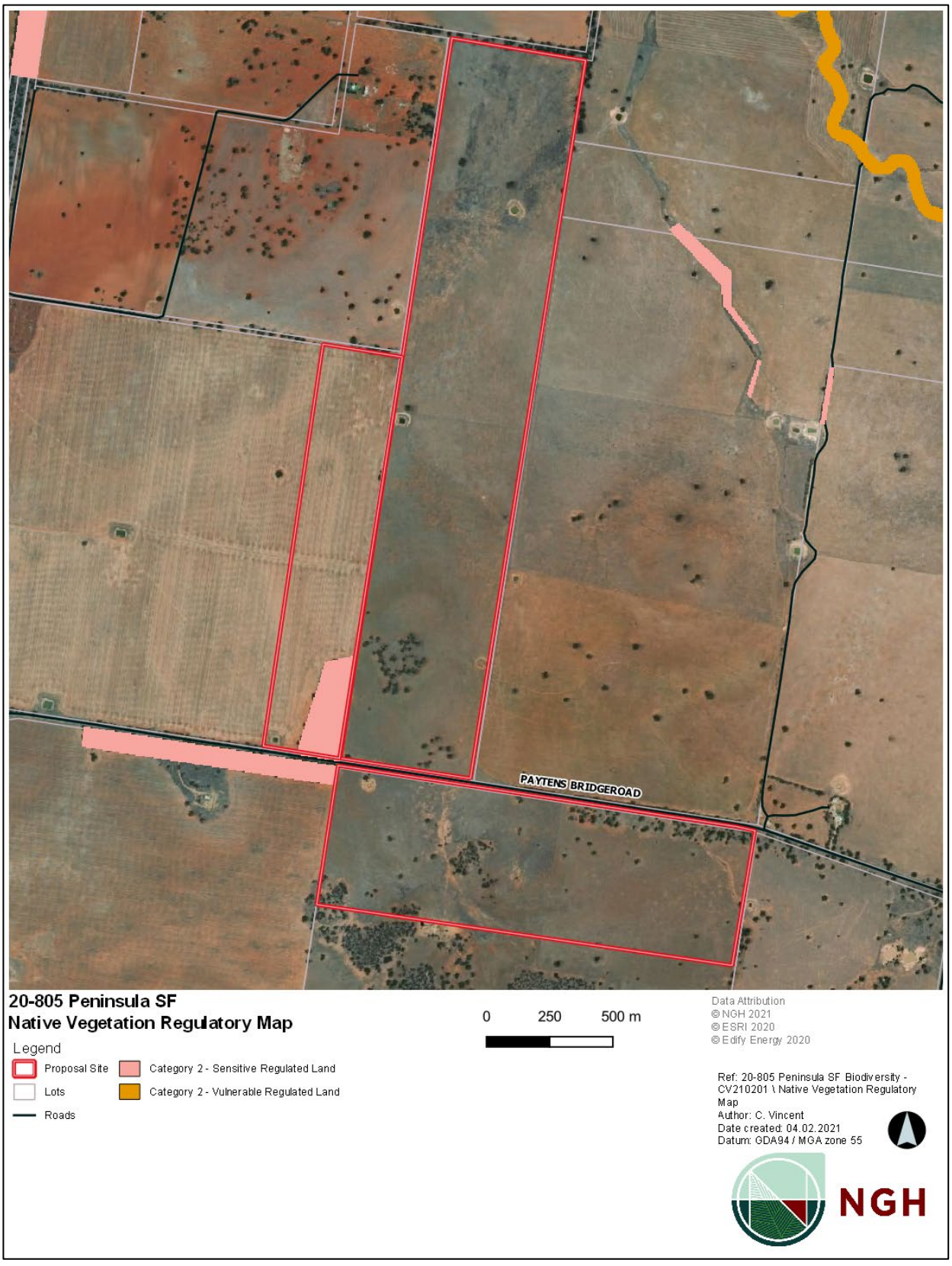
A.6 Landuse Dataset 2017



A.7 Land Zoning Forbes LEP 2013



A.8 Native Vegetation Regulatory Map



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