SCOPING REPORT

Lismore Battery Energy Storage System

July 2021

Project Number: 20-839

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ACRONYMS AND ABBREVIATIONS

ABS	Australian Bureau of Statistics
AC	Alternating Current
ACHA	Aboriginal Cultural Heritage Assessment
AGL	AGL Energy
AHIMS	Aboriginal Heritage Information Management System
ALUM	Australian Land Use and Management
AOBV	Areas of Outstanding Biodiversity Value
BAM	Biodiversity Assessment Method
BCD	Biodiversity Conservation Division
BDAR	Biodiversity Development Assessment Report
BESS	Battery Energy Storage System
BC Act 2016	NSW Biodiversity Conservation Act 2016
BOSS	Biodiversity Offsets Scheme
BSAL	Biophysical Strategic Agricultural Land
Category 1 Land	Category 1 – Exempt Land
Category 2 Land	Category 2 – Regulated Land
CIV	Capital investment value
DAWE	Commonwealth Department of Agriculture, Water and the Environment
DPIE	Department of Planning, Infrastructure and Environment
DC	Direct Current
EIS	Environmental Impact Statement
EMF	Electric and magnetic fields
EP&A Act	NSW Environmental Planning and Assessment Act 1979
EPBC Act	Commonwealth Environment Protection and Biodiversity Conservation Act 1999

ESD	Ecological sustainable development
ha	Hectare
Heritage Act	NSW Heritage Act 1977
GHG	Greenhouse gas
HIPAP 6	Hazardous Industry Planning Advisory Paper No. 6, 'Hazard Analysis'
IPC	Independent Planning Commission
ISEPP	State Environmental Planning Policy (Infrastructure) 2007
KFH	Key Fish Habitat
Koala SEPP 2020	State Environmental Planning Policy – (Koala Habitat Protection) 2020
km	kilometre
kV	kilovolt
LALC	Local Aboriginal Land Council
LEP	Local Environment Plan
LGA	Local Government Area
Lismore LEP 2012	Lismore Local Environment Plan 2012
LUCRA	Land Use Conflict Risk Assessment
NEM	national electricity market
NPW Act	NSW National Parks and Wildlife Act 1974
NT Act	NSW Native Title Act 1993
NVR Map	Native Vegetation Regulatory Map
Maoneng	Maoneng Australia Pty Ltd
m	metres
MLRA	Multi-level Risk Assessment
MNES	Matter of National Environmental Significance
MP	Member for Parliament
MW	Megawatt

MWh	MW hours
OSOM	Oversize and/or overmass
PCS	power conversion systems
PCT	Plant community types
PHA	preliminary hazard analysis
Primary Production and Rural Development SEPP	State Environmental Planning Policy (Primary Production and Rural Development) 2019
PMST	Protected Matters Search Tool
RNTBC	Registered Native Title Body Corporate
SEARs	Secretary's Environmental Assessment Requirements
SEPP 33	State Environmental Planning Policy No 33 – Hazard and Offensive Development
SSD	State Significant Development
State and Regional SEPP	State Environmental Planning Policy (State and Regional Development) 2011
TEC's	Threatened Ecological Communities
WM Act	NSW Water Management Act 2000

PURPOSE OF THE SCOPING REPORT

A Scoping Report is a publicly available document which provides preliminary information on a project and its potential impacts, used to support a request for Secretary's Environmental Assessment Requirements (SEARs) from the New South Wales Department of Planning, Industry and Environment (DPIE).

Scoping is the first phase in the environmental impact assessment of State Significant Development (SSD) projects. Scoping identifies the matters and impacts that are likely to be relevant and establishes terms of reference for the Environmental Impact Statement (EIS).

The scoping phase is critical to steering the remainder of EIA. When effectively carried out, scoping highlights the relevant matters and impacts to be considered in the EIS and the appropriate level of assessment to occur. It results in SEARs that provide clear direction to the proponent on what needs to be assessed, how it should be assessed and to what level of detail. This increases the likelihood of an adequately prepared EIS focussed on the relevant matters.

Feedback from the community and other stakeholders is important during the scoping phase in helping shape the project. The Scoping Report allows the community and stakeholders to see the preliminary details of the project, to enable them to give valuable feedback to shape the EIS assessments, the project design, the future community engagement, and the project as a whole.

1. INTRODUCTION

Maoneng Australia Pty Ltd (Maoneng) is proposing to construct and operate a standalone 100 Megawatt (MW)/ 200 Megawatt hour (MWh) Battery Energy Storage System (BESS) and associated ancillary infrastructure, approximately 12 km southwest of Lismore (the Proposal).

This Scoping Report has been prepared to support a request to the Department of Planning, Infrastructure and Environment (DPIE) for the Secretary's Environmental Assessment Requirements (SEARs) in relation to the Proposal. The SEARs would guide the preparation of an Environmental Impact Statement (EIS) for the Proposal, pursuant to Part 4 of the NSW Environmental Planning and Assessment Act 1979 (EP&A Act). An EIS is required as the proposal has a capital investment value exceeding $30 million and is therefore classed as State Significant Development.

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

The following terms are used throughout this Scoping Report:

- Proposal: the construction and operation of a standalone 100 MW/ 200 MWh BESS system and associated ancillary infrastructure.
- Subject Site: the land on which the Proposal would be constructed and operated, being 85 Auckram Road, Mckees Hill / Lot 235 DP755728 (approximately 28.6 hectares [ha]).
- Development Footprint: the maximum area within which infrastructure will be located for the construction and operation of the BESS system, including the access driveway and connection to the Lismore 330 kV substation and all environmental controls required to manage the works. This is approximately 3.6 ha in area. The actual footprint would be reduced following detailed design, as a maximum area of 2.0 ha has been incorporated for the transmission line connecting the project to the substation has been allowed, though the actual footprint of this connection would be approximately 0.6 ha..
- Study Area: the broader area considered by this preliminary assessment, incorporating a 20 m buffer from the Development Footprint and proposed site access route (approximately 16.3 ha in total). The proposed access route is included within the study area to account for any potential direct or indirect impacts.
- Proponent: Maoneng Australia Pty Ltd.

1.1. The Proponent

Maoneng Australia Pty Ltd is an Australian-founded and owned company with a portfolio of nearly 300 MW of constructed renewable power and is in the process of developing more than 600 MWh of utility-scale battery projects. Maoneng partners with Australia's largest utilities and organisations, including AGL Energy, to build and operate cutting-edge solar, battery and other utility-scale energy projects across the country.

Maoneng's Energy Storage Power Purchase Agreement with AGL Energy will provide 200MW/400MWh of dispatchable capacity to AGL in NSW between 2023 and 2038. This proposed Lismore BESS project will contribute a portion of that dispatchable capacity. Power generated under this agreement is capable of powering 30,000 homes at times of higher demand or low renewable energy supply.

2. THE PROPOSAL

2.1. Subject Site

The Subject Site for the Proposal is located at 85 Auckram Road, Mckees Hill NSW, and comprises a 28.6 ha land parcel (Lot 235 DP755728). The maximum Development Footprint (total area of ground disturbance) for the BESS and associated ancillary infrastructure would be approximately 3.6 ha. This includes the maximum impact area for the transmission line connection (approximately 2.0 ha) which will realistically be much less (approximately 0.6 ha) through detailed design.

Situated within the Lismore Local Government Area (LGA), the Subject Site is zoned as RU1 – Primary Production under the Lismore Local Environment Plan 2012 (Lismore LEP 2012). Land use at the Subject Site is predominantly agricultural, including cattle and horse grazing in paddocks. No residential dwellings occupy the Subject Site. The current landowner resides 300 m southeast of the disturbance footprint (Lot 31 DP719815). The proponent intends to lease the Development Footprint. A subdivision may be required and will be explored further as planning progresses.

To the immediate west, east and south of the Subject Site is agricultural land with attached homesteads, also zoned as RU1 – Primary Production. There are a total of 12 non-involved and one involved residences within 1 km of the Development Footprint and 32 non-involved and one involved residences within 1 km of the Study Area.

A few remnant trees exist on the Subject Site and most of the lot represents a highly modified landscape. Walshs Creek is located approximately 300 metres (m) to the south of the Subject Site.

The topography of the Subject Site is undulating, with higher points located in the south and southeast of the site. These slope across the site towards the site boundaries, decreasing in elevation by approximately 25 m from the highest areas on site. The northern portion of the site, where the development footprint is located, slopes to the northwest, with higher points to the south and east of the development footprint. These slopes decrease in elevation by approximately 5-6 m across the development footprint.

Main access is currently provided to the Subject Site from the Bruxner Highway to the north, to Fig Tree Lane, to Rogerson Road, to Cooper Road. Fig Tree Lane is located northwest of the site, and within Richmond Valley LGA. The nearest major townships are Lismore, located approximately 12 km to the northeast, and Casino, located approximately 13 km to the west.

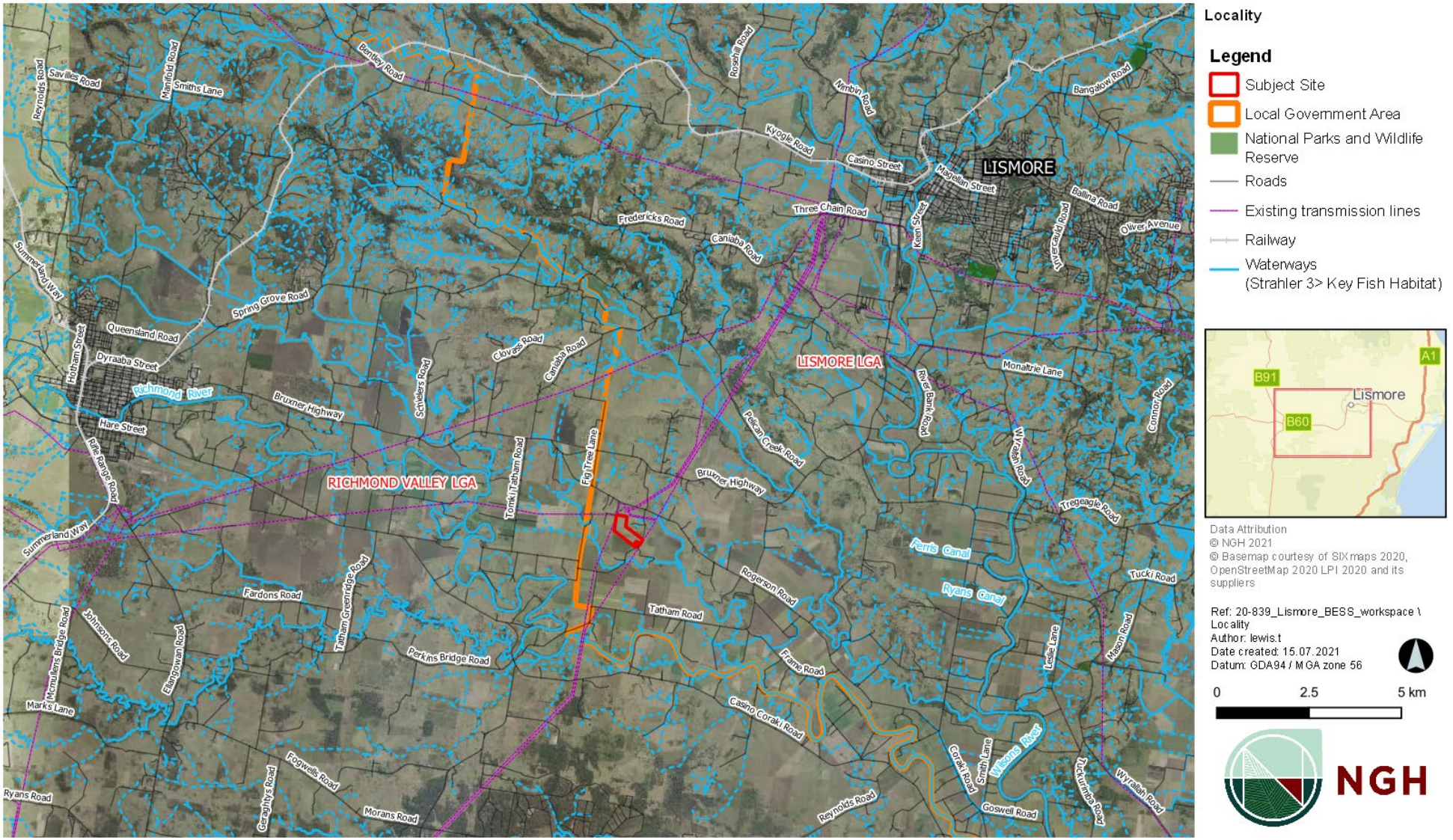

Figure 2-1 Locality

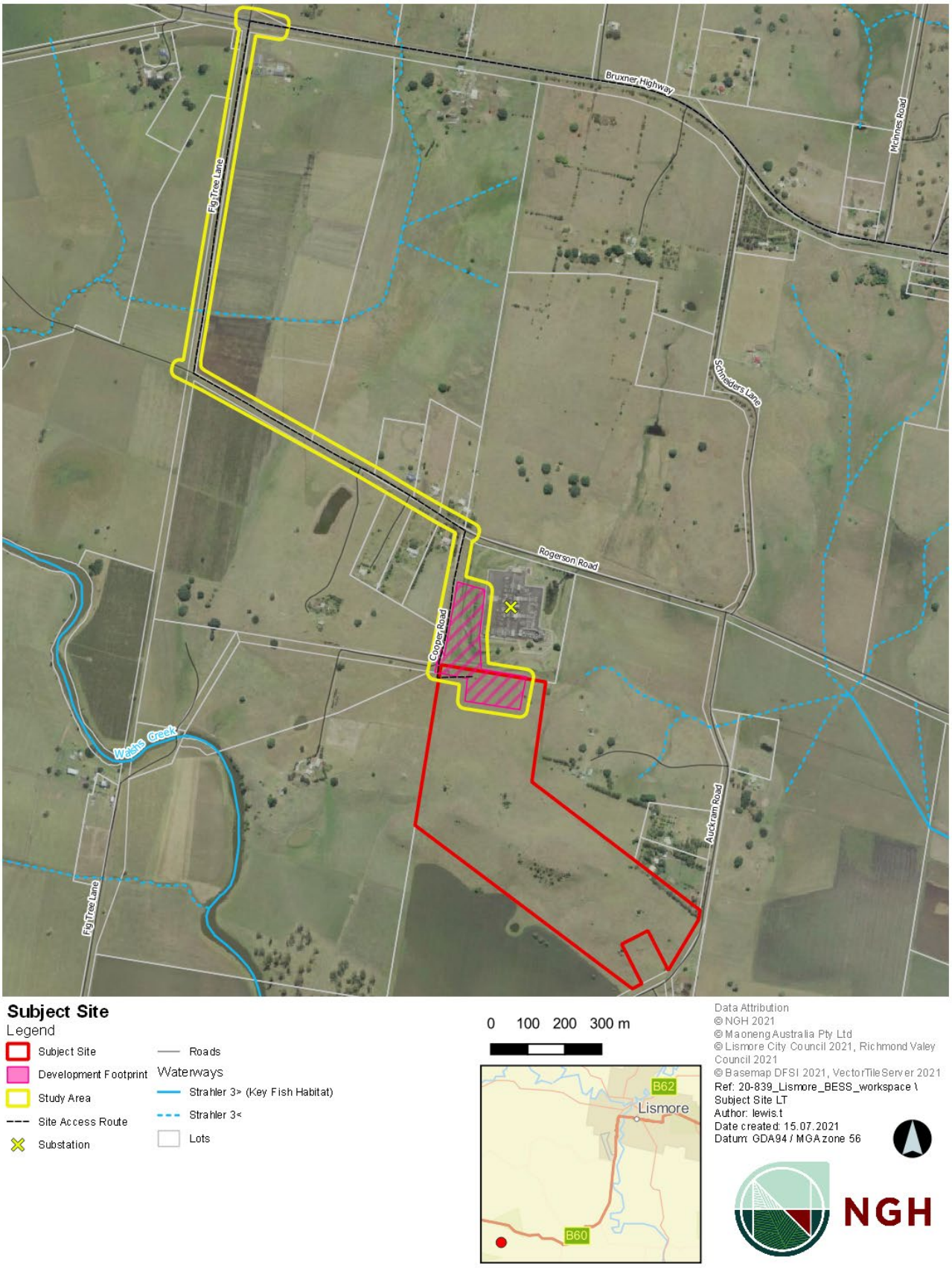

Figure 2-2 Subject Site; Lot 235 DP755728.

2.2. Proposal Description

The Proposal would involve the construction, operation and decommissioning of a BESS with a capacity of approximately 100 MW / 200 MWh (i.e. 200 MW AC of electricity discharged over 2 hours). It would supply electricity to the national electricity market during peak periods.

The key elements of the Proposal include the following:

- Subject to final equipment selection, approximately 20 skid modules containing lithium-ion batteries and 40 associated power conversion systems (PCS). Each PCS includes two inverters to convert Direct Current (DC) to Alternating Current (AC) and one transformer to combine and step up the voltage.
- A 33 kilovolt (kV) switch room to convert low voltage current to medium voltage current.
- An onsite substation to convert medium voltage current to high voltage current.
- A control room that contains infrastructure that monitors the battery system and allows the operator to control the power plant remotely.
- A new overhead and/or underground transmission line from the onsite substation to TransGrid's Lismore 330 kV substation (approximately 200-500 m, depending on detailed design).
- A new site access point off Cooper Road (access route via Bruxner Highway, Fig Tree Lane, Rogerson Road and Cooper Road).
- Intersection and road upgrades as required.
- Associated ancillary infrastructure including:
    - Cables connecting infrastructure
    - Internal access tracks
    - Staff amenities
    - Operations and maintenance building
    - Construction laydown areas
    - On-site car parking
    - Security fencing.

The grid connection for the BESS would be via TransGrid's Lismore 330 kV substation, located to the immediate north of the Subject Site. A new transmission line route would be established between the onsite substation and the TransGrid Lismore 330 kV substation site. The transmission line route length would be between 200 m to 500 m long, dependant on the final position of the transmission line as discussed with TransGrid. Currently, a maximum footprint of the transmission line easement has been utilised for purpose of assessment, though the final option will utilise a small corridor of this maximum considered footprint.

The construction phase is anticipated to take approximately nine months. It is expected that the operational life of the Proposal would be approximately 20 years. The decommissioning phase would involve removal of all infrastructure and return of the Subject Site to its existing land capability for agricultural use.

The capital investment value (CIV) of the Proposal would be greater than $30 million. A detailed CIV report would be prepared as part of the development application process, which would confirm the CIV.

A preliminary indicative layout is shown below however, this will be informed by community and stakeholder consultation, detailed environmental investigations and during the detailed design phase. The EIS will assess and seek consent for the broader development footprint to ensure the required design flexibility in detailed design.

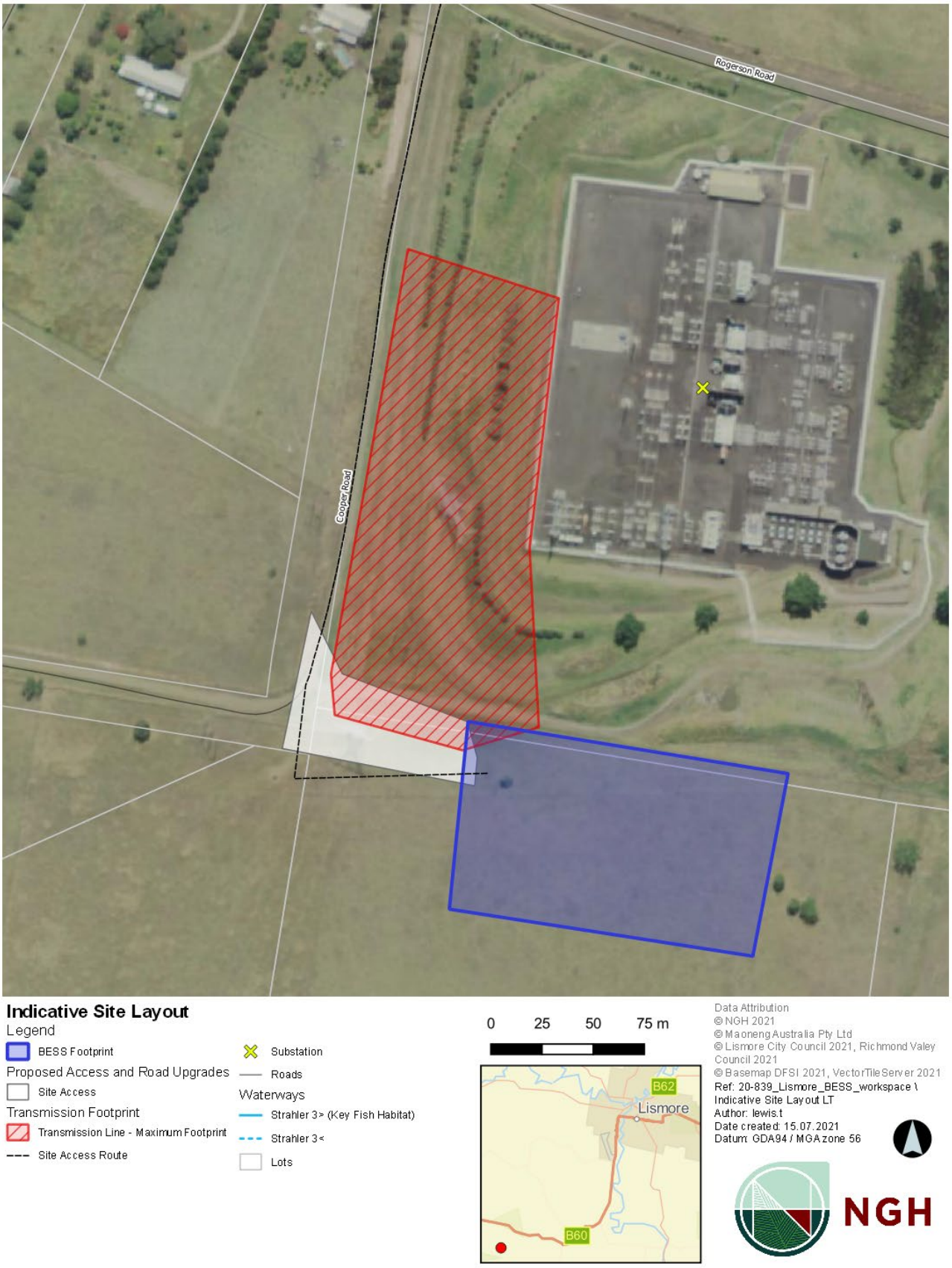

Figure 2-3 Individual development footprints; areas within which the transmission line and BESS will be sited.

3. PROPOSAL NEED AND BENEFITS

Battery energy storage can provide reliable and efficient energy by shifting the supply of electricity from times of high supply and low demand to times of low supply and high demand. The Proposal would provide an opportunity for optimising the management and security of energy for use in peak periods, particularly in a time of change when Australia begins to experience shortages due to population growth and coal fired power station closures. Further, energy from renewables and low carbon alternatives can be generated during their optimal generation times (i.e. generation of solar electricity during the day) and stored, thus minimising reliance on carbon and reducing greenhouse gas emissions (GHG) and the onset of climate change.

In this regard, the proposal contributes to combating the adverse effects of climate change. Climate change refers to the warming temperatures and altered climatic conditions associated with the increased concentration of greenhouse gases in the atmosphere. Climate change projections for Australia includes more frequent and hotter hot days and fewer frost days, rainfall declines in south eastern Australia and more extreme weather events including intense rainfall, severe drought and harsher fires (CSIRO, 2018). The effects of climate change have specific risks for regional areas and land uses.

Discussion is provided below about how the Proposal would support the security of energy in NSW and how it would support NSW and Commonwealth climate change commitments.

Further to providing more secure energy for times of need and supporting Commonwealth and State level efforts to mitigate the effect of climate change, the Proposal would have the following other benefits:

- The Proposal improves the stability and reliability to the electricity network by storing energy during periods of low demand, including those from more intermittent renewable sources (residential solar and grid scale solar/wind projects), and dispatching energy during periods of peak demand and emergency events.
- Direct employment opportunities during the construction period (maximum of 200 construction jobs during peak construction, average of approximately 80 construction jobs) and up to one ongoing job during the 20-year operational life.
- Stimulus of the service sector during construction to support local economies.

Once operational, it is not anticipated that any permanent onsite workers would be required as the site would be operated remotely. Economic benefits to the surrounding communities would be less, however the local labour force may be used for ongoing monitoring and maintenance.

3.1.1. Energy security

While most of Australia's electricity is currently provided by coal-fired power stations, as many as three-quarters of these plants are operating beyond their original design life (DIS, 2015). Nine coal-fired power stations have closed since 2011-2012, representing around 3,600 MW of installed capacity (Commonwealth of Australia, 2016). The reduction in energy supply from coal-fired power stations requires the development of reliable and sustainable energy supply.

Maoneng is in the process of building more than 600 MWh of utility-scale battery projects and has an Energy Storage Development Agreement with AGL. Under this agreement, Maoneng will develop large-scale batteries to provide 200 MW/400 MWh of dispatchable capacity to AGL in

NSW between 2023 and 2038. Power generated under this agreement is capable of powering 30,000 homes at times of higher demand or low renewable energy supply. The Proposal would be a key piece of infrastructure in supporting the Energy Storage Development Agreement.

3.1.2. Commonwealth climate change commitments

The Proposal supports Commonwealth climate change commitments including the United Nations Paris Climate Change Agreements.

A legally binding and universal agreement on climate was reached at the 2015 Paris Climate Conference, with the aim of keeping global warming below 2°C, by reducing greenhouse gas emissions. Australia has committed to reducing greenhouse gas emissions by aiming for the following targets:

- 5% below 2000 levels by 2020.
- 26 to 28% below 2005 levels by 2030.
- Net zero emissions in the second half of this century.

The Proposal would contribute to Australia's effort in helping meet these targets by storing excess energy for use in times of peak demand which would reduce wastage and additional energy to be made during peak times.

3.1.3. NSW climate change commitments

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

- Goal 22 of the NSW 2021: A plan to Make NSW Number One (NSW Government, 2011):
    - Contribute to the national renewable energy target [i.e. 20% renewable energy supply] by promoting energy security through a more diverse energy mix, reducing coal dependence, increasing energy efficiency and moving to lower emission energy sources.
- Contributing to achieving the NSW target of zero net emissions by 2050.

4. SITE SELECTION AND SUITABILITY

Maoneng have been searching for suitable sites for a BESS across the NSW transmission network.

Grid load flow studies were conducted to find substations that had ability to accept capacity from a proposed battery. The Lismore 330 kV substation was one of a few substations in NSW with enough capacity for a BESS project without being significantly constrained. The Proposal works within the current capacity of the substation and is not dependent on planned transmission line upgrades. Additionally, the Lismore 330 kV substation has many connecting lines that flow to various regions of the electricity network, providing greater resilience to any proposed battery project.

Maoneng subsequently investigated various land parcels around the substation to find a suitable site to develop a battery. The Subject Site was chosen due to the proximity to the existing substation, appropriate zoning, minimal existing vegetation, lack of mapped heritage sites and significant land size. The site is located away from built up areas, allowing for a development that can mitigate any potential impacts on nearby receivers. The size of the land also allows for appropriate setbacks that would mitigate impacts on nearby receivers. The topography of the land also provides the opportunity to provide effective visual screening to neighbours. Visual impacts are therefore likely to be manageable with the implementation of mitigation measures. The mitigation of visual impacts will remain an important consideration throughout the assessment process and community consultation period, with feedback to be integrated into the detailed design of the project and the Environmental Impact Assessment. Preliminary desktop analysis and site survey of the site shows a lack of vegetation, cultural heritage and bushfire risk on the site and, with the implementation of mitigation measures, minimal flooding risk, make the site favourable for a BESS development.

The Subject Site was also selected as a result of community feedback. The original site selected for the project (Development Application withdrawn in July 2021 in favour of this new Subject Site) was located approximately 700m northwest of the Subject Site. The neighbouring landowners expressed concern as to the impacts of this location, particularly regarding the potential for visual, noise and flood impacts. As a result of this community concern, Maoneng selected the current Subject Site, which is anticipated to have less visual impacts for neighbouring landowners, less potential for noise impacts, and is not mapped as flood prone land or as containing waterways.

5. CONSULTATION

To date, consultation for the project has been undertaken with NSW government departments, Lismore City Council, Richmond Valley Council, the surrounding landowners, the Local Aboriginal Land Council (LALC), and politicians, and project information has been broadcasted through the local radio. A summary of the key consultation and activities carried out to date is provided in Table 5-1. Consultation has been included from the onset of the project, beginning at the preliminary site selection (Lot 2552 DP843766) and continuing through consultation surrounding the Subject Site.

Further community engagement activities would continue through the progression of the Proposal into the construction and operational phases. Maoneng would keep the community updated and contact special interest groups directly.

Table 5-1 Consultation summary

Stakeholder	Date	Consultation activity	Purpose	Consultation outcomes and issues raised	Consideration of issues raised
Preliminary Site (Lot 2552 DP843766)					
NSW DPIE	15 December 2020	Project scoping meeting	To introduce the project, identify constraints and seek DPIE advice for preparation of Scoping Report	-	-
Lismore City Council	4 December 2020	Requested property information for associated landowners from council land team	To acquire mailing details to send community consultation letters out	-	-

Stakeholder	Date	Consultation activity	Purpose	Consultation outcomes and issues raised	Consideration of issues raised
Lismore City Council	10 December 2020	Sent an email outlining the Proposal and site visit for planned for 16 December 2020	To answer questions and check if councillors wanted to meet to discuss the Proposal. A response was received from Cr Elly Bird and Cr Vanessa Ekins.	A response was received from Cr Elly Bird and Cr Vanessa Ekins. Provided answers to general questions about the project.	-
Surrounding Landowners	10 December 2020	Sent letters via mail to nearby landowners detailing the Proposal and site visit planned for 16 December 2020	To provide preliminary information about the Proposal and offer initial opportunity to discuss the project	-	-
Ngulingah Local Aboriginal Land Council (LALC)	14 December 2020	Sent an email outlining the Proposal and site visit for planned for 16 December 2020	To ensure consistent communication with the Aboriginal land council and offer initial opportunity to discuss the project	No formal response received. Will be consulted as part of Aboriginal Cultural Heritage Assessment	-
TransGrid	15 December 2020	Lodged a formal connection enquiry with the transmission network	To formalise discussions around the network side of the Proposal with TransGrid, so technical	Indication of capacity available at Lismore 330kV substation.	Ensured that the proposal does not exceed the available substation capacity.

Stakeholder	Date	Consultation activity	Purpose	Consultation outcomes and issues raised	Consideration of issues raised
			studies can be commenced.		
Surrounding Landowners	16 December 2020	Door knocked surrounding properties to discuss the Proposal and seek input	Spoke to adjacent landowners	Amenity impacts including: • Visual • Noise • Hazards • Traffic • Flooding	Took the feedback on to inform technical studies.
Nearby landowner	16 December 2020 (ongoing)	Ongoing phone calls and emails with land owner	Address his concerns with the Proposal	Main issues raised were visual and hazard impacts.	Completed a visual study to indicate the impact on dwelling's view with a visual montage with and without screening. Addressed concerns relating to hazards by informing of a hazards study that will be conducted for the project.
Lismore City Council	18 December 2020	Emailed all the councillors regarding an objection to the project by adjacent landowner	To keep Councillors informed	Concerns around zoning and planning process, amenity impacts and	Explained the zoning and planning process for the proposal and the expected timeline of the project.

Stakeholder	Date	Consultation activity	Purpose	Consultation outcomes and issues raised	Consideration of issues raised
				concerns of a potential solar farm	Shared information on mitigation strategies and required studies that are being conducted. Communicated that a solar farm is not part of this project.
ABC North Coast	21 December 2020	Maoneng representative provided an audio interview regarding the Proposal as an objector had notified the ABC of the Proposal	To provide information about the project, including the key benefits of the Proposal	Concerns around visual, noise and flood impacts	Shared visual montages during community meeting. Noise and flood studies ongoing.
ZZZ Radio	21 December 2020	Maoneng representative provided an audio interview regarding the Proposal as an objector had notified the ABC of the Proposal	To provide information about the project, including the key benefits of the Proposal	Concerns around visual, noise, traffic, and flood impacts	All these impacts are being considered in studies. Visual montages prepared and shared at community session.
State MP – Janelle Saffin	21 December 2020	Email to the Member for Parliament (MP)s office regarding the Proposal	To ensure that information is directly available from the company to the MP	Concerns around ecology, traffic, noise, visual and hazards.	All these impacts are being considered in studies. Issues raised are

Stakeholder	Date	Consultation activity	Purpose	Consultation outcomes and issues raised	Consideration of issues raised
		and concerns raised by the community			being considered as part of the studies.
Federal MP – Kevin Hogan	21 December 2020	Email to the MPs office regarding the Proposal and concerns raised by the community.	To ensure that information is directly available from the company to the MP	Concerns around visual impact based on a revised development envelope position	Sending visual modeller back to property to get new photos to model visual montage from dwelling.
Richmond Valley Council	28 December 2021	Sent email to Council detailing the Proposal	To provide preliminary information about the Proposal and offer initial opportunity to discuss the project	Provided explanation on site selection and why another site was rejected. Concerns around visual and noise impacts.	Prepared visual montage of project from landowner property. Informed that noise studies are ongoing.
Transport for NSW	January – February 2021	Traffic consultant Amber Organisation emailed TfNSW, Lismore City Council and Richmond Valley Council	To provide information about site access requirements, including use of state/Council-owned roads.	TfNSW advised that a Traffic Impact Assessment (TIA) will be required for the EIS.	A TIA will be prepared for TfNSW review
Subject Site (Lot 235 DP755728)					
NSW DPIE	December 2020 through June 2021	Progress and status updates from December through June.	Advised DPIE on status of investigations, land tenure	Community concern on previous site	Progress of alternative site

Stakeholder	Date	Consultation activity	Purpose	Consultation outcomes and issues raised	Consideration of issues raised
			updates and decision-making process.		
State MP, Janelle Saffin **Federal MP, Kevin Hogan**	April 2021	Phone call to advise on investigations into new site	Acknowledged community requests to find alternative site, status update and briefing on potential of the current site.	Noted investigations and requested to be kept informed. State MP J. Saffin advised of concerns in Planning Act consultation process.	-
• **Lismore City Council staff** • **Lismore City Councillors** • **State MP and Federal MP** • **Richmond Valley Council**	May 2021	Email update	Update on current site, justification for move and invitation to contact Maoneng to respond to any further queries.	Continued community updates Provide more details analysis and reports	Future engagement scheduling and process to be considered in the EIS and detailed project planning.
• **Surrounding landowners and other interested parties**	April through July 2021	Phone calls and email updates	Listened to and attempt to address concerns with prior and current site. Discussion about compensation for	Range of views according to relationship with old and new site. While most but not all preferred the new site concerns were raised about how potential impacts that	-

Stakeholder	Date	Consultation activity	Purpose	Consultation outcomes and issues raised	Consideration of issues raised
			construction traffic impact of neighbours nearest to site on Rogerson and Coopers Road.	Maoneng will continue to work to address.	
• **Closest surrounding landowners to East**	May 2021	Site visit	The current location moved the battery closer to their houses than the previous. We met with these neighbours at one house to address unique concerns.	Noise Traffic impact Hazards and safety	Ongoing communication with these landowners Noise modelling to be undertaken in EIS stage
• **Ngulingah Local Aboriginal Land Council (LALC)**	April to June 2021	Various phone calls	To respond to interest from Aboriginal Group to participate in a battery project as a landowner.	Advised we had settled on the current site due to its proximity to the substation. Discussed opportunities to ensure equitable representation within the project workforce.	-
• **ABC North Coast**	2 July 2021	Maoneng representative provided an audio interview regarding the Project update	To provide information about the project, including the key benefits, issues and risks of the Proposal.	General update around progressing with new site.	News updates released to public on the week of the 2nd July

Stakeholder	Date	Consultation activity	Purpose	Consultation outcomes and issues raised	Consideration of issues raised
• **Richmond River Independent**	8 July 2021	Maoneng representative provided an interview regarding the Project update.	To provide information about the project, including the key benefits of the Proposal.	General update around progressing with new site.	Story in Richmond River Independent.
• **DPIE**	14 July 2021	Scoping Meeting	To discuss the new project site, community engagement process and assessment process.	DPIE raised points to be addressed in the assessment phase of the project.	These aspects have been considered in this report and/or will be considered further in the EIS and detailed project planning.
• **Nearest receivers**	June, July 2021	Phone calls, invitation for in person meetings.	To get initial feedback on new site and open dialogue for ongoing consultation.	Noise Visual Property prices Construction Impact	Community consultation will continue to occur and be a primary focus of the EIS, feeding into the detailed design and impact mitigation of the project.

Required consultation pertaining to Aboriginal Cultural Heritage Assessment, including with Heritage NSW and Registered Aboriginal Parties, has also commenced and is currently in progress.

Community engagement is a key consideration for this proposal and will continue to be a key focus throughout the detailed assessment and design of the project. Future engagement measures will be enacted to ensure valuable community input is considered and incorporated throughout this process.

6. PLANNING CONSIDERATIONS

6.1. Key NSW Environmental Planning instruments

6.1.1. Environmental Planning and Assessment Act 1979

Development in NSW is subject to the requirements of EP&A Act and its associated regulations. Environmental planning instruments prepared pursuant to the EP&A Act set the framework for approvals under the EP&A Act. The Proposal would be assessed under Part 4 of the EP&A Act.

6.1.2. State Environmental Planning Policy (State and Regional Development) 2011

Clause 20 of Schedule 1 of the State and Regional SEPP states that the following development is considered SSD:

Development for the purpose of electricity generating works or heat or their co-generation (using any energy source, including gas, coal, biofuel, distillate, waste, hydro, wave, solar or wind power) that:

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

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

Electricity generating works is defined in the Standard Instrument – Principal Local Environment Plan (2006) as:

A building or place used for the purpose of –

(a) Making or generating electricity, or

(b) Electricity storage.

The primary purpose of the Proposal is for electricity storage and it is expected to have a capital investment value of more than $30 million. Energy from the BESS would be used to supplement the national network during peak periods, per the Energy Storage Development Agreement with AGL. Therefore, the Proposal meets the definition of development for the purpose of electricity generating works per Clause 20 of the State and Regional SEPP. Accordingly, the Proposal is classified as SSD under Part 4 of the EP&A Act and approval would be given by the NSW Minister for Planning and Public Spaces (the Minister), or the Independent Planning Commission of NSW (IPC), as delegated by the Minister in certain circumstances.

6.1.3. State Environmental Planning Policy (Infrastructure) 2007

Clause 34(1)(b) of State Environmental Planning Policy (Infrastructure) 2007 (ISEPP) provides that development for the purpose of electricity generating works may be carried out by any person with consent on any land in a prescribed rural, industrial or special use zone.

Pursuant to Clause 33 of the ISEPP, a prescribed rural, industrial or special use zone means any of the following land use zones or a land use zone that is equivalent to any of those zones:

- RU1 Primary Production
- RU2 Rural Landscape

- RU3 Forestry
- RU4 Primary Production Small Lots
- IN1 General Industrial
- IN2 Light Industrial
- IN3 Heavy Industrial
- IN4 Working Waterfront
- SP1 Special Activities
- SP2 Infrastructure.

The Subject Site is zoned as RU1 Primary Production and therefore the Proposal meets the definition of a prescribed rural, industrial or special use zone. Accordingly, the Proposal is permissible with consent.

6.1.4. State Environmental Planning Policy (Primary Production and Rural Development) 2019

The aims of State Environmental Planning Policy (Primary Production and Rural Development) 2019 (Primary Production and Rural Development SEPP) are to:

a) To facilitate the orderly economic use and development of lands for primary production.
b) To reduce land use conflict and sterilisation of rural land by balancing primary production, residential development and the protection of native vegetation, biodiversity and water resources.
c) To identify State significant agricultural land for the purpose of ensuring the ongoing viability of agriculture on that land, having regard to social, economic and environmental considerations.
d) To simplify the regulatory process for smaller-scale low risk artificial waterbodies, and routine maintenance of artificial water supply or drainage, in irrigation areas and districts, and for routine and emergency work in irrigation areas and districts.
e) To encourage sustainable agriculture, including sustainable aquaculture.
f) to require consideration of the effects of all proposed development in the State on oyster aquaculture.
g) To identify aquaculture that is to be treated as designated development using a well-defined and concise development assessment regime based on environment risks associated with site and operational factors.

Specific to this Proposal, it is anticipated that:

- The land capability of the site would not be affected given the nature of the works involved for the installation of the BESS which are considered to be relatively minor. Soil testing would indicate baseline levels prior to construction and to be retained for rehabilitation commitments post decommissioning. The Development Footprint is mapped as Biophysical Strategic Agricultural Land (BSAL), with the exception of a portion of Fig Tree Lane. The Biophysical Strategic Agricultural Land (BSAL) is land identified to have high quality soil and water resources capable of sustaining high levels of productivity. Post decommissioning, the site may return to grazing (currently cows and horses). The Development Footprint is small in order to minimise impacts on BSAL.

- During construction of the Proposal, the economic benefits of the Proposal would highly likely exceed benefits of the returns received from current agricultural activities on a per ha basis. Additionally their would be local employment during operation and other economic stimulus to the surrounding community.

The Proposal is considered compatible with the relevant aims of the Primary Production and Rural Development SEPP.

6.1.5. State Environmental Planning Policy No 33 (Hazardous and Offensive Development)

State Environmental Planning Policy No 33 – Hazard and Offensive Development (SEPP 33) defines and regulates the assessment and approval of potentially hazardous or offensive development.

SEPP 33 provides for systematic assessment of potentially hazardous and offensive development for the purpose of industry or storage. For development proposals classified as 'potentially hazardous industry' the policy requires a preliminary hazard analysis (PHA) to determine risks to people, property and the environment.

SEPP 33 defines 'potentially hazardous industry' as:

> *…development for the purposes of any industry which, if the development were to operate without employing any measures (including, for example, isolation from existing or likely future development on other land) to reduce or minimise its impact in the locality or on the existing or likely future development on other land, would pose a significant risk in relation to the locality:*
>
> *(a) to human health, life or property, or*
>
> *(b) to the biophysical environment,*
>
> *and includes a hazardous industry and a hazardous storage establishment*

'Potentially offensive industry' defined as:

> *…a development for the purposes of an industry which, if the development were to operate without employing any measures (including, for example, isolation from existing or likely future development on other land) to reduce or minimise its impact in the locality or on the existing or likely future development on other land, would emit a polluting discharge (including for example, noise) in a manner which would have a significant adverse impact in the locality or on the existing or likely future development on other land, and includes an offensive industry and an offensive storage establishment.*

The hazardous development status of the Proposal is assessed in Section 7.1.7.

6.1.6. State Environmental Planning Policy (Koala Habitat Protection) 2020

State Environmental Planning Policy – (Koala Habitat Protection) 2020 (Koala SEPP 2020) aims to encourage the conservation and management of areas of natural vegetation that provide habitat for koalas.

Per Clause 5(1) of the Koala SEPP 2020, the provisions of the Koala SEPP 2020 apply to each local government listed in Schedule 1. Lismore LGA is identified in Schedule 1. However, as the

Proposal is SSD, assessment of impacts to the Koala and Koala habitat would be carried out under the NSW *Biodiversity Conservation Act 2016* (BC Act 2016) (refer Section 6.1.9).

Further discussion of koala habitat protection is provided in Section 7.1.4.

6.1.7. Roads Act 1993

The NSW *Roads Act 1993* (Roads Act) provides for the classification of roads as classified and unclassified roads and for the declaration roads under the care of local councils or Transport for NSW (TfNSW) and other road authorities. It also regulates the carrying out of various activities in, on and over public roads.

Intersection treatments and road upgrades may be required to obtain site access. Final site access arrangements would be determined by further traffic investigations. Additional approval in the form of a Section 138 permit from the relevant roads authority (TfNSW and/or Lismore Council and/or Richmond City Council) is expected to be required to carry out road upgrades.

Access and traffic are further discussed in Section 7.1.8.

6.1.8. Crown Lands Management Act 2016

The main objectives of the NSW *Crown Lands Management Act 2016* (Crown Lands Act) are 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. Local Councils are responsible for the sustainable and commercial management of Crown Land.

There is no Crown Land within the Subject Site. Therefore, no Crown Land permits would be investigated as part of the EIS.

6.1.9. Biodiversity Conservation Act 2016

The NSW *Biodiversity Conservation Act 2016* (BC Act) relates to the conservation of biodiversity.

The purpose of the BC Act is to maintain a healthy, productive and resilient environment for the greatest well-being of the community consistent with the principles of the ecological sustainable development (ESD).

The BC Act contains provisions relating to flora and fauna protection, threatened species and ecological communities listing and assessment, a Biodiversity Offsets Scheme (BOS), a single Biodiversity Assessment Method (BAM), calculation and retirement of biodiversity credits and biodiversity assessment and planning approvals. It also requires specific consideration of irreversible impacts.

The Proposal may impact on native vegetation and biodiversity values. A Biodiversity Development Assessment Report (BDAR) is likely to be required as part of the EIS, taking into consideration requirements raised by Biodiversity Conservation Division (BCD) during consultation. Biodiversity is discussed further in Section 7.1.4.

6.1.10. National Parks and Wildlife Act 1974

The NSW *National Parks and Wildlife Act 1974* (NPW Act) establishes the fundamental functions of the NSW National Parks and Wildlife Service. These include the conservation of nature, objects, features, places and management of land reserved under the NPW Act. Specifically, the conservation of nature includes:

- Landforms of significance, including geological features and processes, and
- Landscapes and natural features of significance including wilderness and wild rivers.

The NPW Act regulates access to National Parks. There are no National Parks located in proximity to the Subject Site.

The NPW Act also sets out to protect and preserve Aboriginal heritage values. Part 6 of the NPW Act refers to Aboriginal objects and places and prevents persons from impacting on an Aboriginal place, object or relic, without consent or a permit.

Additional to the NPW Act, Heritage NSW sets out code and guidelines for required assessment and consultation protocols for Aboriginal heritage impact assessments. Aboriginal Heritage is discussed further in Section 7.1.5.

6.1.11. Heritage Act 1977

The NSW *Heritage Act 1977* (Heritage Act) aims to conserve heritage values. The Heritage Act defines 'environmental heritage' as those places, buildings, works, relics, moveable objects and precincts listed in the Local or State Heritage Significance. A property is a heritage item if it is listed in the heritage schedule of the local Council's 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 4.41 of the EP&A Act, an approval under Part 4 or a permit under Section 139 of the Heritage Act would not be required for SSD.

Based on preliminary searches, no historic heritage has been identified within the Subject Site. Historic heritage is further discussed in Section 7.1.5 of this report.

6.1.12. Water Management Act 2000

Under section 4.41 of the EP&A Act, SSD developments do not require a controlled activity approval (other than an aquifer interference approval) under Section 91 of the NSW *Water Management Act 2000* (WM Act). However, best practice measures are being used to inform site development in accordance with the WM Act.

The WM Act defines waterfront land as the bed of any river, lake or estuary and any land within 10, 20, 30 and 40 metres of the river banks, lake shore or estuary mean high water mark, in accordance with best practice guidelines. Permanent project infrastructure would be avoided or minimised in these areas, as informed by further hydrological studies. In overland flow areas, which do not meet the definition of waterfront land under the WM Act, permanent infrastructure may be considered.

There is no waterfront land within the Subject Site as the waterways within the Subject Site are perennial streams and do not require consideration under the WM Act.

Water requirements and access arrangements will be investigated in the EIS.

6.2. Local Instruments

6.2.1. Lismore Local Environmental Plan 2012

The Subject Site is located within the Lismore LGA and is subject to the provisions of the Lismore LEP 2012. Under the Lismore LEP 2012, the Subject Site is zoned as RU1 Primary Production (Figure 6-1).

The objectives of this zone are:

- To encourage sustainable primary industry production by maintaining and enhancing the natural resource base.
- To encourage diversity in primary industry enterprises and systems appropriate for the area.
- To minimise the fragmentation and alienation of resource lands.
- To minimise conflict between land uses within this zone and land uses within adjoining zones.
- To preserve rural resources by ensuring that the viability of rural land is not extinguished by inappropriate development or incompatible uses.
- To enable a range of other uses to occur on rural land providing such uses do not conflict with existing or potential agriculture and do not detract from the scenic amenity and character of the rural environment.

Development for the purpose of electricity generation is prohibited within this land zoning, however Clause 34(1)(b) of the ISEPP provides that development for purpose of electricity generation works may be carried out by any person with consent on any land in a prescribed rural, industrial or special use zone. As RU1 Primary Production meets the definition of a prescribed rural, industrial or special use zone per Clause 33 of the ISEPP, the provisions of the ISEPP prevail over the Lismore LEP 2012. The Proposal is thus permissible on this land.

6.2.2. Richmond Valley Local Environment Plan 2012

Part of the access route, Fig Tree Land, is located within Richmond Valley LGA, and is subject to the provisions of the Richmond Valley LEP. Fig Tree Lane and the land surrounding it are zoned as RU1 Primary Production (Figure 6-1). Under the Richmond Valley LEP, the objectives of this zone are:

- To encourage sustainable primary industry production by maintaining and enhancing the natural resource base.
- To encourage diversity in primary industry enterprises and systems appropriate for the area.
- To minimise the fragmentation and alienation of resource lands.
- To minimise conflict between land uses within this zone and land uses within adjoining zones.
- To ensure that development does not unreasonably increase the demand for public services or public facilities.

Any road works or upgrades required to Fig Tree Lane would be assessed as part of the EIS and undertaken in accordance with Richmond Valley Council.

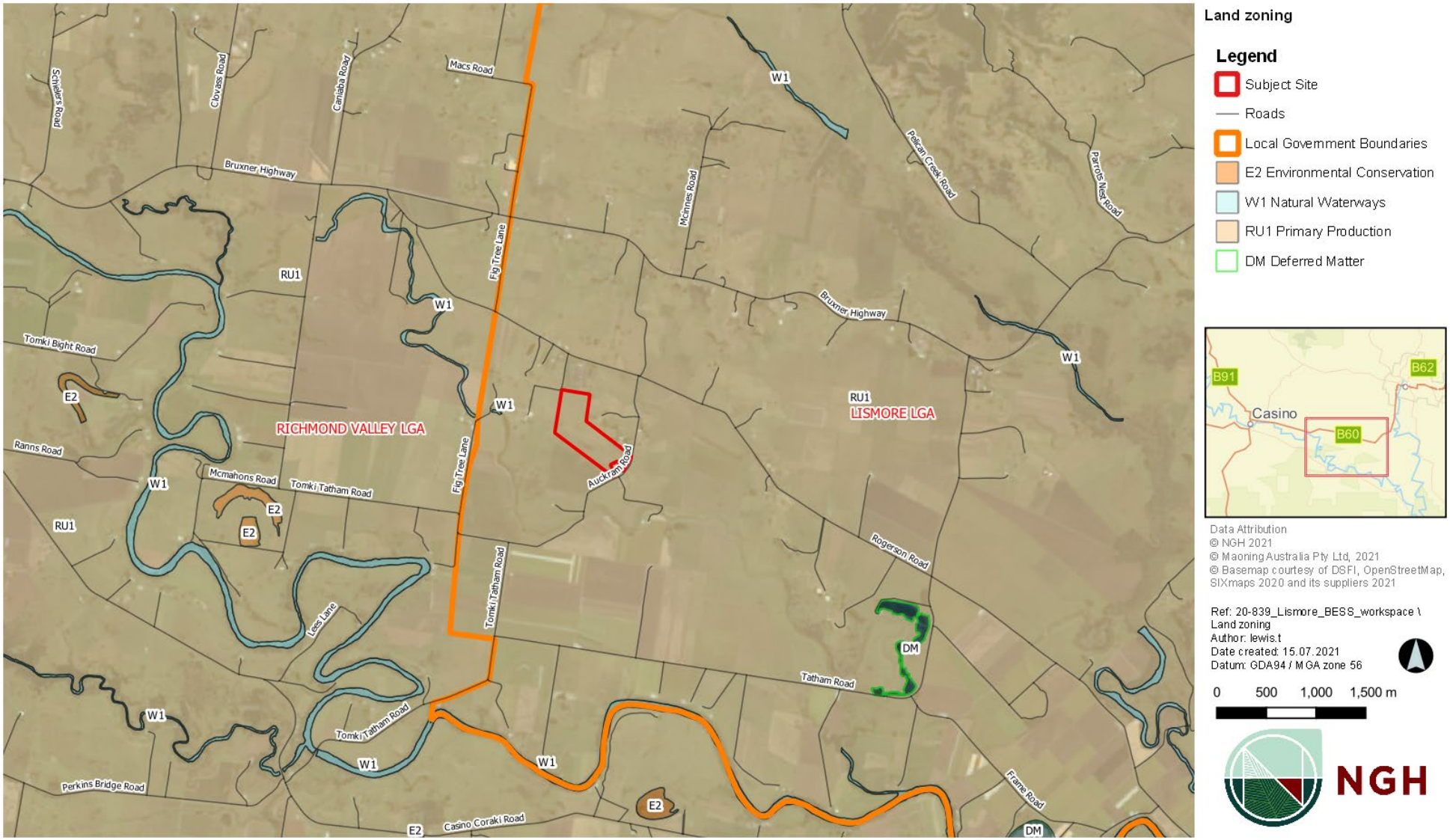

Figure 6-1 Land zoning

6.3. Commonwealth legislation

6.3.1. Environment Protection and Biodiversity Conservation Act 1999

The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is administered by the Commonwealth Department of Agriculture, Water and the Environment (DAWE). Under the EPBC Act, if the Minister determines that an action is a 'controlled action' which would have or is likely to have a significant impact on a Matter of National Environmental Significance (MNES) or Commonwealth land, then the action may not be undertaken without prior approval of the Minster.

The EPBC Act identifies nine MNES, outlined in Table 6-1. Actions that adversely affect these matters may be deemed to be a 'controlled action' under the EPBC Act.

A search of the Commonwealth Protected Matters Search Tool was undertaken on 6th July 2021 for the Subject Site with a 10 km buffer. The findings of the search are outlined in Table 6-1.

The potential for these entities to occur would be investigated as part of the EIS. At this stage, a significant impact on an MNES and the requirement to refer the proposal under the EPBC Act is not considered likely.

Table 6-1 EPBC Act MNES

MNES	Quantity	Description
World Heritage properties.	None	Not applicable
National heritage places.	None	Not applicable
Ramsar wetlands of international significance.	None	Not applicable
Threatened species and ecological communities.	2 Ecological communities 51 Threatened species	Discussed in Section 7.1.4
Migratory species.	16	Discussed in Section 7.1.4
Commonwealth marine areas.	None	Not applicable
The Great Barrier Reef Marine Park.	None	Not applicable
Nuclear actions (including uranium mining).	Not applicable	Not applicable
Water resources (in relation to coal seam gas development and large coal mining development).	Not applicable	Not applicable

6.3.2. Native Title Act 1993

The Commonwealth *Native Title Act 1993* (NT Act) 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.

A search of the Native Title Register for the Lismore City Council LGA undertaken on the 6th July 2021 yielded one result by the Widjabul Wia-bal people, however this claim did not cover the Subject Site.

7. SCOPING ASSESSMENT

7.1. Assessment of key issues

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

- Visual amenity
- Noise and vibration
- Land use compatibility
- Biodiversity
- Aboriginal heritage
- Hazards – bushfire and battery storage
- Traffic and access
- Hydrology, groundwater and water use
- Soils and landforms
- Social and economic impacts.

These are discussed in greater detail below.

7.1.1. Visual amenity

The Subject Site is located within the rural locality of McKees Hill in far north NSW. The visual landscape is typical of an agricultural landscape, with varying cropping, grazing and livestock productions contributing to the amenity of the area.

An existing substation is located on the corner of Cooper Road and Rogerson Road and dominates the visual character in the area. Transmission lines associated with the substation are an existing feature in the surrounding landscape. The topographical character is defined by very low to low undulating hills and rises. Land has been extensively cleared and is predominately utilised for dryland cropping, grazing, modified paddocks, and irrigated pastures. Small pockets of remnant vegetation are isolated in the landscape consisting of tall open forest dominated by Eucalyptus species.

The Project is located immediately south of the existing substation. Landscape screening has been implemented along the substations north, west, and southern boundaries to assist in screening the substation infrastructure from surrounding land.

The topography of the Subject Site is undulating, with higher points located in the south and southeast of the site. These slope across the site towards the site boundaries, decreasing in elevation by approximately 25 m from the highest areas on site. The northern portion of the site, where the development footprint is located, slopes to the northwest, with higher points to the south and east of the development footprint. These slopes decrease in elevation by approximately 5-6 m across the development footprint.

The final design of the project proposed in the EIS will feature a range of visual mitigation measures, likely to include civil works to cut the site ground level into the natural topography, additional external earth mounds and vegetation screening. These mitigation measures will form part of the project footprint.

Potential Visual Impacts

Opportunities to view the Project from the surrounding landscape are likely to be limited. It is anticipated views from Rogersons Road to the north of the Site will be screened by the existing substation and its associated screen planting.

Views to the Project from the south and south east will be obstructed by the rise in topography to the south of the Site, which runs from Auckram Road in a northwest direction toward Cooper Road. Additionally, the Project has been designed to cut into the slight rise in the landform to reduce the potential visibility from rural residences to the southwest and southeast.

There is potential to view the Project from Cooper Road. The Project would be viewed in the context of infrastructure that is a part of the existing landscape character (i.e. Substation and transmission lines). Cooper Road is a very low use road, providing access to two dwellings. With proposed landscaping implemented, it is anticipated the impact would be very low.

Landscaping has been proposed in keeping with the existing landscape character to ensure the Project integrates into the landscape. Screen planting is an existing feature in the landscape, surrounding dwellings and along lot boundaries.

No residential receivers are within the Development Footprint or the Subject Site. There is one involved receiver, referred to as R1 as shown in Figure 7-1. The are 32 non-involved residential receivers within 1 km of the Development Footprint (refer to Figure 7-1). A breakdown of residential receivers within 1 km of the Development Footprint is provided in Table 7-7.

Table 7-1 Residential receivers within 1 km of the Development Footprint

Distance from Development Footprint	Number of residential receivers	Residential receivers	Potential for view of the Proposal prior to implementation of mitigation measures
Within 200 m	5	R2, R3, R4, R5, R6	The five uninvolved residences located northwest and west of the proposal site would have a view of the proposal and are in close proximity of the access route to the site. Of these five, R2 and R5 are located within 250m. Given the topography of the site, minimal distance and lack of physical barrier or vegetation screening between the Proposal and these residential receivers, it is likely that these residences to the northwest and west would have a view of the Proposal. R3, R4 and R6 are located northwest of the proposal, across Rogerson Road. It is anticipated views of the operational infrastructure would be low, as their views

Distance from Development Footprint	Number of residential receivers	Residential receivers	Potential for view of the Proposal prior to implementation of mitigation measures
			would be partially blocked by the existing substation and vegetation screening. Visual impacts (as well as other amenity impacts such as noise) during construction would be most relevant for this group of receivers.
200m to 500 m	5	R1 (involved), R7, R8, R9, R10	The five residences located northwest and west of the proposal site would have a view of the proposal. Of these five, R7, R8 and R10 are located between 250 and 500m. Given the topography of the site, minimal distance and lack of physical barrier or vegetation screening between the Proposal and these residential receivers, it is likely that they would have a view of the Proposal. R1, the involved receiver, is located to the southeast. The topography of the site would block all views from R1. It is anticipated that R9, to the north, would have low impacts, as views would be blocked by the existing substation and vegetation screening.
500m to 1 km	5	R11, R12, R13, R14, R15,	The topography of the site would block receivers to the southeast, R11, R12, and R13, from having views of the proposal. R15, located to the southwest, and R14, located to the northeast are unlikely to have a view of the Proposal. Any view may be softened by road corridors, existing vegetating screening and existing buildings (i.e. houses, TransGrid substation, etc.)
1km to 2km	34	R17 through R50	These receivers are likely to have low impacts due to distance, topography, road corridors, and existing vegetation screening and buildings.

Mitigation Measures

A Preliminary Landscape Plan has been proposed keeping in with the existing character and to ensure the Project integrates into the landscape. This Preliminary Landscape plan is attached as Appendix B. The Preliminary Landscape Plan indicates the type of mitigation being proposed and

will be further assessed, analysed and refined throughout the EIS stage, to tailor its design to the impacts assessed through the Visual Impact Assessment.

Screen planting is an existing feature in the landscape, surrounding dwellings and along lot boundaries. Native and endemic trees and shrubs species found generally within the area have been selected as screening vegetation. Existing topography will play an important role in mitigating the visual impacts of the Project.

The proposed development will include a substation area, Operation and Maintenance buildings, Control buildings, internal access road and skid modules. An indicative example layout is provided in the Preliminary Landscape Plan and will be further refined through the EIS process. It it proposed the site will be situated at a finished level of RL 21m to utilise the existing topography and site cut drop-offs to significantly minimise the visual impact.

Access to the site is from the northwest corner of the Site. Due to a decrease in the topography to the northwest, a combination of mounds and screen planting will adequately filter views from receivers to the northwest and west. Additional planting could be considered along the western boundary to assist rise in topography and site cut drop-offs to further mitigate the views.

The Proposed development is designed to cut into the existing topography which will further reduce the visual impact on surrounding landholders. A combination of existing vegetation, associated with the dwellings to the south and southeast, topography and site cut drop-offs will limit the impact. Additionally, mitigation to the northeast may involve a combination of mound and dense screen planting to filter views towards the Project.

To the north, existing vegetation and mounds associated with substation, will fragment views towards the project. To help reduce the potential visual impact, additional screen planting could be considered along the northern boundary with trees maintained to a minimum height of 4m within the transmission easement, subject to further consultation with TransGrid.

With the implementation of landscape works as illustrated in the **Preliminary Landscape Plan**, it is anticipated the Project could be implemented with a very low impact on the surrounding visual amenity.

Constraints and need for further assessment

Due to a relatively low height of the Project, existing landscape character assists in screening views to the Project from areas surrounding the site. A Landscape and Visual Impact Assessment (LVIA) will be prepared in the EIS Phase of the Project. During the EIS Phase, detailed site investigations will be undertaken from areas identified in the preliminary assessment as having potential visibility towards the Project.

Temporary visual impacts during construction for residences along the access route and cumulative impacts in consideration of the existing substation will also be considered in the detailed visual assessment and mitigation strategies developed where required.

R3, R5, R7, R8 and R10 are the nearby receivers most likely to be impacted by visual amenity. Focused consultation and mitigation measures will be implemented for these receivers as impacts are evaluated in more detail.

The EIS will show specialised modelling and visualisations (including photomontages) will be developed to illustrate the Project from key public viewpoints surrounding the Project. In addition to

the assessment from key public viewpoints, site inspections will be undertaken from dwellings identified as having potential visibility of the Project. Dwellings within 1000m of the Project will be assessed to determine the level of impact and ensure proposed mitigation measures can adequately reduce potential visual impacts.

The EIS phase will include an assessment of the visual impact resulting from all associated infrastructure and ancillary structures, and consideration of cumulative impacts with nearby infrastructure. Viewshed analysis (Zone of Visual influence figures) will be able to show consideration of the effectiveness of mitigation options such as additional vegetation planting, earth mounds and civil works. The reports, analysis and assessments will be consulted, reviewed and informed by engagement with the near receivers, to inform the final design and selection of mitigation measures.

Additional consultation would be undertaken broadly to understand the community's values regarding the visual landscape. This would assist in rating the impact levels for each receiver. Follow up engagement with specific affected residences identified as likely to have a view of the BESS infrastructure would be undertaken to identify the nature and significance of impacts and the need for mitigation measures.

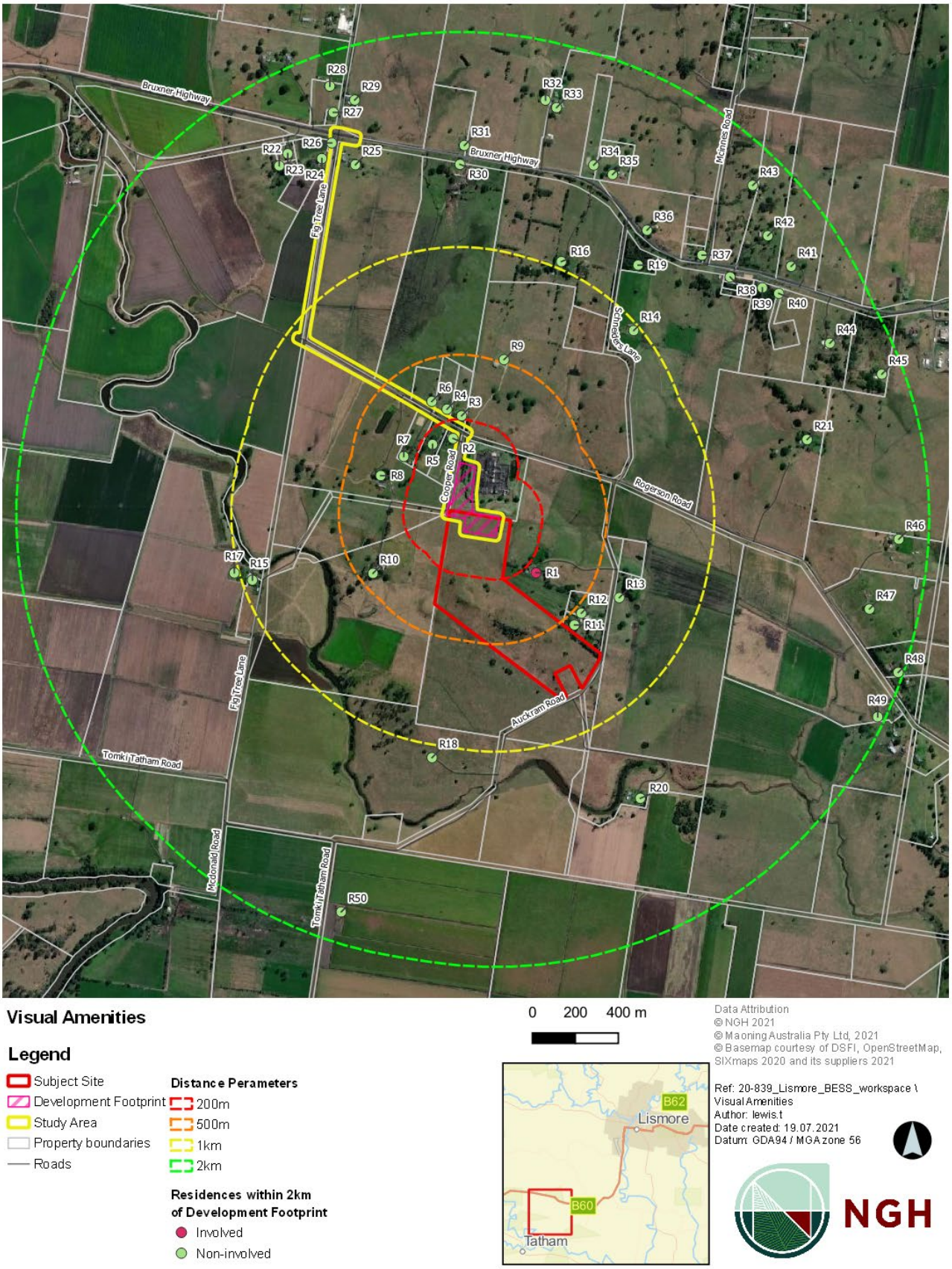

Figure 7-1 Visual receivers

7.1.2. Noise and vibration

The Development Footprint is located in a rural setting. The main sources of background noise would include local traffic along Fig Tree Lane, Rogerson Road and Cooper Road, as well as routine agricultural operations in the area. The land surrounding the Development Footprint is used for cropping and grazing, which would contribute to the generation of noise in the vicinity of the Proposal.

No residential receivers reside within the Development Footprint or the Subject Site. Figure 7-1 indicates that there are 32 non-involved and one involved residential receivers within 1 km of the Development Footprint. These receivers would be sensitive to increased noise and vibration levels from construction (including along the access route) and operation of the Proposal.

The greatest noise and vibration impacts are most likely to be experienced during the construction phase when traffic noise and onsite and activities such as earthworks are being carried out. Noise and vibration levels are anticipated to be greatly reduced in comparison during the operational stage, and there would be no permanent workforce onsite. Noise may be generated from components of the BESS infrastructure such as the battery, transformer, inverter and exhaust fans, dependant on the final arrangement and unit types chosen.

Constraints and need for further assessment

A construction and operational noise and vibration assessment will be undertaken as part of the EIS to assess potential noise impacts for affected residents, including cumulative impacts of the existing substation. The report would include either an assessment of the worst-case scenario or onsite monitoring to establish baseline noise levels for the assessment, and an assessment of road traffic noise. The assessment would be undertaken in accordance with the Interim Construction Noise Guideline (DECC, 2009), NSW Noise Policy for Industry (NSW EPA, 2017), Assessing Vibration: A Technical Guideline (DECC, 2006) and NSW ‘Road Noise Policy’ (DECCW, 2011). Measures to minimise noise impacts would be recommended for the construction and operation of the proposal.

7.1.3. Land use compatibility

The land use surrounding the Subject Site includes:

- Small and large lot primary production (including grazing, cropping and irrigated cropping)
- Residential (smaller estates and lifestyle blocks)
- Transport including the Bruxner Highway and local roads
- Utilities, including TransGrid substation and associated transmission lines

The total value of agricultural output from the Lismore LGA in 2015/2016 was $92 million (Community ID, 2016). Based on gross value of agricultural production, the most important agricultural commodities in 2015/2016 in the region were nuts (37%), livestock (29%) and milk (17%) (Community ID, 2016). These three commodities contributed 83% of the total value of agricultural production in the region.

Land use categories and areas within the Development Footprint are identified in Table 7-2 and Figure 7-2 below.

Table 7-2 Land use categories within the Study Area (DPIE, 2013).

Land use category	Area (ha) within the Study Area
3.2.0 Grazing modified pastures	15.0
5.4.0 Residential and farm infrastructure	1.3

The Development Footprint and Subject Site is zoned as RU1 Primary Production under the Lismore LEP 2012. The Development Footprint is currently used for cropping (lucerne and oats), horse grazing and as a local road (Fig Tree Lane).

The proposal would impact on a relatively small portion of the Subject Site, with a Development Footprint of approximately 3.6 ha of the 28.6 ha. The impact area of the BESS would be approximately 1.4 ha. The remaining portion of the Subject Site could still be used for grazing. Although grazing within the BESS footprint would not be possible throughout the construction, operation and decommissioning of the Proposal, the current land use of the Subject Site would be diversified to include electricity generation. Furthermore, the Development Footprint would be returned to its former state following decommissioning of the BESS, allowing for continued agricultural production.

There is no Crown Land associated with the Development Footprint.

A search of the DPIE MinView on 7th July 2021 identified no mineral exploration licences held over the Development Footprint or Subject Site.

Constraints and need for further assessment

The Proposal would involve earthworks and ground disturbance, as well as piling. This would be limited to the Development Footprint (up to about 3.6 ha). The impact of the Proposal on agricultural production in the region would be assessed in detail in the EIS and a Land Use Conflict Risk Assessment (LUCRA).

Figure 7-2 Land use categories within the Study Area

7.1.4. Biodiversity

Approach

Ecological values of the Subject Site were investigated by desktop assessment (searches were completed on the 7 July 2021) and site inspection by a senior ecologist (undertaken on 8 July 2021). This has included the following information sources:

- Existing threatened species listings under the BC Act and EPBC Act.
- Existing records of threatened species sightings in the Subject Site, as recorded in the BioNet Database.
- DAWE PMST search (nationally threatened species listed under the EPBC Act).
- Areas of outstanding biodiversity value declared under the BC Act.
- Areas of groundwater dependent ecosystems database.
- Priority weeds database.

A summary of the searches and the results is outlined in Table 7-3 below.

Table 7-3 Background searches and results.

Background search	Search area	Results
DPIE BioNet species sightings search of flora and fauna and communities listed as threatened under the BC Act	Subject Site with a 10km buffer (Locality)	The search results returned the following recorded threatened species within the search area: • 10 Threatened Ecological Communities • 11 flora species • 19 birds • 7 mammals • 1 reptile 20 records of Koala were returned within a 500m buffer of the Study Area.
PMST for species and populations listed as threatened under the EPBC Act	Subject Site with a 10km buffer (Locality)	The search results returned the following that have the potential to occur inside the Subject Site: • 2 Threatened Ecological Communities • 51 threatened species • 16 migratory species.
Biodiversity Values Mapping and areas of outstanding	Study Area	No areas of declared outstanding biodiversity value as listed under the BC Act are present within the Subject Site or the Development Footprint. There are no significant wetland communities in either the Subject Site or Study Area.

Background search	Search area	Results
biodiversity value		Additionally, no Biodiversity Values Mapping occurs within the Subject Site or Study Area.
Areas of groundwater dependent ecosystems database	Study Area	No areas of aquatic, terrestrial, or subterranean groundwater dependent ecosystems occur within the subject site or study area.
Priority weeds database	Study Area	A search of NSW WeedWise (NSW Department of Primary Industries) for weeds of national significance on the North Coast returned 52 results. Two of these weeds (Fireweed (*Senecio madagascariensis*) and Lantana (*Lantana camara*)) were identified in the study area during the site visit.

Site inspection

The site inspection included identifying biodiversity constraints over the Study Area, and high-level vegetation stratification, and observations of habitat features. Plant community types (PCTs) were determined based on the presence of diagnostic species via biodiversity assessment method (BAM) plots and rapid assessment. Three BAM plots were undertaken to determine vegetation integrity using an analysis of vegetation composition, structure and function. Degree of historical agricultural use and modification were also evaluated.

Land Category Assessment

Most of the Study Area has been cleared and are used as a road reserve (Fig Tree Lane, Cooper Road and Rogerson Road), for agricultural production, predominantly livestock grazing, and as a managed natural area adjacent to the TransGrid sub-station. A Land Category Assessment has been completed for the Study Area. The aim of this assessment was to determine the distribution of Category 1 – Exempt Land (Category 1 Land) and Category 2 – Regulated Land (Category 2 Land) across the Study Area. Category 1 Land is not required to be assessed under the BAM other than for prescribed impacts. This means that development on Category 1 Land is unlikely to generate a credit obligation. NGH propose that the Study Area has approximately 15 ha of Category 1 Land, where a history of disturbance and modification is evident and the groundcover composition is predominantly exotic. The Land Category Assessment will be provided separately to BCD for endorsement to guide further biodiversity assessment requirements.

Other areas of the Study Area contain clumps of scattered trees that would be considered Category 2 Land (0.09 ha), and rows of planted native trees (1.21 ha) that if impacted are required to be assessed under the BAM.

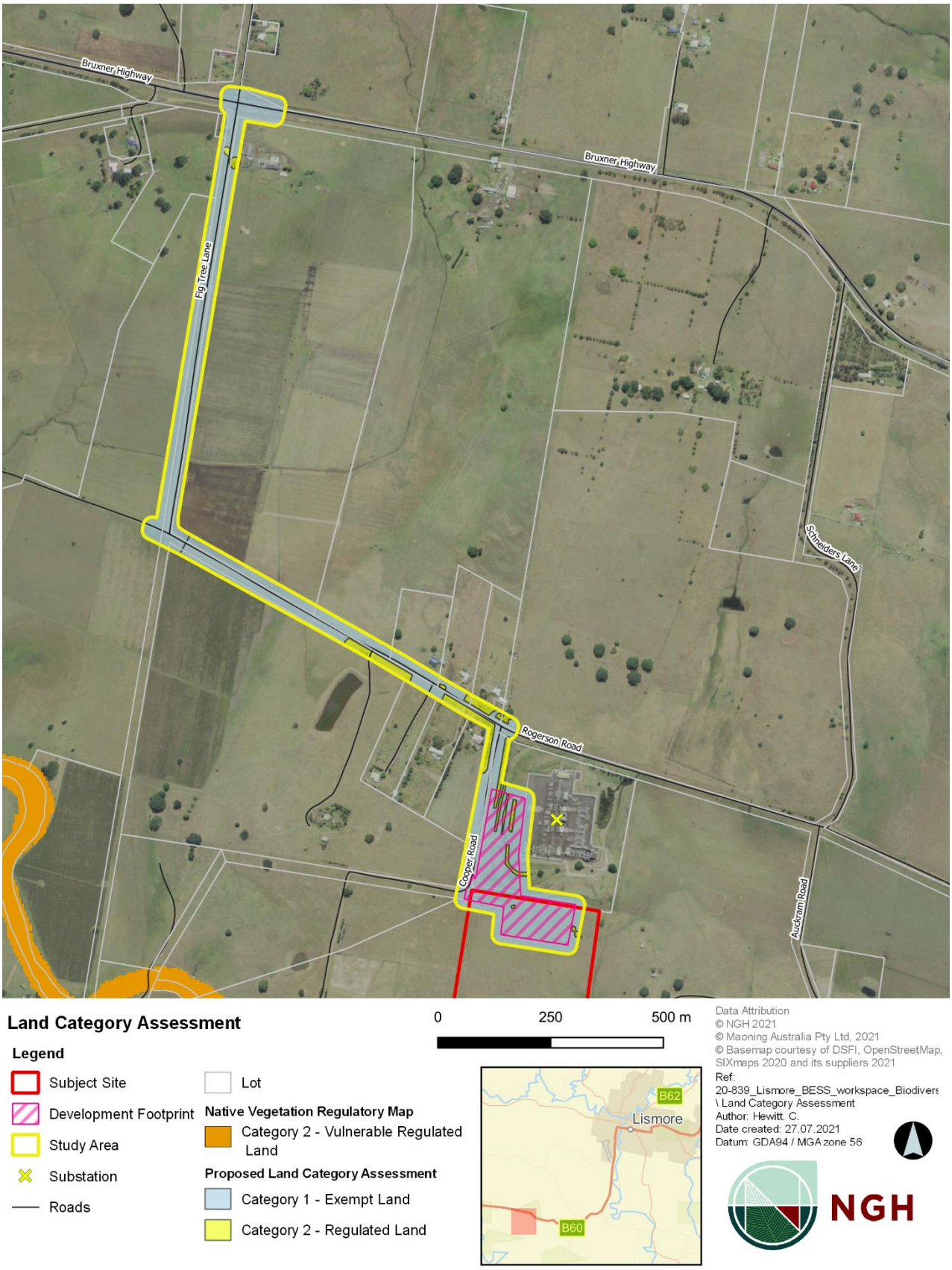

Figure 7-3 Land category assessment results

Vegetation condition and fauna habitat

The majority of the Study Area is highly fragmented and consists of agricultural grazing land containing modified pasture and a high proportion of non-native vegetation. Native vegetation is minimal in the form of isolated scattered native tree clumps and predominantly non-native roadside vegetation within the road reserve. There are also rows of planted native trees within the area adjacent to the TransGrid substation, and surrounding the rows of planted trees is mown, predominantly non-native groundcover vegetation.

An unnamed creek runs under Fig Tree Lane, within the Study Area, east to west towards Walshs Creek. Walshs Creek is mapped as Good condition Key Fish Habitat (KFH) on DPI's Fisheries NSW Spatial Data Portal. No part of this creek intercepts the study area; however, the unnamed creek is a tributary of Walshs Creek, is Strahler order 1 and 'Class 4 Unlikely key Fish Habitat'. It is likely that this creek is ephemeral and dependant on seasonal rainfall. Water was flowing in the creek during site assessment on 8 July 2021, but rainfall has been high in the area for much of 2021. During seasonal rainfall events this creek may incur a higher biodiversity value due to the presence of water, which can then attract various fauna species.

There is low potential for threatened flora or fauna species to occur due to the level of past modification. However, it is noted that, 20 previous records of the Koala (*Phascolarctos cinereus*) (listed as Vulnerable under both the BC Act and the EPBC Act) occur within 500m of the Study Area; the records date from between 2004 and 2019. There are no *Eucalyptus* species within the Study Area however potential to impact this and other threatened species will be considered further in the detailed biodiversity assessment. No other threatened species returned records within the Study Area.

Plant Community Types (PCT's) and Threatened Ecological Communities (TEC's)

Based on the preliminary inspection, one highly modified PCT was identified within the Study Area:

- PCT 1068 – Pepperberry - Giant Stinging Tree - Fig lowland rainforest in the NSW North Coast Bioregion.

This PCT has associated TECs:

- Listed BC Act (Endangered): Lowland Rainforest in the NSW North Coast and Sydney Basin Bioregions
- Listed BC Act (Endangered): Lowland Rainforest on Floodplain in the New South Wales North Coast Bioregion
- Listed EPBC Act (Critically Endangered): Lowland Rainforest in the NSW North Coast and Sydney Basin Bioregions
- Listed EPBC Act (Critically Endangered): Lowland Rainforest on Floodplain in the New South Wales North Coast Bioregion.

Due to the level of modification and disturbance, it is unlikely that any TEC occurs within the Study Area however, further assessment will confirm this.

Table 7-4 Summary of vegetation and habitat across the Study Area, including assignment of 'constraint' level.

PCT	Condition	Easting	Northing	Description	Image
1068	Highly modified	517661	6805563	Scattered native trees surrounded by highly modified groundcover (North of Fig Tree Lane) Constraint = MODERATE Category 2 - regulated land, surrounded by potential Category 1 – exempt land PCT 1068 - Pepperberry - Giant Stinging Tree - Fig lowland rainforest in the NSW North Coast Bioregion Two Rusty Figs (*Ficus rubiginosa*) surrounded by a dominant ground layer of Common Chickweed (*Stellaria media*) and other exotic groundcover species.	

PCT	Condition	Easting	Northing	Description	Image
-	Highly modified	517657	6805523	Highly modified groundcover dominated by non-native species (Fig Tree Lane) Constraint = LOW Potential Category 1 - exempt land	

PCT	Condition	Easting	Northing	Description	Image
1068	Highly modified	518442	6803883	Scattered native and exotic trees surrounded by highly modified groundcover (North-east of Lot 235 / DP 755728) Constraint = MODERATE Category 2 - regulated land, surrounded by potential Category 1 – exempt land PCT 1068 - Pepperberry - Giant Stinging Tree - Fig lowland rainforest in the NSW North Coast Bioregion Red Kamala (*Mallotus philippensis*), Hard Quandong (*Elaeocarpus obovatus*), Tuckeroo (*Cupaniopsis anacardioides*) and the exotic Japanese Hackberry (*Celtis sinensis)* surrounded by predominantly exotic groundcovers such as Elastic Grass (*Eragrostis tenuifolia*), South African Pigeon Grass (*Setaria sphacelata*), Crowsfoot Grass (*Eleusine indica*) and	

PCT	Condition	Easting	Northing	Description	Image
				Common Chickweed (*Stellaria media*).	
-	Highly modified	518375	6803906	Highly modified groundcover dominated by non-native species (North of Lot 235 / DP 755728) Constraint = LOW Potential Category 1 - exempt land	

PCT	Condition	Easting	Northing	Description	Image
1068	Highly modified	518290	6803934	Scattered native and exotic trees surrounded by highly modified groundcover (North-west of Lot 235 / DP 755728) Constraint = MODERATE Category 2 - regulated land, surrounded by potential Category 1 – exempt land PCT 1068 - Pepperberry - Giant Stinging Tree - Fig lowland rainforest in the NSW North Coast Bioregion Hard Quandong (*Elaeocarpus obovatus*), Quinine Bush (*Alstonia constricta*) and the exotic Japanese Hackberry (*Celtis sinensis)* surrounded by predominantly exotic groundcovers such as Rhides Grass (*Chloris* gayana), Elastic Grass (*Eragrostis tenuifolia*) and Bahia Grass (*Paspalum notatum*).	

PCT	Condition	Easting	Northing	Description	Image
-	Highly modified	518250	6804030	Highly modified groundcover dominated by non-native species (South-west of Lot 101 / DP 626660) Constraint = LOW Potential Category 1 - exempt land	

PCT	Condition	Easting	Northing	Description	Image
-	Highly modified	518256	6804077	Four rows of planted native vegetation surrounded by highly modified groundcover dominated by non-native species. Constraint = MODERATE Category 2 - regulated land, surrounded by potential Category 1 – exempt land Planted rows of trees are dominated by Weeping Bottlebrush (*Callistemon viminalis),* Mistletoe (*Amyema congener*), *Melaleuca decora, Sannantha* spp., Swamp Box (*Lophostemon suaveolens*), plus exotic broadleaf weeds and groundcovers such *as* Lantana (*Lantana camara*), Wild Tobacco Bush (*Solanum mauritianum*), Climbing Nightshade (*S. seaforthianum*), Small-leaved Privet (*Ligustrum lucidum*), *and* South African Pigeon Grass (*Setaria sphacelata*).	

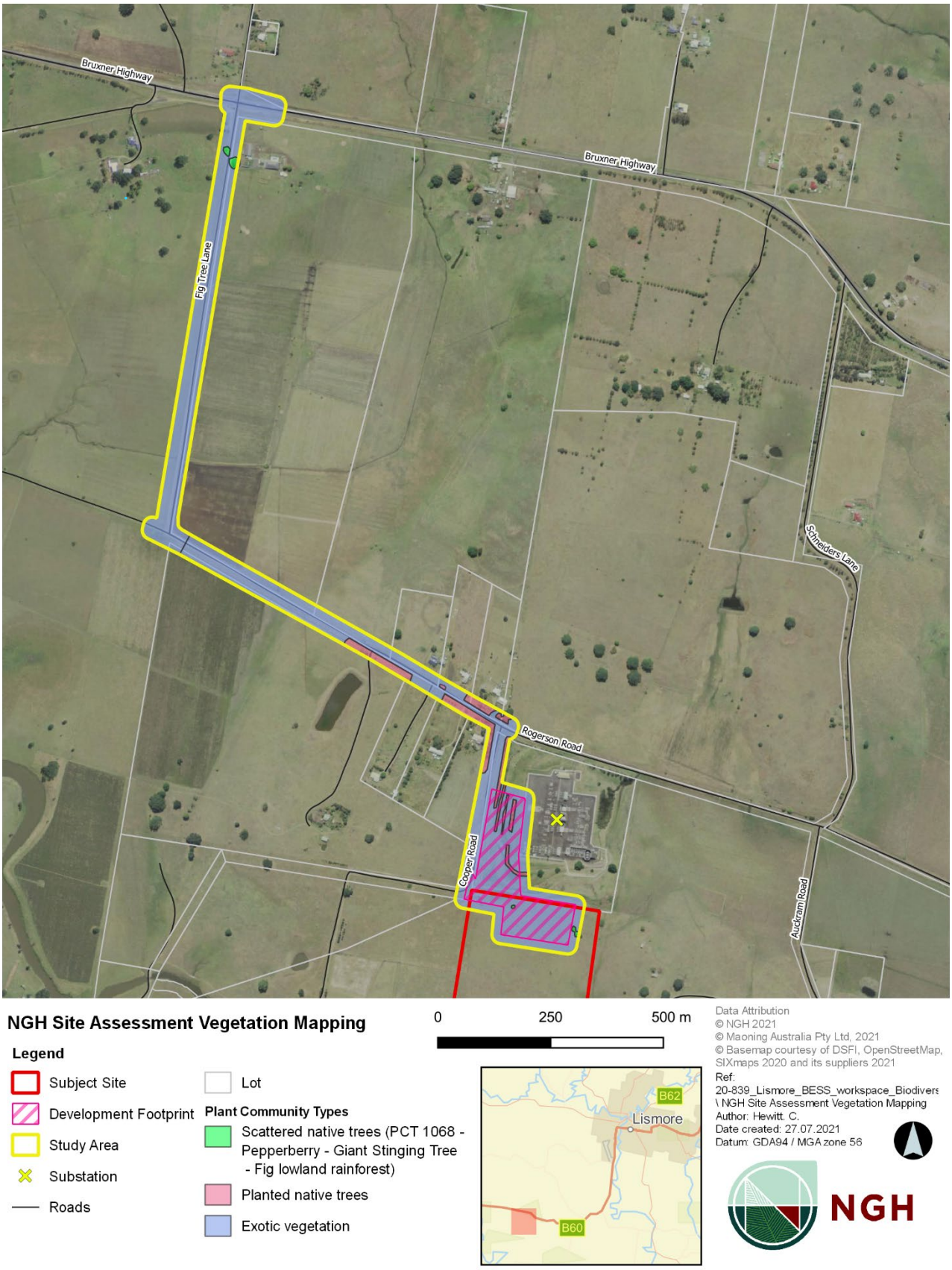

Figure 7-4 Plant Community Types

Constraints and need for further assessment

To inform the early Proposal planning process and investigation strategies, biodiversity features within the Study Area have been mapped to areas of High, Moderate, or Low constraints (Figure 8-1) to guide avoiding and minimising strategies for the proposal.

Based on the highly modified and disturbed nature of the site, minimal native species presence, lack of optimal habitat for threatened species and the avoidance of native vegetation and habitat features, it is considered impacts to biodiversity values would be negligible. However, as part of the EIS, the detailed ecological surveys and further investigation and assessment would be undertaken including:

- Finalisation of Land Category Assessment with input from BCD.
- Further BDAR assessment as required (focussing on land that is not Category 1).

7.1.5. Aboriginal heritage

A search of relevant heritage registers for Aboriginal sites and places provides an indication of the presence of previously recorded sites. A register search only reflects past survey effort however, as a starting point, the search will indicate whether any sites are known within or adjacent to the investigation area.

An extensive search of the Aboriginal Heritage Information Management System (AHIMS) was undertaken on 8 February 2021. The search identified the closest recorded site to be located approximately 5 km north-east of the Development Footprint.

There is a range of landscape features that have higher potential to contain Aboriginal objects. It is therefore necessary to consider whether there are landscape features of undisturbed land that may contain Aboriginal objects within the Subject Site. Landforms with increased Aboriginal heritage potential include:

- Areas within 200 m of water
- Areas located within a sand dune system
- Areas located on a ridge top, ridge line or headland
- Areas located within 200 m below or above a cliff face or
- Areas within 20 m of a cave, rock shelter or cave mouth.

None of these areas are relevant to the site.

An unnamed Strahler 1 waterway intersects the Development Footprint across Fig Tree Lane, therefore presenting a landform with elevated potential for Aboriginal archaeological material to exist within the Subject Site.

The Subject Site is underlain by two predominant alluvial geological landforms including:

- Holocene back swamp: organic mud, peat, silt, clay
- Holocene floodplain: silt, fluvial sand, clay

(Lismore 1:100 000 Coastal Quaternary Geology Map).

The floodplain landscape is likely to contribute to the post-depositional translocation of artefactual material or superimposition of these materials by shifting soils. The McKee, Disputed Plain and Leycester eSpade soil profiles underlying the Subject Site are characterised by moderate erosion

hazards accompanied by the moderate to high shrink well-cracking clays (Espade NSW Soil and Land Information 2020). This indicates that durable archaeological material, such as stone artefacts, may likely be displaced from their original position through post-depositional movement and as such surface expressions of these materials may no longer be identifiable.

There are few previous archaeological studies that have been undertaken in the McKees Hill and broader Lismore area, however, studies such as Collins (2000) demonstrate that historical sources indicate that there is a range of recorded and unrecorded sites within the Lismore area and in proximity to some previously recorded significant sites of djuril/dhurebil (Juribihl) sacred places. Conversely, Collins (2000) recognises also that topsoil movement through cultivation and floodplain translocation may have superimposed and shifted or obscured such sites from future surface surveys of the area. Historical farming practices, including ploughing and land forming, have occurred within the area and this may reduce the potential to locate in-situ Aboriginal heritage sites of significance, however, this disturbance also has the potential to expose sites that otherwise would not be obvious on the surface.

Constraints and need for further assessment.

An Aboriginal Cultural Heritage Assessment (ACHA) and associated stakeholder consultation process will be completed as part of the EIS. This will include involvement from registered Aboriginal parties in the development of field methods, field survey and review of the ACHA.

As a result of the consultation process to date three Aboriginal parties have registered interest for the project. If any Aboriginal Heritage sites are identified that may be potentially affected by the Proposal, mitigation measures would be determined in accordance with the *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (OEH, 2011a).

7.1.6. Historic heritage

A search of the Australian Heritage Database, NSW Heritage Register and s170 Register, and the Lismore LEP and the Richmond Valley LEP confirmed there are no historic heritage listings within the Subject Site. The site inspection did not detect any unlisted items.

Constraints and need for further assessment.

While there are no registered historic heritage items identified within the Subject Site, consideration of the potential for unexpected historic heritage items should be considered during the subsequent assessments for the Lismore BESS.

7.1.7. Hazards – bushfire and battery storage

The Development Footprint is not mapped as bushfire prone land. The nearest bushfire prone land is approximately 1400 m to the north east of the BESS Development Footprint. However, battery storage can elevate fire ignition risks as a result of temperature changes and a mixture of weather and environmental conditions. Transport and handling also pose a risk for fire.

It is acknowledged that the community will be interested in the safety aspects surrounding these types of projects and any hazards they may present, so a comprehensive hazard assessment will be undertaken to prove the safety of the infrastructure and equipment. This will assess compliance with relevant codes, standards and regulations and provide recommendations for minimizing hazards. Unlike smaller utilisations of battery products, a utility-scale project like this is held to a

high standard of assessment and scrutiny, to ensure that the infrastructure and equipment selected is safe, and safeguards and processes are in place to ensure no harm can arise from failure.

Constraints and need for further assessment

As outlined above, a Preliminary Hazard Assessment (PHA) would be carried out in consideration of DPIE's Hazardous Industry Planning Advisory Paper No. 6, 'Hazard Analysis' (HIPAP 6) and Multi-level Risk Assessment (MLRA) and submitted with the EIS.

The potential to increase risk of bushfire would be assessed in the EIS in accordance with the *Planning for Bushfire Protection Guideline 2019* (RFS, 2019). Emergency protocols would reflect advice from relevant agencies.

7.1.8. Traffic and access

The proposal site has existing road access from Coopers Road and Rogerson Road (local road under Lismore Council) via Fig Tree Lane (local road under Richmond Valley Council) off the Bruxner Highway which is a State road. According to the Transport for NSW Restricted Access Vehicles Map, the Bruxner Highway is approved for use for up to 26 m B-Doubles vehicles.

Existing traffic volumes on Fig Tree Lane, Rogerson Road and Coopers Road are expected to be minimal and limited to the local road network. However, traffic volumes on the Bruxner Highway would likely be higher given it is the main connection between the suburbs of Casino and Lismore and an east-west freight route.

During the anticipated nine-month construction period, the expected construction vehicle numbers are as provided in Table 7-5. The haulage route would be via the Port of Brisbane and then on State roads to the Subject Site. Construction vehicles would range from light vehicles to 26 m B-Doubles. Light vehicles would arrive during AM/PM peaks heavy vehicle deliveries would be spaced out during the day.

Operational traffic is thought to be negligible with a maximum of two one-way vehicle trips per day, with an average of two to four one-way trips per week.

Table 7-5 Construction staging and anticipated construction vehicle numbers

Construction stage	Estimated one-way vehicle trips per day		Total one-way vehicle trips
	Light vehicles	Heavy vehicles	Oversize and/or overmass vehicles
Stage 1: Site establishment **2 months**	40	7	5
Stage 2: Delivery of BESS infrastructure **3 months**	60	5	5
Stage 3: Installation of BESS infrastructure **4 months**	60	5	-

Site access is proposed to be via Bruxner Highway to Fig Tree Lane to Rogerson Road to Coopers Road.. The site access point would be located on Coopers Road. Further consultation with TfNSW and Councils will be undertaken to further identify construction access requirements.

Operational access roads would be established around the batteries and ancillary infrastructure to facilitate movement around the site and to allow for ongoing maintenance. Internal access roads would be between 4 m and 6 m wide and comprise of a gravel surface.

Constraints and need for further assessment

Some consultation regarding site access has been undertaken with TfNSW and Councils. Traffic consultancy Amber Organisation is currently preparing a TIA for the project, which will be provided to TfNSW for comment and be included as part of the EIS.

Further assessment of site access will be undertaken as part of the EIS to assess if intersection works or road upgrades are necessary for the Proposal to meet Council and TfNSW guidelines. Bruxner Highway, Fig Tree Lane, Rogerson Road and Coopers Road provide access to residences that reside adjacent to the Development Footprint and Subject Site.

Management of traffic, for safety as well as road pavement conditions, would be required.

The access route would be further investigated during the preparation of the EIS. Construction traffic impacts would be considered in the EIS and take into consideration existing traffic volumes and any requirements from the roads' authorities.

7.1.9. Hydrology, groundwater and water use

A tributary of Walshs Creek traverses the Development Footprint across Fig Tree Lane in a north-south direction (Figure 7-5). No other waterways or mapped dams are mapped to occur within the Development Footprint.

While areas of Fig Tree Lane and Rogersons Road contain areas mapped as Flood Prone Land according to the Lismore LEP 2012 (Figure 7-5), the remainder of the study area avoids Flood Prone Land.

The Department of Primary Industries (DPI) Fisheries portal lists the Freshwater Fish Community Status of Walshs Creek as 'Good'. The Threatened Southern Purple Spotted Gudgeon (SPSG) (*Mogurnda adspersa*) (FM Act) is mapped to occur within Walshs Creek. As such, Walshs Creek is a Type 1 Key Fish Habitat and Waterway Classification 1.

The Subject Site is not located within a groundwater vulnerability area.

A search of the EPBC Act Protected Matters Search Tool (PMST) was undertaken on the 6th July 2021 with a 10 km buffer of the Subject Site. There are no Wetlands of International Importance within 10 km of the Subject Site.

No Coastal wetlands under the *State Environmental Planning Policy (Coastal Management) 2018* are mapped within the Development Footprint or Subject Site.

Constraints and need for further assessment

As discussed in Section 6.1.12, SSD developments do not require a controlled activity approval (except an aquifer interference approval) per Section 91 of the WM Act.

Water quantities and sources required for construction and operation would be required to be detailed in the EIS as part of the project description.

Confirmation of the hydraulic function and ecological value of the waterways would be undertaken as part of the EIS, including a specialist hydraulic and hydrological analysis to address potential flood risks. Construction will require cutting into the slope at the proposed BESS location; this has potential for pooling of water and to exacerbate erosion. These issues would be assessed within the EIS.

Best practice management is recommended with regard to impacts that cannot be avoided (i.e. vehicle crossings) for waterways that qualify as ‘water front land’. However, there is no waterfront land within the Subject Site or Development Footprint; the waterways within the Development Footprint are perennial streams and do not require consideration under the WM Act.

Waterways that are more accurately defined as ephemeral waterways or areas of overland flow with moderate constraint may have certain ancillary infrastructure such as cables constructed over, provided that potential impacts have been determined and mitigation strategies prepared as part of the EIS.

The EIS would assess the impacts to waterways and include appropriate mitigation measures, such as buffering these areas for avoidance, where possible, and adherence to best practice guidelines (Guidelines for Controlled Activities on Waterfront Land; (DPI, 2012)) where avoidance is not possible.

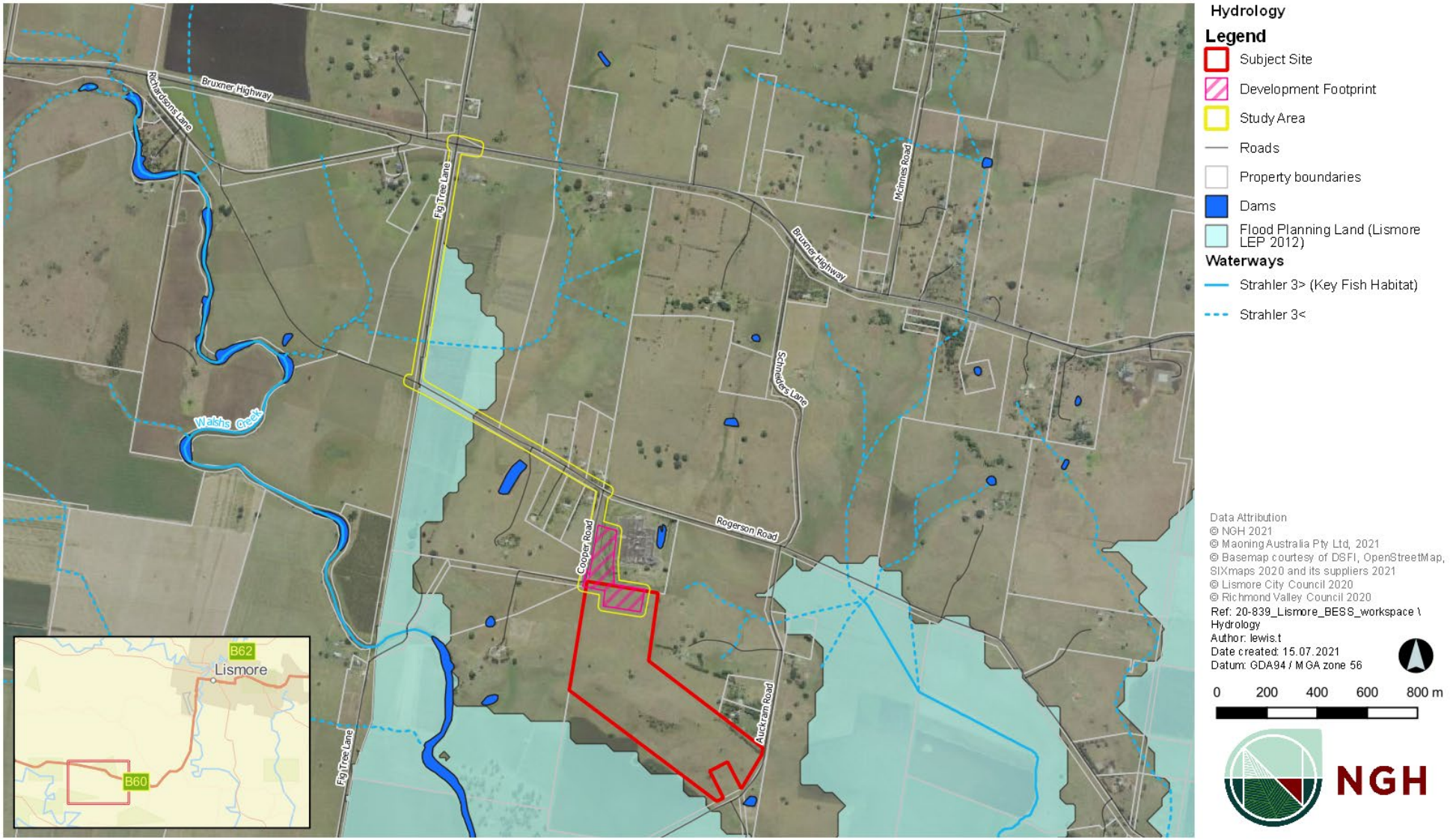

Figure 7-5 Hydrology

7.1.10. Soil and landforms

Three soil landscapes occur across the Development Footprint and Subject Site, being deep poorly drained Black Earths of the Disputed Plain soil landscape; shallow, well drained, stony Prairie Soils and Structured Plastic Clays of the Mckee soil landscape; and poorly to moderately well-drained alluvial Black Earths and Structured Clays. According to (eSPADE, 2021), the characteristics of these soil types include:

Poorly drained Black Earths:

- Highly plastic soils of low permeability.
- Permanently high watertables.
- High foundation hazard due to high shrink-swell.

Shallow, well drained, stony Prairie Soils and Structured Plastic Clays:

- Seasonal waterlogging.
- Reactive soils.
- Moderate erodibility.

Poorly to well-drained alluvial Black Earths and Structured Clays:

- Moderately Erodible.
- Localised waterlogging.
- Moderately plastic soils with low wet bearing strength.

The Subject Site and Development Footprint is mapped as BSAL with the exception of a portion of Fig Tree Lane. BSAL is land identified to have high quality soil and water resources capable of sustaining high levels of productivity (refer to Figure 7-6). The selection of the proposal site has been designed to:

- Reducing the disturbance footprint of the transmission line by maximising proximity to the TransGrid substation
- Reduce visual impacts to nearby residences
- Avoid flood-prone land to ensure limited impacts on surface hydrology
- Reduce the likelihood of adverse flooding impacts to the Proposal infrastructure during construction and operations

While the BESS is an SSD, the footprint of the Proposal is small, and impact to BSAL would be low. Where infrastructure can be developed outside BSAL, this would be investigated as part of the EIS. Complete avoidance of BSAL would prevent the development of this significant energy storage facility in this strategic location Impact of the facility on BSAL in relation to its availability and productivity on a local and regional basis would be assessed as part of the EIS. The Development Footprint is mapped within the Land and Soil Capability Assessment Scheme state-wide mapping as having the following:

- 3 – Moderate limitations
- 4 – Moderate to severe limitations.

Class 3 land has moderate limitations, however is considered to be land capable of a wide variety of land uses such as cropping, grazing, horticulture, forestry and nature conservation. Class 4 is

considered moderate capability land and has some restrictions on land use, requiring some specialised land management practices. Land use capability classes are shown in Figure 7-6.

NGH completed an online search of the NSW EPA databases on the 7th July 2021. The search of section 58 of the Contaminated Land Management (CLM) Act 1997 indicated that the Development Footprint has not been registered on the Record of Notices, or on the list of notified sites under section 60 of the CLM Act 1997 with regards to the Duty to Report Contamination.

Constraints and need for further assessment

The Development Footprint is mapped as BSAL. However, the Development Footprint is small – maximum 3.6 ha. The location has been selected for its proximity to the TransGrid substation' therefore the land use for the proposal is not incompatible with surrounding land uses.

Consideration of soil and erosion impacts, and proposed mitigation measures for the construction, operation and decommissioning of the BESS would be included within the EIS.

Presence of substantiative contamination within the Subject Site is considered unlikely. As such, it is anticipated that a detailed investigation of contamination would not be required within the EIS.

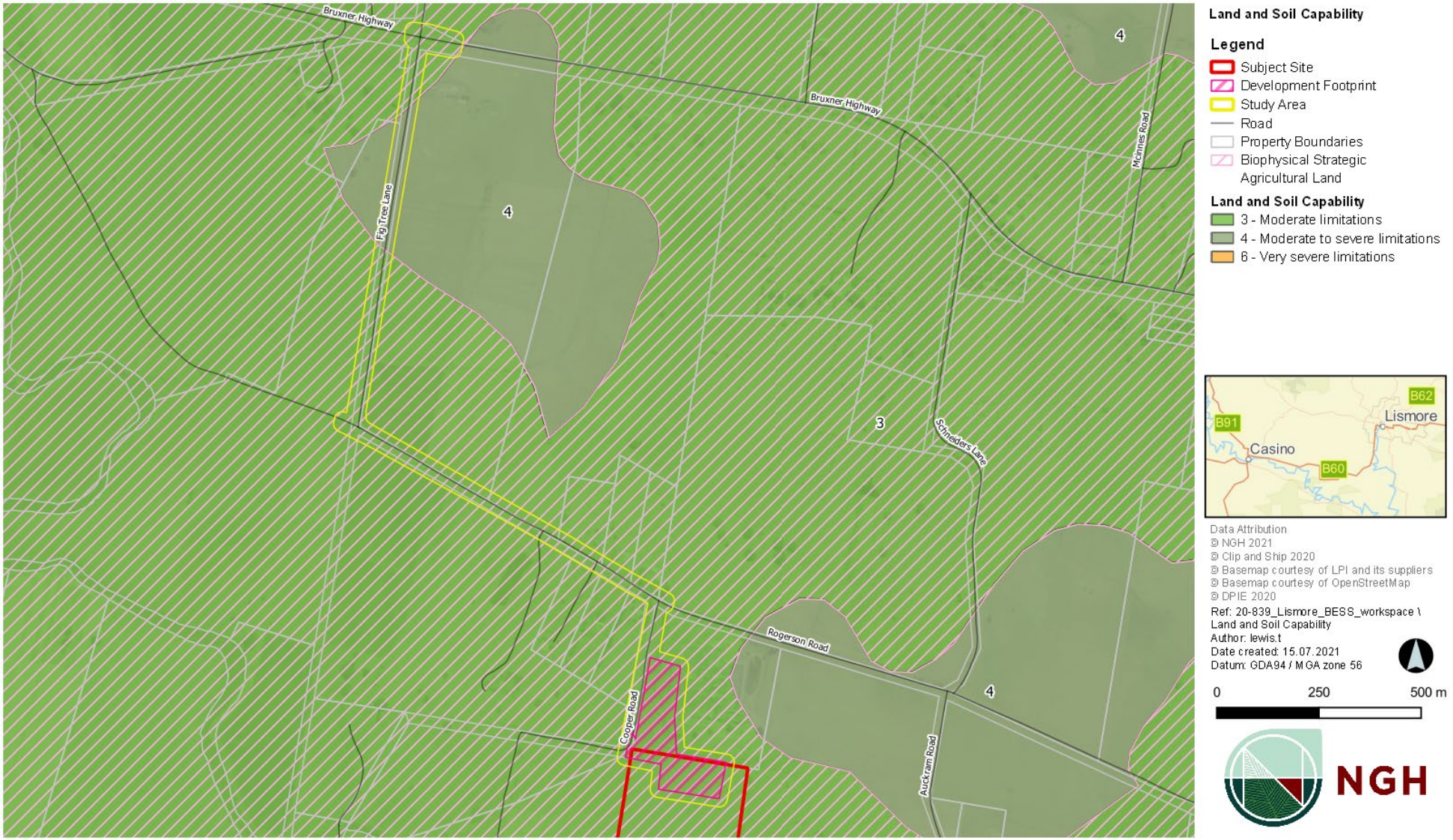

Figure 7-6 Land and Soil Capability

7.1.11. Social and economic impacts

The majority of the Subject Site and Development Footprint is located within the Lismore LGA, within the suburb of McKees Hill, with a portion of the site access (Fig Tree Lane) located in Richmond Valley LGA. Due to the limited population size of Mckees Hill, no Australian Bureau of Statistics (ABS) census data is provided for the suburb. The next closest major town is Lismore. Table 7-6 provides a statistical overview of the Lismore LGA and the suburb of Lismore.

Table 7-6 Statistical overview of the Lismore LGA and the suburb of Lismore

Statistic	Lismore (LGA) (ABS, 2016a)	Lismore (suburb) (ABS, 2016b)
Population	43,135	27,569
Average age	43	41
Main industry of employment	• Hospitals • Other Social Assistance Services • Aged Care Residential Services • Supermarket and Grocery Stores	• Hospitals • Other Social Assistance Services • Aged Care Residential Services • Supermarket and Grocery Stores
Unemployment rate	7.8%	8.8%

Economic benefits are expected to be generated by the construction, and to a lesser extent during operation of the Proposal. Benefits would include local employment opportunities and stimulus to the local economy by construction staff spending money either at local accommodation, local businesses (groceries, markets, shops) recreational facilities, or hospitality venues.

Constraints and need for further assessment

The EIS would assess potential social and economic impacts of the proposal, including issues perceived by the community to be of concern and cumulative impacts of other proposed developments in the region. An investigation of ways to spread the benefits of the Proposal into operation would also be included within the EIS. Consultation to date is summarised in Section 5 of this report and would continue into the operational stage of the Proposal.

7.2. Additional environmental issues

Additional environmental issues for consideration in the EIS are discussed in Table 7-7.

Table 7-7 Additional environmental issues

Aspect	Existing environment	Potential impacts	Constraints and need for further assessment
Hazards and risks – Electric and magnetic fields (EMF)	EMFs are produced within the vicinity of existing powerlines. Additional infrastructure proposed within the Subject Site such as inverters, connecting powerlines and the substation would produce additional EMF within their vicinity.	The EMF levels associated with the BESS infrastructure are well below the guideline for public exposure and would not be expected to have any adverse impact on human health. There can, however, be perceived impacts for nearby residents.	The EMF levels of the Proposal would be considered and assessed against safe exposure levels to population as part of the EIS. Standard design provisions are expected to ensure impacts comply with relevant guidelines together with communication of the issue as required.
Cumulative impacts	Cumulative impacts refer to the combined effect of impacts from several activities on a particular value or receiver. They may occur concurrently or sequentially. The relevant cumulative impacts are those associated with other known or foreseeable developments occurring in proximity to the Proposal. Major projects listed on the Major Projects Register within the Lismore LGA (and their current status) are:	Potential cumulative impacts of overlapping construction periods are primarily associated with traffic impacts, pressures on local facilities, goods and services and vegetation clearing. Based on this large minimum offset distance, it is unlikely that there would be cumulative impacts between the Proposal and these Major Projects.	Potential cumulative impacts would be assessed within the EIS. The timing of works associated with the proposed developments nearby would be monitored throughout the EIS stage to ensure appropriate mitigation measures are implemented, particularly in relation to construction traffic and pressure on local services and facilities within Casino and Lismore.

Aspect	Existing environment	Potential impacts	Constraints and need for further assessment
	• Lismore Hospital Redevelopment – Stage 3A and modifications– determination approved • Lismore Hospital Redevelopment – Stage 3B – determination approved • Lismore Hospital Redevelopment – Stage 3C – determination approved • Lismore Hospital – Cancer Care Centre – determination approved • Lismore Hospital – High Dependency Unit – determination approved • Lismore to Mullumbimby Transmission Upgrade – (and modifications) approved • Champions Quarry (and modifications) – Response to Submissions • Blakebrook Quarry (and modifications) – Assessment. Searches for nearby projects was limited to the Major Projects Register as these projects are generally of larger scale than projects captured under council development applications. The search indicated that no Major Projects are located within 5 km of the Proposal.		

8. CONSTRAINTS ASSESSMENT

A preliminary constraints assessment has been carried out for the Subject Site below, using the existing environment data as documented in Section 7.

Low, moderate and high environmental constraints are defined in Table 8-1 and may be viewed in Section 8.1 with reference to the 'developability' of the Subject Site. Where uncertainty exists, a higher constraint rating has been applied. Further investigation may reduce the constraint level. Mapping of the identified environmental constraints was undertaken for the Subject Site and is provided in Figure 8-1.

Table 8-1 Environmental constraints

Constraint	Definition
Low	Minimal impacts anticipated. Most suitable for development.
Moderate	Impacts will be minimised, where possible. These areas may require specific management protocols and may add some cost and time to the assessment and approval process.
High	Priority for further investigation.

8.1. Results

8.1.1. Low environmental constraints

Low environmental impacts are anticipated within the low constraint areas. These areas are the most suitable for development as they do not contain sensitive features such as waterways, receivers and high ecological values.

Biodiversity credits are unlikely to be generated within these areas or may have very low biodiversity credit requirements if they do. Low environmental constraint areas include:

- **Category 1 – Exempt Land:** land that has been subject to extensive clearing and modification as at 1 January 1990 or lawfully since. Not required to be assessed under the BAM other than for prescribed impacts.

The NGH Land category assessment is yet to be approved by BCD. This will confirm the presence and location of Category 1 – Exempt land.

8.1.2. Moderate environmental constraints

Impacts should be minimised where possible in areas categorised as having moderate environmental constraints. These areas include:

- **Potential residences** in close proximity (within 0 km – 1 km) of the Subject Site, who may be affected by visual impact, traffic noise and vibration, and dust during construction and operation.

- **BSAL** within the Subject Site which may require additional soil assessment to ground truth. It should be noted that BSAL identification was originally developed to ensure that mining or coal seam gas would be subjected to an additional level of scrutiny via a Gateway process if BSAL was found - an independent, upfront and scientific assessment of the land and water impacts of the Proposal. However, the construction and operation activities of a BESS are significantly less intrusive than mining or coal seam gas developments as all disturbances to soils are occurring in the top few metres the soil, and once the BESS is decommissioned, the former land use of the Subject Site can be re-instated.
- **Waterways** Works in or that significantly affect waterways may require additional assessment, justification and management. Works that may affect local hydrology are likely to require specialist input from a hydrologist. This may include modelling to assess impacts in relation to placement of infrastructure in order to protect hydrological function of waterways and protect soils from erosion. No major works are planned in waterways, and DPIE assumes permit responsibility from the Natural Resource Access Regulator (NRAR) for any waterway works in SSDs. Best practice guidelines would be followed in these areas.
- **Biodiversity** mapped as 'moderate constraint' includes isolated patches of trees or scattered trees inside cultivated paddocks, planted native vegetation and non-woody vegetation composed of native and exotic groundcovers that cannot be classed as Category 1 – Exempt Land. These areas do not have a history of being cultivated or modified.

8.1.3. High environmental constraints

- No high environmental constraints have been identified.

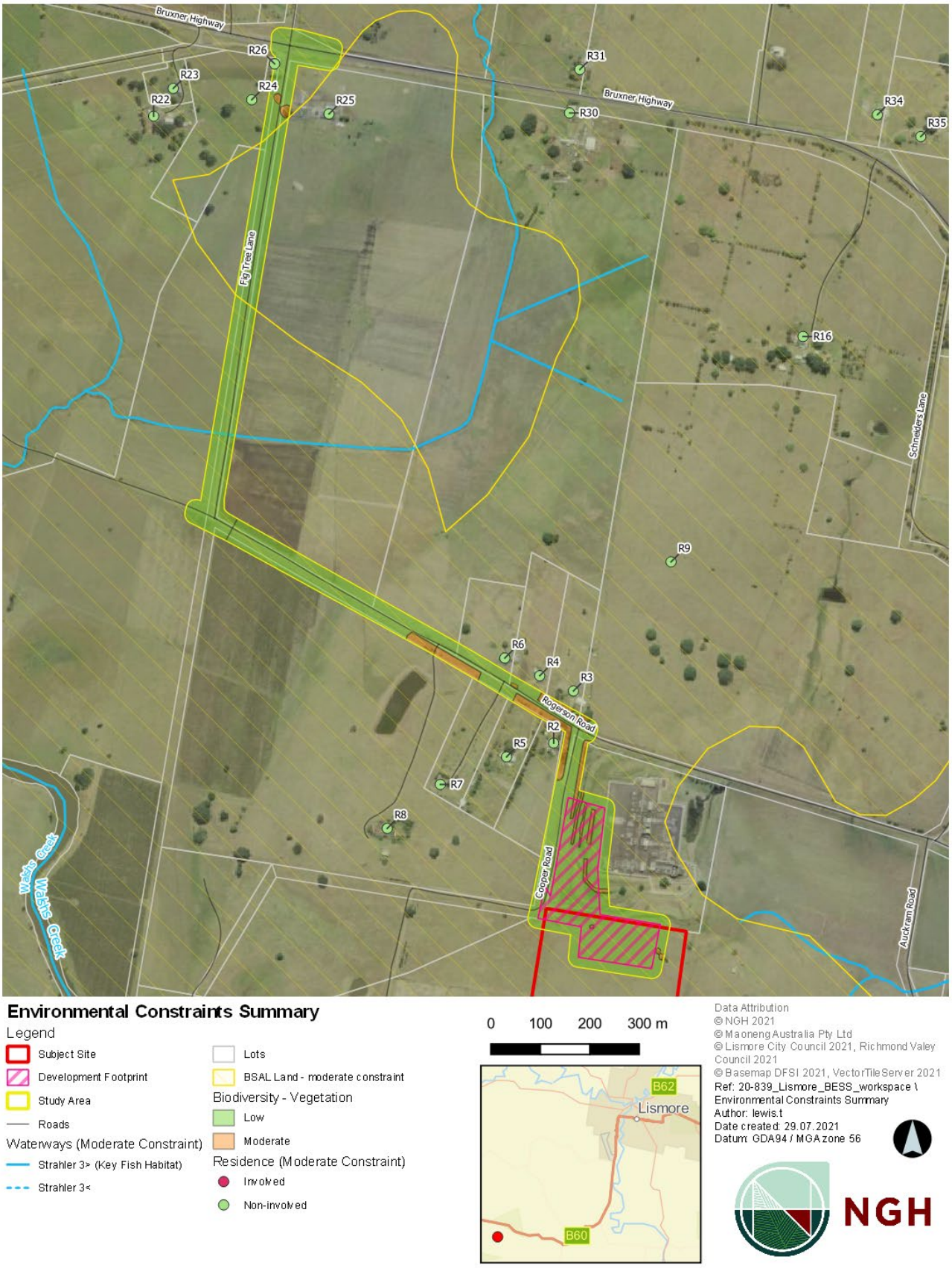

Figure 8-1 Environmental constraints summary

9. CONCLUSION AND RECOMMENDATIONS

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

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

- **Visual amenity**, particularly residential receivers within 1 km of the Development Footprint.
- **Noise and vibration**, particularly residential receivers within 1 km of the Development Footprint.
- **Hydrology, groundwater and water use**, in particular, potential impacts to flooding and waterways.
- **Biodiversity**, no high constraint zones apply. Areas of moderate constraint will be assessed in accordance with the BAM.
- **Land use compatibility**, particularly economic impacts to the region and BSAL.
- **Aboriginal heritage,** particularly the potential for significant sites and objects.
- **Hazards – bushfire and battery storage**, particularly bushfire risk and hazard risk due to the size of the proposed BESS system.
- **Traffic and access**, particularly potential requirement for road upgrades and intersection treatments.
- **Soil and landforms**, particularly BSAL, soil limitations and potential construction hazards.
- **Social and economic impacts** particularly potential impacts to surrounding localities in relation to cumulative construction impacts.

Secondary issues would also be investigated, commensurate with risk, in the EIS

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

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APPENDIX A CONSULTATION

Comments on the scoping report for the original site were received from DPIE on 16 February 2021. These comments and subsequent responses are summarised below.

Comment	Response
Consultation: Please provide further details of consultation to date, including details of consultation outcomes, issues concerns/ raised in this consultation, and details of how the proposed development has been designed in consideration of these issues/ concerns (e.g. noise, traffic, visual impacts).	Further details of consultation undertaken to date have been provided. Refer to Section 5 for further details.
Amenity: It is noted that there are 14 non-associated residences within 1 km of the site. Please provide details of how the project has been designed in consideration of potential amenity impacts on surrounding residences, including visual, noise and traffic impacts.	Further details have been provided on project design as it relates to visual amenity. Refer to Section 7.1.1 for further details.
Land use Compatibility: It is noted that the development footprint potentially coincides with BSAL. The PEA will need to provide further justification regarding the location of the footprint within BSAL.	Further details have been provided on project design as it relates to BSAL. Refer to Section 7.1.9 for further details.

Comments on the scoping report for the updated site were received from DPIE on 6 September 2021. These comments and subsequent responses are summarised below.

Comment	Response
Please update the Scoping Report to include the following information: - Further details of the proposed visual mitigation measures (including but not limited to landscaping plan / strategy, Zone of Visual Influence figures and indicative locations of screen plantings / landscaping / mounding within the development site) to address potential visual impacts on surrounding residences.	Further information on visual impacts is provided in Section 7.1.1. A Preliminary Landscape Plan is provided in Appendix B.

APPENDIX B PRELIMINARY LANDSCAPE PLAN

Lismore Battery Energy Storage System

Preliminary Landscape Plan

moir
landscape architecture

Prepared for: **Maoneng Australia Pty Ltd**

Project No: **1969** Issue: **Rev C** Date: **September 2021**

DOCUMENT HISTORY AND STATUS

Project No: **1969**

Project Name: **Lismore Battery Energy Storage System | Landscape Plan**

Issue	Status	Date of Issue	Author	Approved by
A	Draft issued for review	17.09.2021	SW	AR
B	Draft issued for review	21.09.2021	SW	AR
C	Final Issue for Submission	22.09.2021	SW	AR

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LEGEND

- Buffer zone screen planting to match existing character. For species and arrangements refer LP03
- Mounds with planting to screen views of the Project. For details refer LP02.
- Transmission Easement
- Indicative Substation Area
- Indicative Operation and Maintenance, Control Buildings
- Indicative Battery and Skid Modules
- Indicative internal access road
- EX. 25 — Approx. Existing levels
- +RL 21.00 — Approx. Finished levels

GENERAL NOTES:

- Refer to LP02 for Site cut dropoffs and mounding plan.
- Refer to LP03 for Indicative Planting Schedule. Nominated plant species to be sourced from local suppliers and collect local seeds where possible.
- Proposed fence must be constructed according to Client's specifications.
- Protection fence to be provided around existing trees during construction and temporary stock proof fence to be constructed during plant establishment period.
- All existing vegetation and tree cover to be retained and protected.
- Ongoing weed control and appropriate non-residual herbicide, if needed, to be used during plant establishment period.

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ARCHITECT:

ENGINEER:

CLIENT:
Maoneng Australia Pty Ltd

NOTE: DRAWING PURPOSES FOR APPROVAL ONLY. NOT FOR CONSTRUCTION.

No: DATE: REVISION: BY:

PROJECT:
Lismore Battery Energy Storage System
85 Auckram Road, Mckees Hill

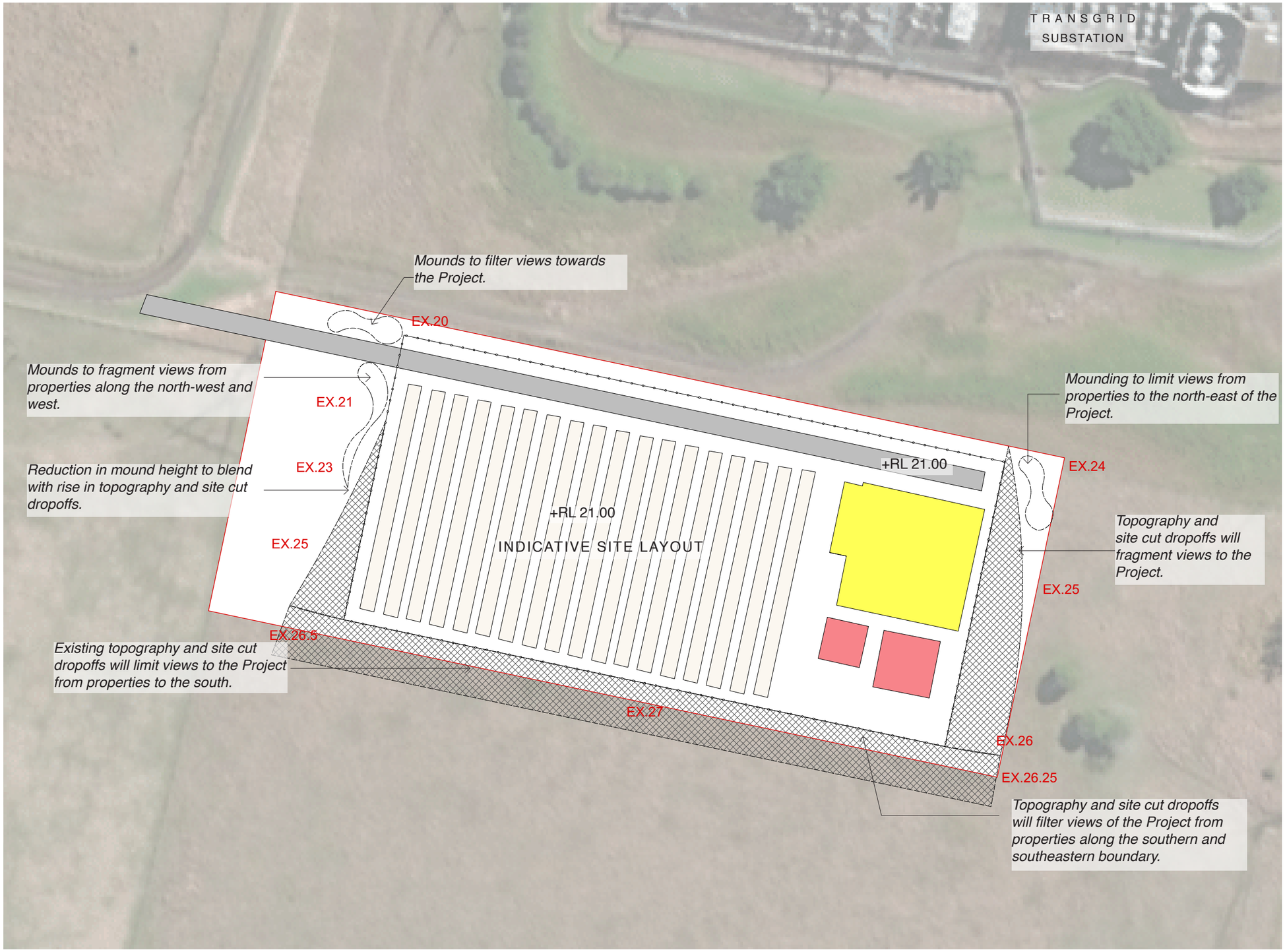
Status: DRAFT

North

PRELIMINARY LANDSCAPE PLAN

SCALE: 1:1000
ORIGINAL DRAWING AT A1.
Drawn By:
Checked By: Approved By:

Project No. 1969
Drawing No. LP01 Rev



LEGEND

- Indicative Substation Area
- Indicative Operation and Maintenance, Control Buildings
- Indicative Battery and Skid Modules
- Indicative internal access road
- EX.23 — Approx. Existing levels
- +RL 21.00 — Approx. Existing levels
- Approx. Extent of cuts and dropoffs
- Approx. Location of screening mounds

GENERAL NOTES:

- Refer to LP03 for Indicative Planting Schedule. Nominated plant species to be sourced from local suppliers and collect local seeds where possible.
- All levels are indicative only. Final finished levels to be confirmed with structural and civil plans.

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ARCHITECT:

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No: DATE: REVISION: BY:

NOTE: DRAWING PURPOSES FOR APPROVAL ONLY. NOT FOR CONSTRUCTION.

PROJECT:
Lismore Battery Energy Storage System
85 Auckram Road, Mckees Hill
DRAFT

Status:

North

CUT DROPOFFS AND MOUNDING PLAN

SCALE: 1:500
ORIGINAL DRAWING AT A1.
Drawn By:
Checked By: Approved By:

Project No. **1969**
Drawing No. LP02
Rev

Typical Planting Schedule

Code	Botanical Name	Common Name	Pot Size	Mature Height	Mature Width
Trees					
ACM smi	*Acmena smithii*	Lilly Pilly	45 Ltr	12m	6m
ELA ret	*Elaeocarpus reticulatus*	Blueberry Ash	45 Ltr	9m	4m
LOP con	*Lophostemon confertus*	Queensland Brush Box	45 Ltr	15m	10m
TRI lus	*Tristaniopsis laurina 'Luscious'*	Kanooka Gum	100 Ltr	12m	6m
Shrubs					
ACA flo	*Acacia floribunda*	White Sally Wattle	300 mm Pots	3m	2m
CAL slm	*Callistemon viminalis 'Slim'*	Bottlebrush	300 mm Pots	3m	1.3m
GRE ros	*Grevillea rosmarinifolia*	Rosemary Grevillea	300 mm Pots	1.2m	2m
HAK sal	*Hakea salicifolia*	Willow-leafed Hakea	300 mm Pots	3m	2m

PLANT IMAGERY


Acmena smithii


Elaeocarpus reticulatus


Tristaniopsis laurina

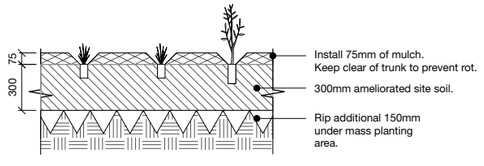

Lophostemon confertus


Grevillea rosmarinifolia

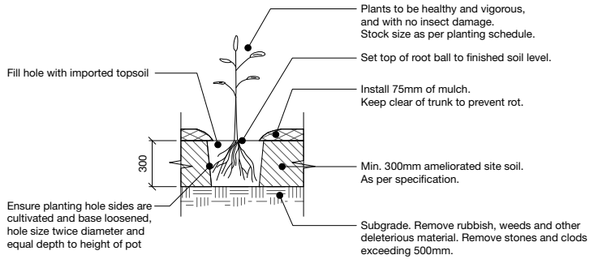

Callistemon viminalis 'Slim'


Hakea salicifolia

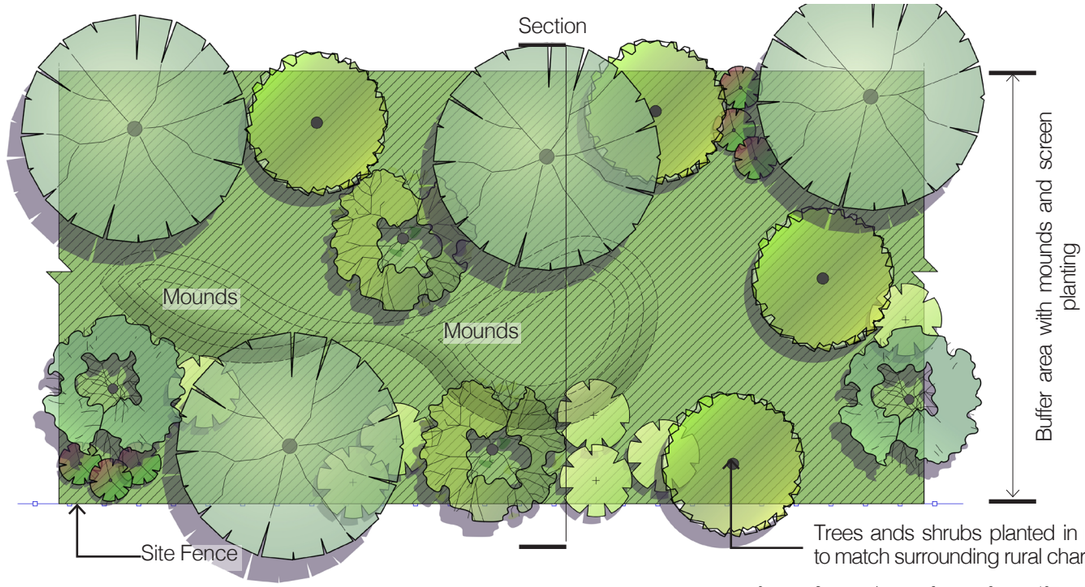

Acacia floribunda



DETAIL 01 - TYPICAL MASS PLANTING
Scale 1 : 20 @ A1

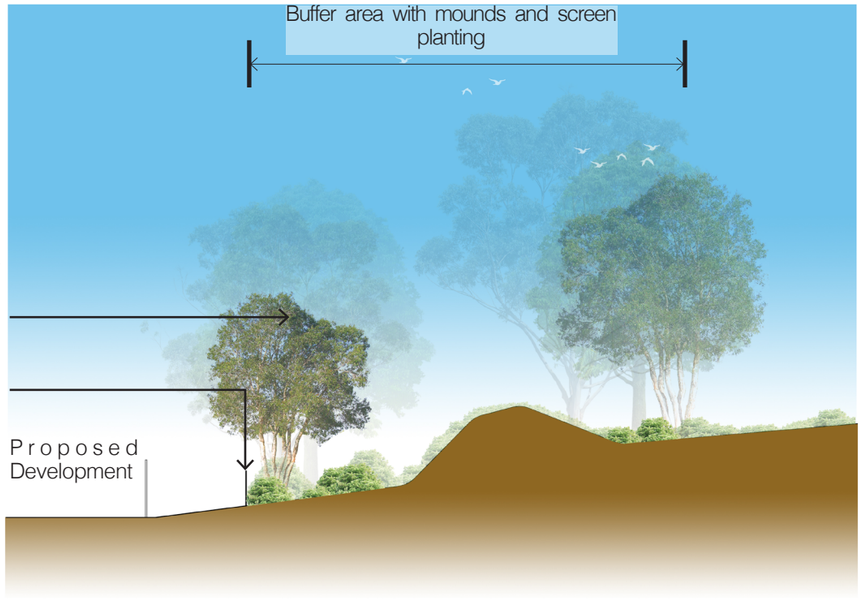


DETAIL 02 - TYPICAL TUBESTOCK PLANTING DETAIL
Scale 1 : 20 @ A1



PLAN - TYPICAL BUFFER ZONE WITH MOUNDS AND SCREEN PLANTING

Screen planting with random groups of nominated species and mounds to minimise visual impact towards the Project.



SECTION - TYPICAL SCREEN PLANTING

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PROJECT:
Lismore Battery Energy Storage System
85 Auckram Road, Mckees Hill

Status: DRAFT

North

TYPICAL PLANTING PLAN, SCHEDULE AND IMAGERY

SCALE: AS SHOWN
ORIGINAL DRAWING AT A1.
Drawn By:
Checked By: Approved By:

Project No. **1969**
Drawing No. LP03
Rev