Premise

FIRM POWER

Land Use Conflict Risk Assessment (LUCRA)

IN SUPPORT OF A STATE SIGNIFICANT DEVELOPMENT APPLICATION

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1. INTRODUCTION

1.1 Background

Premise has been commissioned by the Proponent (Firm Power) to prepare this Land Use Conflict Risk Assessment (LUCRA) to support a State Significant Development Application (SSD 29704663) for a proposed Battery Energy Storage System (BESS) and associated works at 20-24 Sandy Creek Road, Muswellbrook. The proposed development is known as the Muswellbrook BESS and will impact parts of three (3) lots, Lot 11 DP839233, Lot 12 DP839233 and Lot 15 DP905479.

The site is within the Muswellbrook Shire Council (MSC) Local Government Area (LGA).

The site is depicted in its regional context and local context in **Figure 1** and **Figure 2.**

1.2 Scope

This LUCRA has been prepared to address relevant requirements of the Secretary's Environmental Assessment Requirements (SEARs) issued for the project by the (then) NSW Department of Planning, Industry and Environment (DPIE) and to support the project Environmental Impact Statement (EIS).

SEARs relevant to this LUCRA are provided in **Table 1.**

It should be noted that this LUCRA addresses the requirement to prepare a LUCRA but does not include a detailed consideration of site selection and suitability, zoning provisions or assessment of impacts; those matters are addressed in the EIS.

Table 1 – Relevant SEARs

Source	Requirement	Addressed
General Requirements	• *a strategic justification of the development focusing on site selection and the suitability of the proposed site with respect to potential land use conflicts with existing and future surrounding land uses (including existing land use, residential and rural development, subdivision potential, Crown lands adjacent to the site and neighbouring industrial and infrastructure developments);*	**Section 3 - Land Use Conflict Risk Assessment** **Appendix A- Risk Assessment** Note: This LUCRA addresses land use conflict. Strategic justification of the development is addressed within the EIS.
SEARS- Key Issues (Land)	*An assessment of the potential impacts of the development on existing land uses on the site and adjacent land, including:*	See below
	• *A consideration of the project's location in a mine subsidence district, flood prone land, acid sulphate soils, Crown lands, Travelling Stock Reserve (TSR 70196 Lot 15 DP905479), mining, quarries, mineral or petroleum rights;*	**Section 2.2 - Nature of the locality**

Source	Requirement	Addressed
	An assessment of the compatibility of the development with existing land uses, during construction, operation and after decommissioning, including:	See below
	• *consideration of the zoning provisions applying to the land, including subdivision;*	**Section 2.2.1 - Land use zones**
	• *completion of a Land Use Conflict Risk Assessment in accordance with the Department of Industry's Land Use Conflict Risk Assessment Guide; and*	**Section 3 - Land Use Conflict Risk Assessment** **Appendix A- Risk Assessment**
NSW Department of Planning, Industry and Environment -Crown Lands Document Ref 21/04539#38	• *An accurate description of Crown land within the development area, specifying the land owner, reserve purpose, reserve manager, and any third-party interests, including other permit or licence holder(s), easements, aboriginal land claims and native title considerations and relevant legislation.* • *A description of any works, including the construction and maintenance of any access tracks, transmission lines, storage of plant or equipment, etc. proposed on the TSR.* • *An assessment of the impact of the proposal on the TSR, including any conflicts with the existing land use(s), and compatibility with the reserve purpose of "travelling stock" and the Local Land Services Act.* • *A description of approvals or agreements required to authorised the proposed activity and use of the TSR.* • *During preparation of the EIS the proponent is to consult with the Department, as an affected landowner, and the Hunter LLS as land manager.*	**Section 2.2 - Nature of the locality** **Section 2.2.5.1 - Crown land** **Section 2.2.5.3 - Native title**
NSW Department of Regional NSW -Mining Exploration and Geoscience (MEG) – Geological Survey of NSW (GSNSW) DOC21/1079556	• *Consolidated Coal Lease (CCL) 713 held by Muswellbrook Coal Company Ltd is located adjacent to the proposal and should form part of stakeholder engagement in order to ensure the title holder is aware of the project.* • *Check for any mineral and energy titles that may be granted (at a later stage) in the vicinity of the subject site (including areas proposed for electricity transmission infrastructure and transmission lines) during all decision-making stages of the project to ensure that other stakeholders (eg title or tenement holders) with interest in the area are aware of the BESS project.*	**Section 2.5 - Consultation** **Section 3 - Land Use Conflict Risk Assessment**

Figure 1 – Regional context

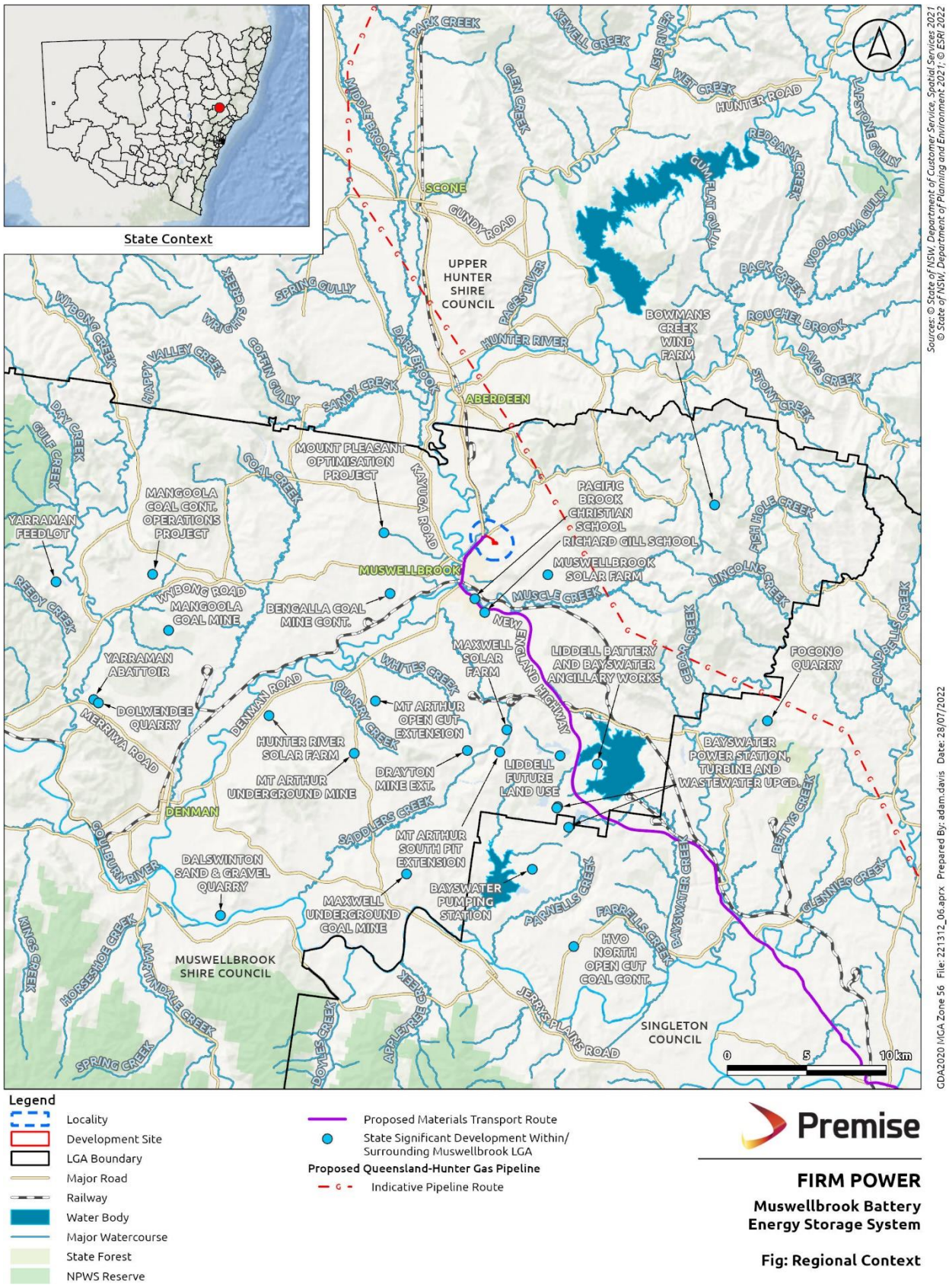
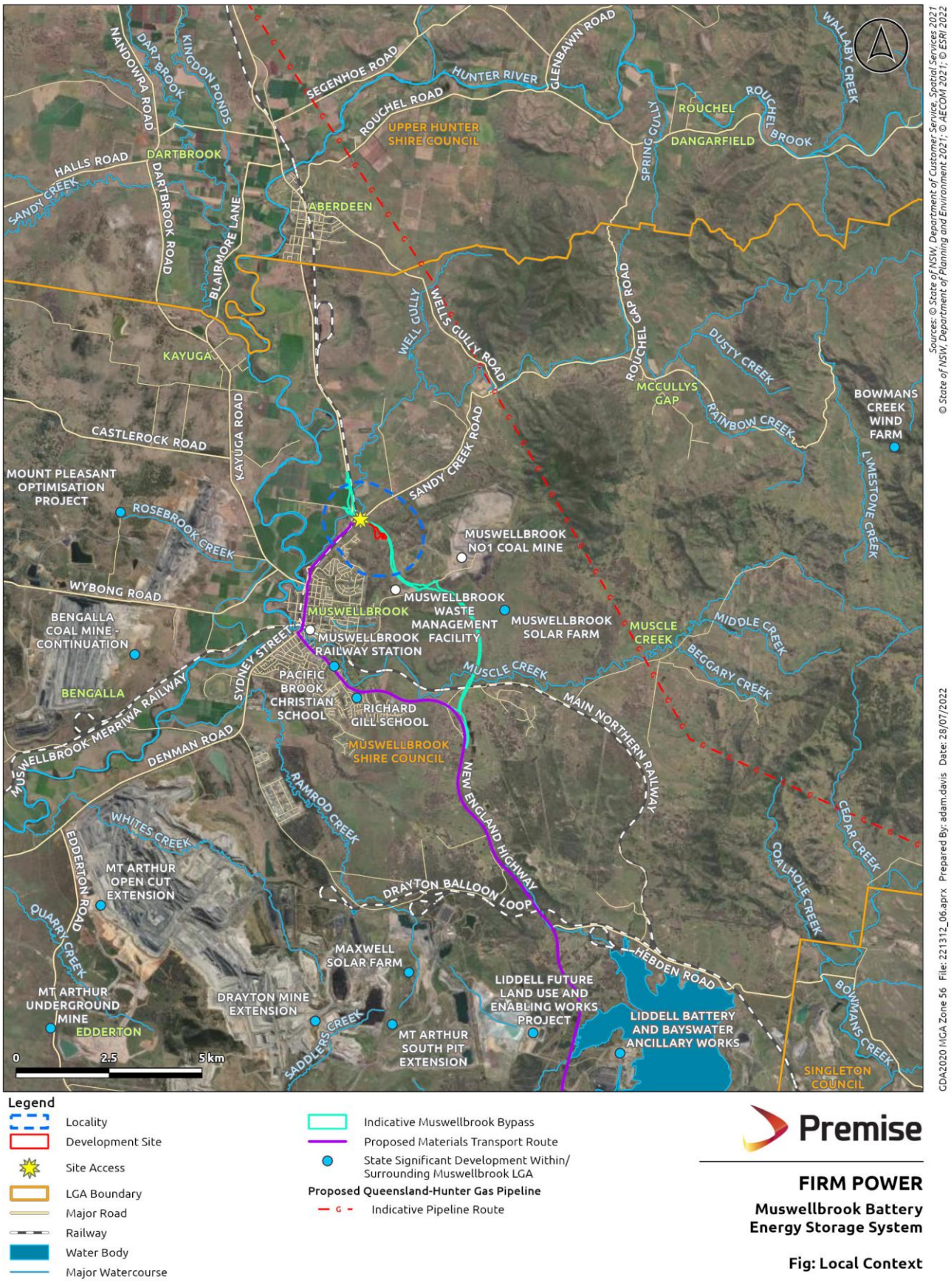


Figure 2 – Local Context



1.3 Methodology

This LUCRA has been prepared in accordance with the *Land Use Conflict Risk Assessment Guide* (DPIE, 2011) (LUCRA Guide).

The LUCRA is a system to identify and assess the potential for land conflict to occur between neighbouring land uses. Land use conflicts occur when one land user is perceived to infringe upon the rights, values or amenity of another. The LUCRA enables a systematic, consistent, and site-specific conflict assessment approach. Through evaluating land use compatibility and potential land use conflicts appropriate risk reduction management strategies can be identified.

As stated in the LUCRA Guide, a LUCRA aims to:

- accurately identify and address potential land use conflict issues and risk of occurrence before a new land use proceeds or a dispute arises
- objectively assess the effect of a proposed land use on neighbouring land uses
- increase the understanding of potential land use conflict to inform and complement development control and buffer requirements, and
- highlight or recommend strategies to help minimise the potential for land use conflicts to occur and contribute to the negotiation, proposal, implementation and evaluation of separation strategies.

The assessment process in the LUCRA Guide has been applied to achieve the above aims. These steps are provided in **Table 2**, including a reference column to the section where each step is addressed in this report.

Table 2 – LUCRA steps

Steps	Requirements	Reference
Step 1: Gather information	• *Describe the nature of the proposed land use change and the proposed development.* • *Describe and record the major activities associated with the land use change and their frequency. Include periodic and seasonal activities that have the potential to be a source of a complaint or conflict* • *Appraise the topography, climate and natural features of the site and broader locality* • *Undertake a site history search, review the previous environmental assessments and approvals for the site* • *Inspect the site and interview relevant owners/operators of adjacent properties* • *Describe and record the main activities of the adjacent properties and their frequency. Include water-based activities that may be adversely impacted, such as oyster farming; and,* • *Compare and contrast the proposed and adjoining/surrounding land uses and activities for incompatibility and conflict issues*	**Section 2**
Step 2: Evaluate the risk level for each activity	Each proposed activity is recorded, and potential land use conflict is evaluated with in consideration of the: • *Probability of occurrence and* • *Consequence of the impact* The risk ranking matrix is utilised to determine a risk ranking for each activity and results are recorded into an initial risk evaluation table.	**Section 3.2**

Steps	Requirements	Reference
Step 3: Risk reduction management strategies	Management strategies and mitigation measures that affect the probability and consequence of activities are identified. Revised risk rankings are calculated, and performance targets are set, detailing how the effectiveness of the strategy will be monitored The objective of this step is to identify and define controls that lower the risk ranking score to 10 or below.	**Section 3.3** **Section 3.4**
Step 4: Record LUCRA results	Key issues, risk level and recommended management measures are recorded and summarised. This record provides a valuable planning document for managers and planners and should be included in any relevant management plan.	**Section 3.3** **Section 3.4**

1.4 Study areas

The study areas for this LUCRA includes the site and the locality. These terms are defined in **Table 3**.

The study areas were determined by considering surrounding land uses and the likely spatial extent of potential impacts of the BESS that may cause land use conflict.

Table 3 – Study areas terminology

Term	Meaning
Site	The area occupied by the development and associated infrastructure including: • The BESS which includes containerised lithium-ion type batteries that will be manufactured offsite and delivered for installation. • Power conversion systems. switchgear and a control building associated with the BESS. • An underground or overhead 132kV transmission line to connect the BESS to the adjacent Muswellbrook Ausgrid substation. • Cabling and collector units, site office, storage area, internal access tracks, on-site parking, security fencing, lighting and a temporary construction laydown area • The site access corridor connect to Sandy Creek Road Contained within Lot 15 DP1276946. The site is located within Parts of Lot 11 DP839233, Lot 12 DP839233 and Lot 15 DP1276946
Locality	Land within 1 km of the site boundary.

2. STEP 1 – GATHER INFORMATION

2.1 Nature of the land use change and development proposed

2.1.1 THE SITE

The site is located in the MSC LGA approximately 2.5 kilometres (km) north-east from the centre of Muswellbrook. The site (otherwise referred to as the 'development footprint') has an area of approximately 4.94 hectares and is located across three (3) lots, Lot 11 DP839233, Lot 12 DP839233 and Lot 15 DP905479. The proposed BESS has an estimated capacity of approximately 150 megawatt (MW)/300 megawatt hours (MWh).

Site access for the proposed BESS would use an existing sealed driveway located in Lot 15 DP905479, currently used to access the Muswellbrook Ausgrid Substation from Sandy Creek Road. Sandy Creek Road crosses the Main Northern Railway Line, connecting to the New England highway, approximately 250 m south-west of the site.

The site has a general northern aspect and the locality features undulating topography and watercourses.

The site is currently used for the Muswellbrook Ausgrid Substation and agricultural land use, including grazing. Other land uses in the locality include a waste management facility, place of worship, mine, residential land, as well as future residential and infrastructure development. Land uses in the locality are detailed in **Section 2.2**.

The BESS is located west of the Muswellbrook Ausgrid Substation which is contained within Lot 11 DP839233. Several overhead transmission lines associated with the substation are present within the site and locality.

The site was selected after the proponent's extensive review of information relating to land availability and access, land ownership, land use, topography, geological formation, transmission grid access and capacity and environmental constraints.

The site is depicted in **Figure 2**.

2.1.2 DEVELOPMENT PROPOSED

The Muswellbrook BESS includes the following key infrastructure:

- Enclosed lithium-ion batteries;
- Power conversion systems including associated switchgear, protection and control equipment, transformers and enclosures for housing equipment;
- Underground power and fibre optic cabling interconnecting the equipment;
- Grid connection equipment including main power transformer, switchgear, protection and control equipment, metering, reactive power equipment, filtering equipment, auxiliary/earthing transformers and enclosures/buildings for housing equipment;
- Underground or overhead 132kV sub-transmission lines to connect the BESS to the Muswellbrook substation;
- Earthing and lightning protection systems;
- Site office, storage area/enclosure, internal access tracks, on-site parking, security fencing, CCTV, lighting and temporary construction laydown area; and
- Utilisation of existing site access arrangements.

The site for the proposed development is depicted in **Figure 2**. The final layout is subject to detailed design.

Construction of the BESS is estimated to take up to 12 months and will include site clearing and earthworks. The proposed development is expected to have a life span of approximately 20 years.

2.1.3 NATURE OF LAND USE CHANGE

The construction and operation of the BESS would change the existing land use of the site (mapped via the NSW Landuse 2017 v1.2 dataset) from agriculture (grazing native vegetation) to electricity generating works. Areas outside the site within the locality are expected to continue to support their existing land use where practicable. It is noted that Ausgrid have confirmed, despite the land use mapping dataset, that the site is not currently actively used for agricultural purposes.

The existing land use is likely to return following decommissioning of the BESS.

2.2 Nature of the locality

2.2.1 LAND USE ZONES

Land use zones within the locality are detailed in **Table 4** and depicted in **Figure 3**.

The site is zoned part SP2 - Infrastructure and part C3 – Environmental Management under the *Muswellbrook Local Environmental Plan 2009* (MLEP). The permissibility of the development is addressed within the EIS.

The following is noted with respect to land use zoning in the locality:

- The majority of the site is zoned SP2 - Infrastructure
- The remainder of the site is zoned C3 – Environmental Management. including the area for the existing Muswellbrook Ausgrid Substation and a corridor transecting the site in a general north-west to south-east alignment.
- Land zoned C3 – Environmental Management extends to the south and east of the site.
- Land zoned SP2 -Infrastructure:
  - Associated with the corridor transecting the site, extends to the south-east and north-west of the site.
  - Is located to the south and east of the site and associated with a Waste Management Facility.
  - Is located to the west of the site and associated with rail infrastructure.
- Land zoned RU1 – Primary Production:
  - Borders the northern boundary of the site.
  - Is located in a parcel to the east and associated with a heritage item (refer to **Section 2.2.6.10**).
  - Is scattered throughout the locality with smaller areas to the south and larger areas concentrated to the north and west.
- Land zoned R1 – General Residential:
  - Borders the south-western boundary of the site.
  - Is located to the west and south-west of the site.
- Land zoned R5 – Large Lot Residential:
  - Borders the north-western boundary of the site.
  - Is located to the west of the site.
- Land zoned RE1 – Public Recreation is located to the south and south-west of the site in several patches.

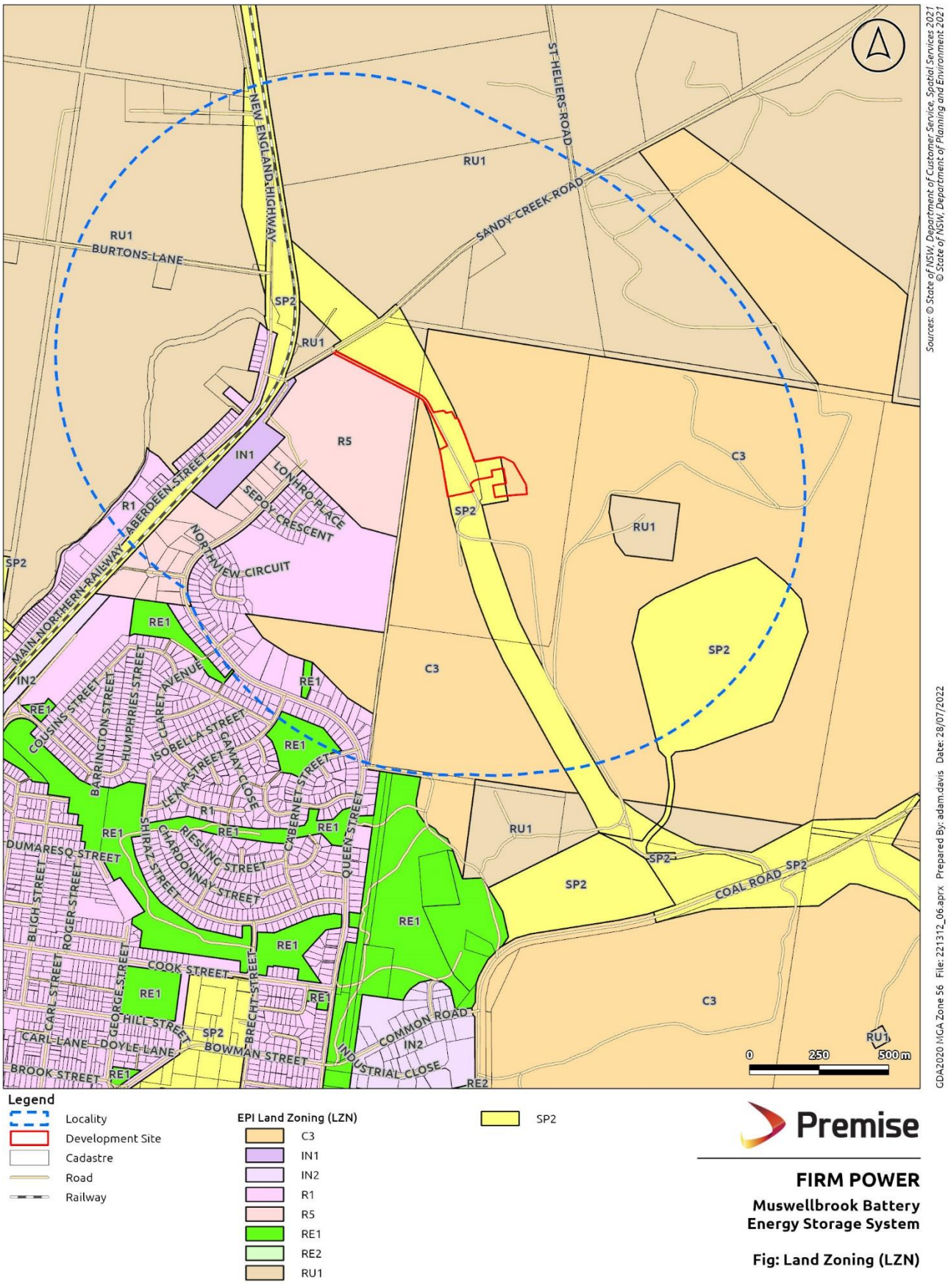
Table 4 – MLEP land use zones and objectives

Zone	Objectives
C3 – Environmental Management	• *To protect, manage and restore areas with special ecological, scientific, cultural or aesthetic values.* • *To provide for a limited range of development that does not have an adverse effect on those values.* • *To maintain, or improve in the long term, the ecological values of existing remnant vegetation of significance including wooded hilltops, river valley systems, major scenic corridors and other local features of scenic attraction.* • *To limit development that is visually intrusive and ensure compatibility with the existing landscape character.*

Zone	Objectives
	• *To allow agricultural activities that will not have an adverse impact on the environmental and scenic quality of the existing landscape.* • *To promote ecologically sustainable development.* • *To ensure that development in this zone on land that adjoins land in the land zoned E1 National Parks and Nature Reserves is compatible with the objectives for that zone.*
SP2 – Infrastructure	• *To provide for infrastructure and related uses.* • *To prevent development that is not compatible with or that may detract from the provision of infrastructure.* • *To recognise existing railway land and to enable future development for railway and associated purposes.* • *To prohibit advertising hoardings on railway land.* • *To recognise major roads and to enable future development and expansion of major road networks and associated purposes.* • *To recognise existing land and to enable future development for utility undertakings and associated purposes.*
RU1 – Primary Production	• *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 protect the agricultural potential of rural land not identified for alternative land use, and to minimise the cost to the community of providing, extending and maintaining public amenities and services.* • *To maintain the rural landscape character of the land in the long term.* • *To ensure that development for the purpose of extractive industries, underground mines (other than surface works associated with underground mines) or open cut mines (other than open cut mines from the surface of the flood plain), will not—* *(a). destroy or impair the agricultural production potential of the land or, in the case of underground mining, unreasonably restrict or otherwise affect any other development on the surface, or* *(b). detrimentally affect in any way the quantity, flow and quality of water in either subterranean or surface water systems, or* *(c). visually intrude into its surroundings, except by way of suitable screening.* • *To protect or conserve (or both)—* *(a). soil stability by controlling development in accordance with land capability, and* *(b). trees and other vegetation, and* *(c). water resources, water quality and wetland areas, and their catchments and buffer areas, and* *(d). (d) valuable deposits of minerals and extractive materials by restricting development that would compromise the efficient extraction of those deposits.*

Zone	Objectives
R1 – General Residential	• *To provide for the housing needs of the community.* • *To provide for a variety of housing types and densities.* • *To enable other land uses that provide facilities or services to meet the day to day needs of residents.* • *To enable sensitive infill development of other housing types.* • *To allow people to carry out a reasonable range of activities from their homes, where such activities do not adversely affect the living environment of neighbours.* • *To promote the principles of ecological sustainable development including energy and water efficient subdivision and housing design.* • *To minimise the impact of non-residential uses and ensure these are in character and compatible with surrounding development.* • *To ensure that development is carried out in a way that is compatible with the flood risk of the area.*
R5 – Large Lot Residential	• *To provide residential housing in a rural setting while preserving, and minimising impacts on, environmentally sensitive locations and scenic quality.* • *To ensure that large residential lots do not hinder the proper and orderly development of urban areas in the future.* • *To ensure that development in the area does not unreasonably increase the demand for public services or public facilities.* • *To minimise conflict between land uses within this zone and land uses within adjoining zones.*
RE1 – Public Recreation	• *To enable land to be used for public open space or recreational purposes.* • *To provide a range of recreational settings and activities and compatible land uses.* • *To protect and enhance the natural environment for recreational purposes.* • *To encourage the development of public open spaces in a way that addresses the community's diverse recreation needs.* • *To identify land that is suitable for future public recreation use and that can be brought into public ownership as a consequence of development contributions.* • *To provide linked open space for ecosystem continuity, local community recreation, off-road transport and waterway protection.* • *To provide space for integrated stormwater treatment devices for flow and water quality management, whilst enhancing urban and rural amenity.*

Figure 3 – Land use zoning in the locality



2.2.2 LAND OWNERSHIP

Land holdings within the locality (within 1 km of the site) are depicted in **Figure 4** overleaf. In summary:

- Land within the site is under the ownership of Ausgrid and associated with the Muswellbrook Substation.
- Land ownership to the north, south and west includes several smaller residential and agricultural holdings.
- Land to the east and south is owned by Muswellbrook Coal Company (MCC). The adjacent lot to the south of the subject site is owned by MCC but remains in use for agricultural purposes, grazing native vegetation.
- The NSW Government own several land parcels throughout the locality, including a travelling stock reserve which adjoins the western boundary of the site.
- Muswellbrook Shire Council own land associated with the Muswellbrook Waste and Recycling Facility to the south of the site.

Future land uses identified in **Section 2.2.4** may alter existing ownership in the locality, particularly the proposed Muswellbrook New England Highway bypass.

2.2.3 EXISTING LAND USES

A review of the NSW Landuse 2017 v1.2 mapping from the DPIE SEED Portal identified a range of land uses in the locality. Land uses within the site and locality (1 km radius of the site) are outlined in **Table 5** and **Figure 5**.

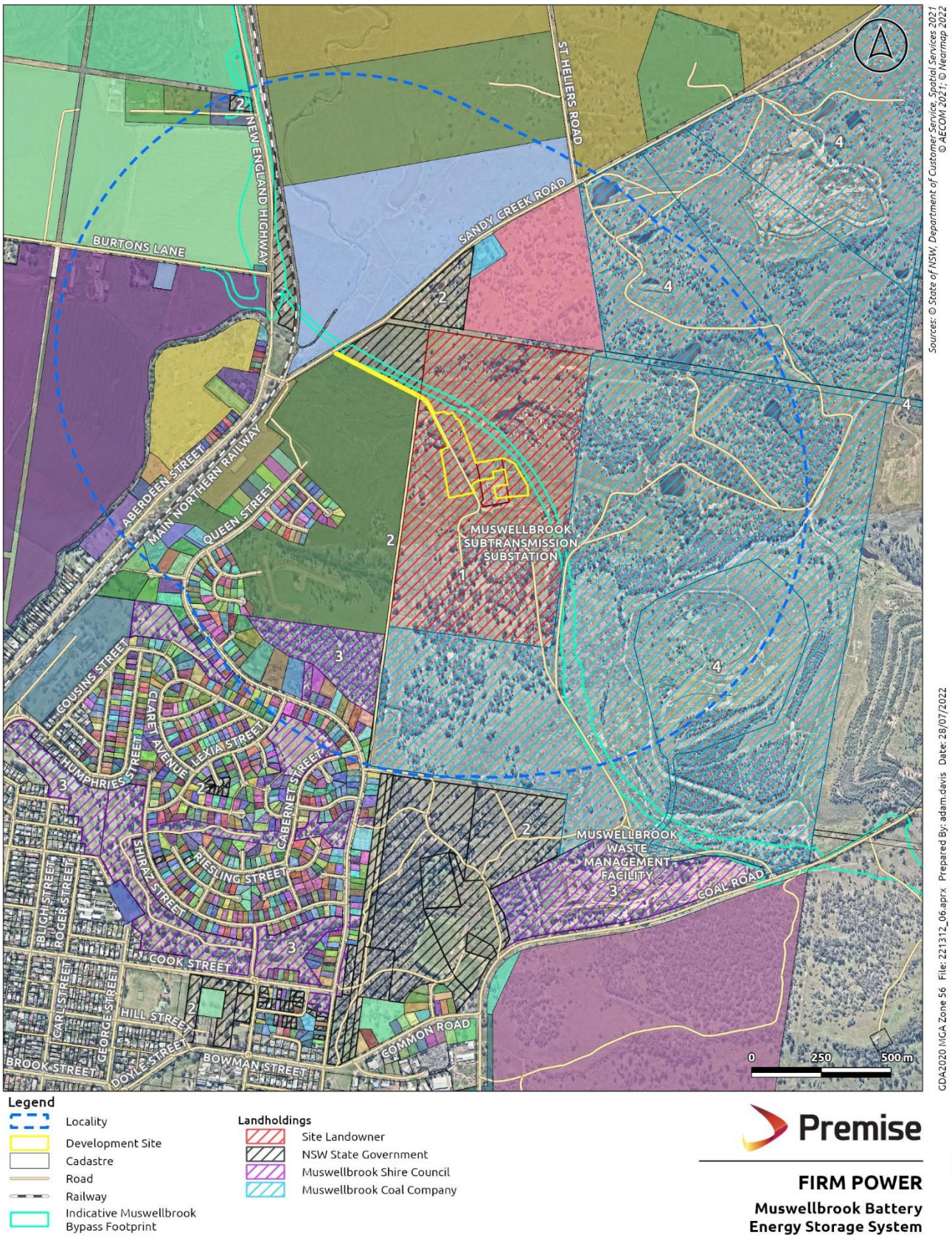
The site predominantly consists of grazing native vegetation land use, with the existing Ausgrid substation identified as utilities and the access arrangement under other minimal use.

Review of land uses within the locality indicate land use is predominantly grazing native vegetation.

Table 5 – Land Uses within the Locality

Land use	Area (ha)	%
Electricity substations and transmission	0.73	0.1%
Irrigated seasonal vegetables and herbs	0.93	0.2%
Reservoir/dam	3.33	0.7%
Dairy sheds and yards	3.80	0.8%
Irrigated vine fruits	4.84	1.0%
Stock route	8.93	1.8%
River	14.02	2.8%
Commercial services	15.57	3.1%
Roads	27.61	5.5%
Urban residential	41.03	8.2%
Grazing modified pastures	80.76	16.1%
Grazing irrigated modified pastures	100.19	20.0%
Grazing native vegetation	162.57	32.4%
TOTAL	**501.86 ha**	100%

Figure 4 – Land ownership in the locality



2.2.3.1 Residential and farm infrastructure

There are no residential dwellings or farm infrastructure located within the site.

There are several groundwater bores within the locality (refer to **Section 2.2.6.5**).

As shown in **Figure 5,** there are approximately 26 non-associated residential receivers located, predominantly on low density allotments (R2 zoned land), within the locality.

The Northview Estate is a residential subdivision with 6 Stages. Stages 1, 2 and 3 have been constructed while Stages 4, 5, 6 and 7 remain unbuilt. Stage 5, 6 and 7 adjoin the western boundary of the site. Areas of the Northview estate are identified in **Figure 7**.

2.2.3.2 Agriculture

The NSW Landuse 2017 v1.2 mapping dataset identifies land within the site for grazing of native vegetation and utilities (refer to **Figure 5**).

Agricultural land use for grazing of native vegetation is mapped as the dominant land use in the locality and surrounds the site.

It is noted that some portions of agricultural land use in the site and locality, mapped via the NSW Landuse 2017 v1.2 dataset, are now zoned and in use for other purposes including residential land to the west, mining land use to the east, and waste management and recreational land to the south.

Other agricultural land use within the locality includes:

- Grazing of irrigated modified pastures, located approximately 450 m northwest of the access arrangement and on the opposite side of Sandy Creek, 990 m west of the site boundary.
- Irrigated perennial horticulture and irrigated vine fruits, approximately 360 m west of the site access arrangement and to the west.
- Irrigated seasonal horticulture, irrigated seasonal vegetables and herbs, approximately 920 m west of the site boundary.

The project is situated within the Hunter Region of NSW. The Department of Primary Industries' (DPI) *Agricultural Industry Snapshot for Landuse Planning* identifies the gross value of agricultural production of the Hunter region at over $573 million for the year between 2015 and 2016 (DPI, 2020). The gross value of production (GVP) in the Hunter region represents 4.4% of the state's total agricultural GVP. The top three commodities of beef, poultry meat and milk contribute $219.4 million, $132.3 million and $92.8 million to the GVP of the Hunter region, respectively (DPI, 2020). A Social and Economic Impact Assessment (SEIA) has been prepared by bd consulting Pty Ltd to accompany the EIS and provides a detailed overview of the economic profile of the locality and region. As shown in **Figure 7**:

- The nearest Strategic Agricultural Land (SAL)- Biophysical (otherwise referred to as 'BSAL') is located in north-western corner of the Lot 12 DP839233, and has an area of approximately 930 m^2. The project infrastructure and site does not encroach into this area. The northern boundary of proposed access arrangement via Lot 15 DP905479 adjoins BSAL to the north of the site within Lot 1391 DP590130. The potential of the development to impact BSAL is addressed within the EIS and in **Section 2.2.6.8.**
- The site and northern portion of the locality contain Strategic Agricultural Land (SAL) – Equine. The site is currently owned and operated by Ausgrid for the Muswellbrook Ausgrid Substation. No horse breeding (or supporting equine developments or support services) are known to occur on site. The development does not represent a state significant mining and/or coal seam gas activity and is not anticipated to significant impact land classified as SAL-Equine.

Figure 5 – Land use and receptors within the locality

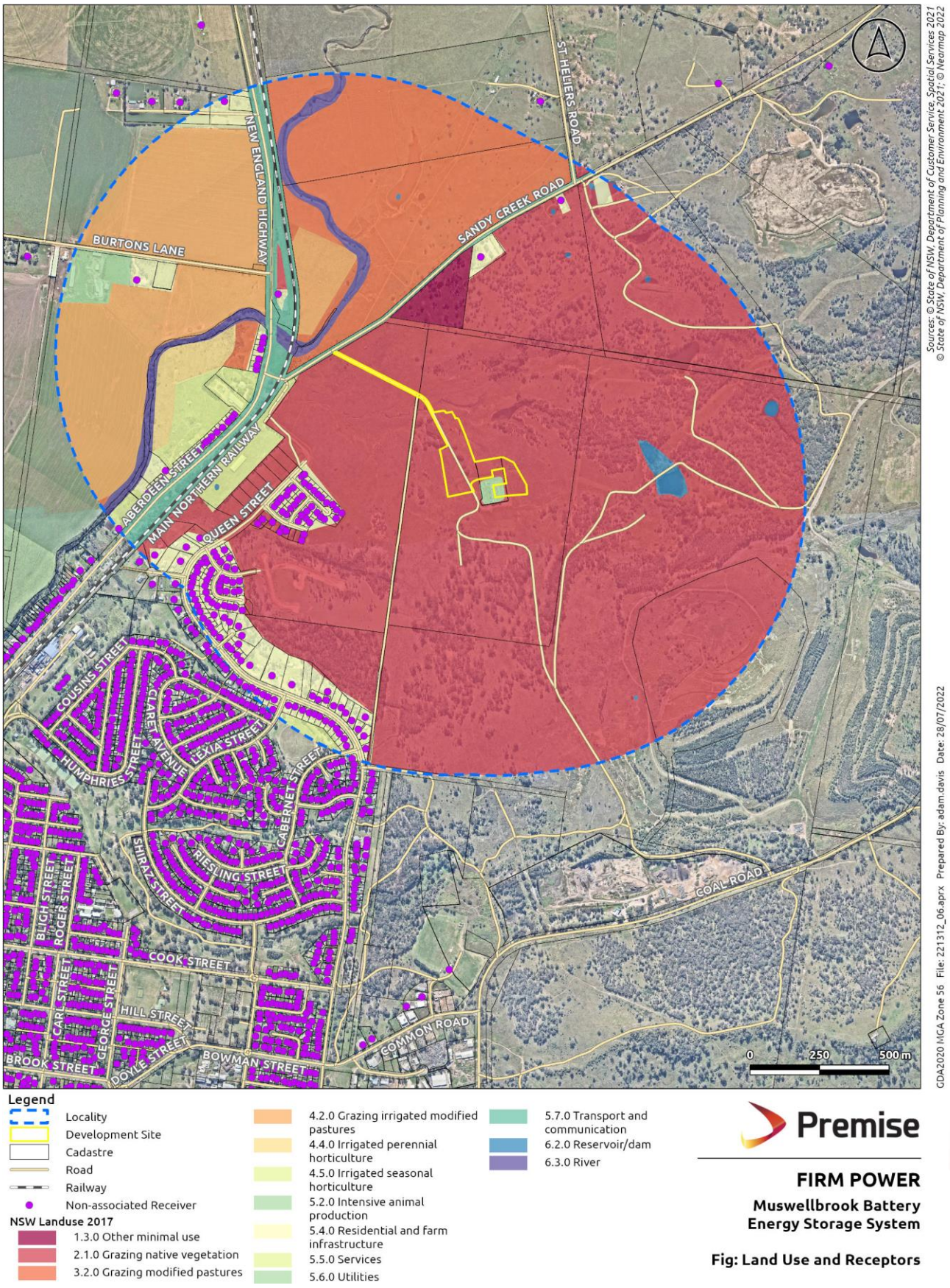


Figure 6 – Muswellbrook Coal Mine Mining activities and Site Layout.

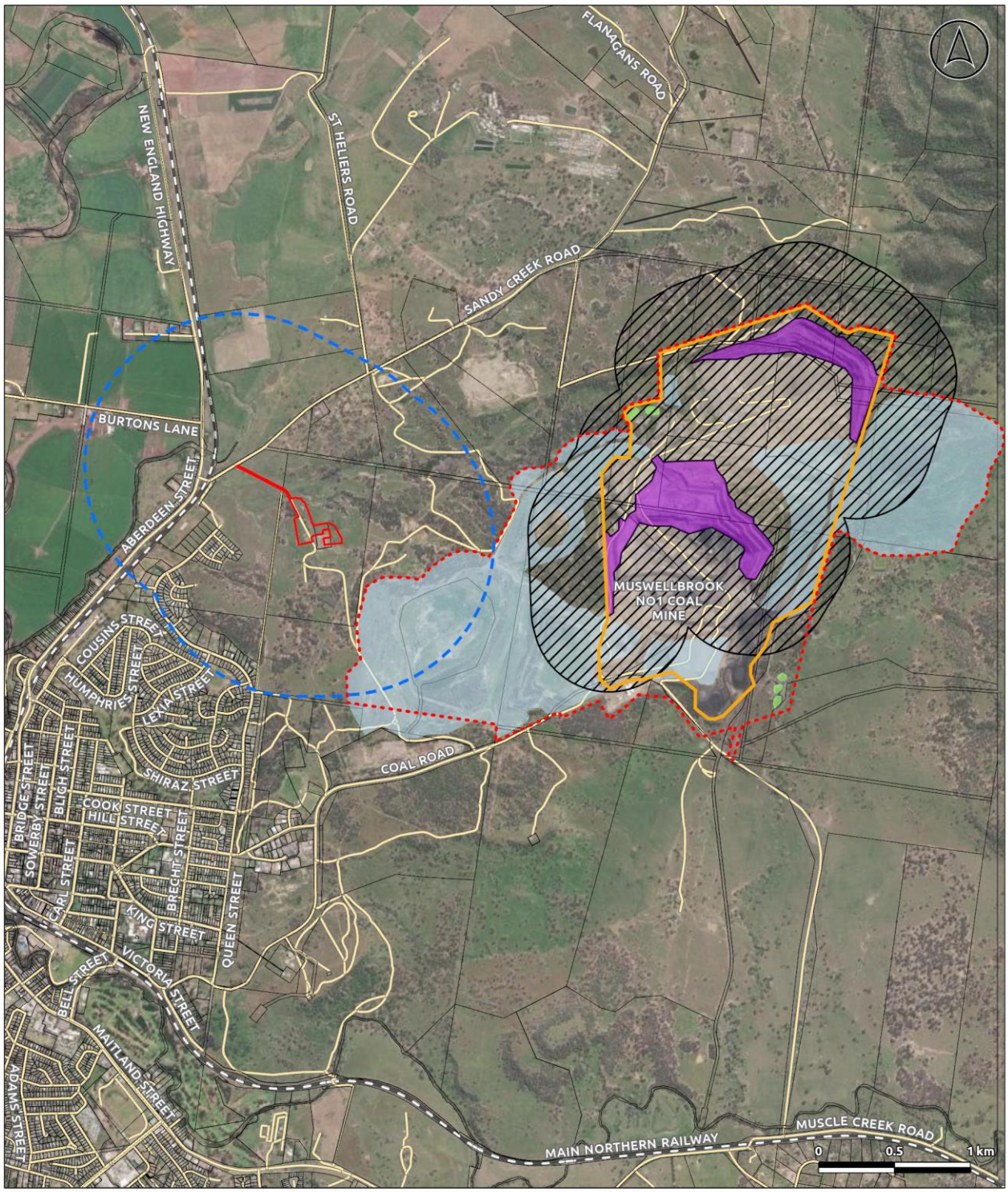
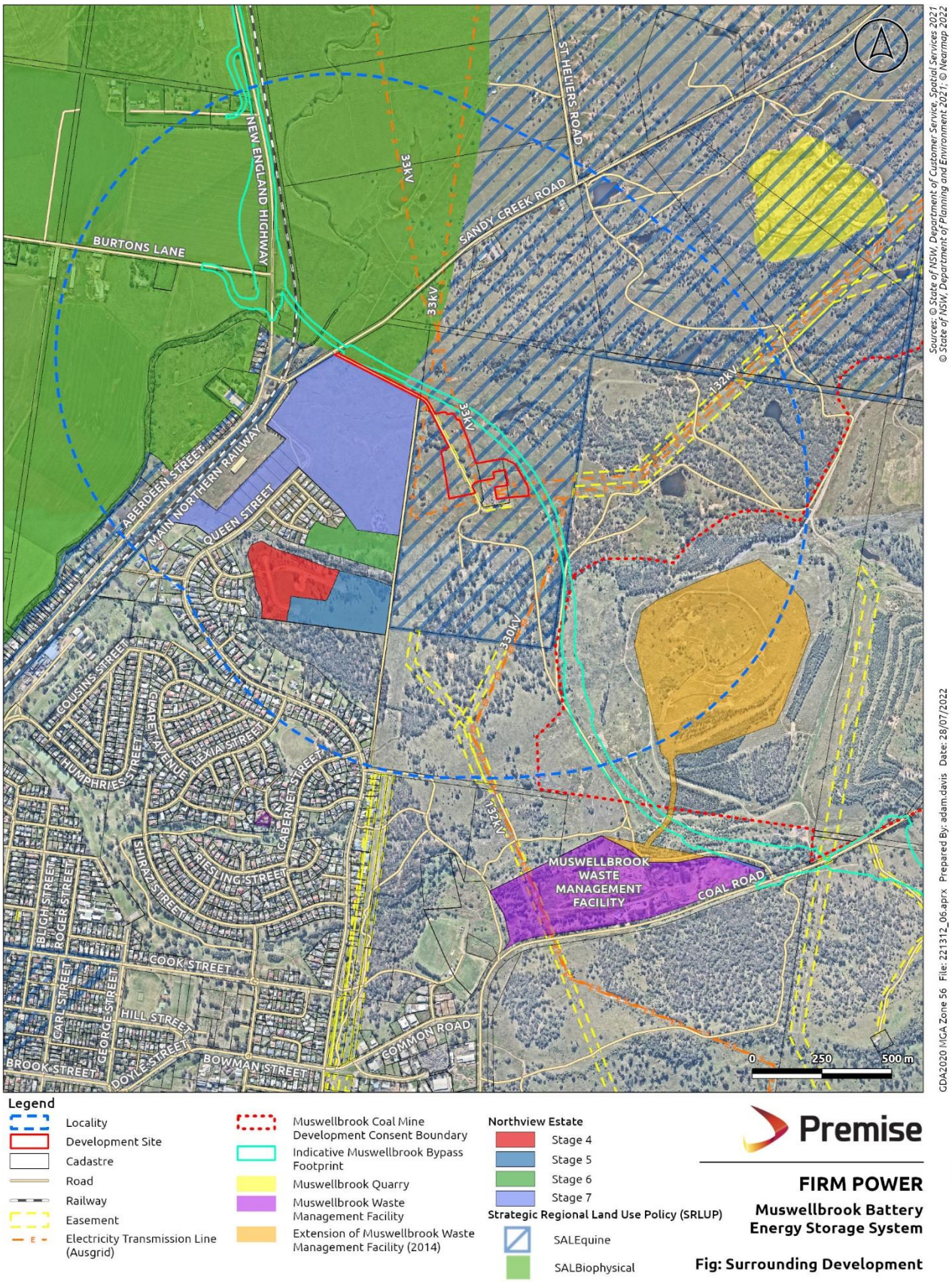


Fig: Muswellbrook Coal Mine Mining Activities

Figure 7 – Surrounding development



2.2.3.3 Extractive industry

2.2.3.3.1 Mining

The Muswellbrook Coal Mine is an open-cut coal mine operated by Muswellbrook Coal Company (MCC) and located approximately 3 km north-east of the centre of Muswellbrook. MCC is wholly owned by Idemitsu Australia Resources Pty Limited (IAR) which is an Australian subsidiary of the Japanese company Idemitsu Kosan Company Ltd (MCC, 2019).

MCC commenced underground coal mining operations in Muswellbrook in 1907 and open cut operations in 1944 (MCC, 2019). While underground mining operations ceased in the late 1990s, open cut operations continue to remain active (Umwelt, 2021).

Approval was granted to extend the former No. 1 Open Cut area of the mine in 2003 via Development Consent DA 205/2002 (MSC, 2016). The extension commenced operations in March 2005 (Umwelt, 2021). Along with strategies, plans and programs developed for the mine, several other approvals for the mine site apply including an EPL 656, mining authorities (Coal Lease 713, Mining lease 1562 and 1304) and water licences (WAL39806, WAL41503 and WAL41521) (Umwelt, 2021).

Since approval (DA 205/2002), Muswellbrook Coal Mine has been subject to several modifications. **Table 6** below was sourced from the most recent environmental audit of the mine and outlines the consent history of DA 205/2002 (Umwelt, 2021). The most recent modification known as the 'Muswellbrook Coal Continuation Project' included an extension of the mine's extractive area and operational timeframe (EMM, 2016a). The approved extension increased the mining operations of Open Cut 1 in a north-easterly direction.

Table 6 – Muswellbrook Coal Mine Consent History

Approval	Description	Consent Authority	Date Granted	Expiry/Renewal Date
DA 205/2002	Approval for Extension of MCC Open Cut 1	Muswellbrook Shire Council	1 Sep 2003	31 Dec 2015
DA205/2002-Amendment to Condition 1.1	Power line relocation and additions to Workshop	Muswellbrook Shire Council	19 Dec 2005	31 Dec 2015
DA205/2002-Amendment to 1.1 and 11.3	Relocate office buildings, workshop and bathhouse	Muswellbrook Shire Council	13 July 2009	31 Dec 2015
DA205/2002-Amendment to 11.1	Extension of mining into Area C	Muswellbrook Shire Council	23 Dec 2010	31 Dec 2015
DA205/2002-Amendment to 1.1(a),31,33,39,45 and 58.	Revision to Mining Infrastructure Building Requirements and Rehabilitation Plan Revision to permit the continuation of mining operations for an additional 5 years.	Muswellbrook Shire Council	29 Oct 2013	31 Dec 2020
DA 205/2002 General revision of consent conditions	Modification to allow mining operations to mine additional areas and to extend the mine life to 2022.	Muswellbrook Shire Council	27 Oct 2016	31 Dec 2022 end of mining operations. No end date of approval.

The mine currently has an approved production capacity of up to 2 million tonnes of coal per annum (Mtpa). Product coal from the site is trucked offsite via Muscle Creek Road and the New England Highway to the Ravensworth Coal Terminal for train loading before being transported to the Port of Newcastle (MCC, 2020).

MCC own several lots that border the southern and eastern boundary of Lot 12 DP839233, and the mine's development consent boundary borders the eastern boundary of Lot 12 DP839233. Review of the latest Annual Environmental Managing Report identifies that the active mining area is located approximately 1.8 km east of the site boundary at its closest point (MCC, 2020a).

An area to the west of the active mine site has been used for sequential overburden emplacement as the mining operations have extended in a north easterly direction (EMM 2016a) and has been progressively rehabilitated (MCC, 2020a). **Figure 6** displays the current layout of the coal mine.

A Noise and Vibration Impact Assessment (NVIA) was prepared by EMM to accompany the SEE for the modification of the mine in 2016 (EMM, 2016b). The assessment addressed noise and vibration impacts including receptors located at a distance further west than the BESS is from the Mine site. For the nearest resident the NVIA concluded the following in regard to ground vibration and airblast results:

> *The allowable MIC calculations indicate that there are no significant restrictions to the MIC of blasts at MCM.*
>
> *Assuming the existing average MIC of 500 kg, the ground vibration and airblast levels predicted at the nearest residence are 0.7 mm/s and 111 dB, respectively.*
>
> *By maintaining the current approach to blast design and blast emission management, it is anticipated that the blast emissions criteria will continue to be met throughout the life of the modification.*

While the boundary of Lot 12 DP839233 borders land owned by MCC, the site is located approximately 1.8 km east of the current active mining area. Given the conclusions of the NVIA assessment for the nearest resident at 1km, adverse noise and vibration impacts to the BESS site are not anticipated.

A Blast Management Plan (BMP) approved by MSC is in place to minimise blast impacts (MCC, 2020b). The BMP details measures to protect infrastructure, best practice for drilling and blasting operations and the safety zone of exclusion. In relation to the risk to surrounding infrastructure the BMP states

> *To protect public surface infrastructure and underground facilities, the Mine Engineer responsible for blast design will:*
>
> - *Identify all public surface infrastructure and underground facilities within 500 metres of potential blast zones;*
> - *Contain the Maximum Instantaneous Charge (MIC) to a level so that damage will not occur to the public surface infrastructure and underground facilities; and*
> - *Periodically monitor public infrastructure to verify that no damage is occurring.*
>
> *…As there is no non-mine owned land within 500m of the potential blast zones at MCC, mitigation measures to protect livestock on non-mine owned land are not required.*
>
> *…Prior to the initiation of a blast, the Blast Controller shall:*

- *Confirm that sentries are safely positioned at all points of access to the blast;*
- *Confirm that the public are excluded from an area within the blast exclusion zone of the planned blast.*

The proposed BESS is located approximately 1.8 km east of the current active mining area and therefore is unlikely to result in adverse impacts to workers and infrastructure associated with BESS.

Areas marked for rehabilitation associated with Muswellbrook Coal Mine are located in the southern extent of Lot 4 DP1220491, an adjacent lot that borders the eastern boundary of Lot 12 DP839233. The site is located approximately 530 m north-west of the mine's 'ecosystem development' area and approximately 2.5 km west from the mine's 'ecosystem establishment' area (MCC 2020a). The BESS is therefore not expected to affect use of that surrounding land for ecosystem development and establishment associated with Muswellbrook Coal Mine.

2.2.3.3.2 Quarries

Muswellbrook Quarry is mapped as 'mining' via the NSW Landuse 2017 v1.2 mapping dataset (refer to **Figure 5**). Muswellbrook Quarry, however. is not considered to be a mine under the definition of the *Mining Act 1992.*

Muswellbrook Quarry is located approximately 1.2 km north-east of the site, along Sandy Creek Road Muswellbrook. The quarry is owned by MCC and was leased to Daracon for quarrying operations (EMM, 2016a).

A review of meeting minutes held by the MCC Community Consultative Committee between 2016 and 2021 further identifies the following:

- An agreed closure plan for the quarry was in place in 2016. Remediation earthworks and plantings of the quarry were being undertaken by Daracon through 2016. (MCC, 2016)
- Management of the quarry was transferred from Daracon to Wild Group in 2018 (MCC, 2018).
- Remediation of asbestos contamination of soil at Muswellbrook Quarry was being undertaken in 2021 (MCC, 2021)

It is not currently known whether the quarry is still undergoing remediation. Given the status (the quarry site is non-operational) and separation distance of the quarry site to the BESS development there is unlikely to be any potential land use conflict.

2.2.3.4 Infrastructure

An overview of infrastructure impacting the site and locality is provided below. These features are depicted in **Figure 7**.

2.2.3.4.1 Roadways

Key roads that would be utilised during the construction and operation of the BESS include:

- Internal access roads, including an existing partially sealed road within Lot 15 DP905479, associated with Crown reserve TSR 70196, that connects to the Muswellbrook Substation and provides access to the site via Sandy Creek Road.
- Sandy Creek Road, which crosses the Main Northern Railway before connecting to the New England Highway via Aberdeen Street, approximately 250 m south-west of the site access arrangement.
- Aberdeen Street which connects to the New England Highway and runs south-west towards the centre of Muswellbrook

- The New England Highway which runs north towards Aberdeen, approximately 250 m south-west of the site at its closest point.

The expected transportation route for construction materials is via the New England Highway and Sandy Creek Road.

A review of NSW Road Network Classification map provided by Transport for NSW (TfNSW, 2022a) and Schedule of classified roads and State and Regional roads (TfNSW 2022b) identifies the New England Highway as a State Classified Road (HW9). Aberdeen Street and Sandy Creek Road are local roads not classified under the *Roads Act 1993*.

The proposed Muswellbrook New England Highway Bypass transects the locality and overlaps the site. There are five (5) proposed routes for the bypass which transect the site.

- Ongoing consultation with TfNSW regarding the development of the Muswellbrook New England Highway Bypass is likely to identify and minimise any land use conflicts associated with the BESS development.

2.2.3.4.2 Rail corridors

The Main Northern Railway Line, which connects Armidale to Sydney, runs in a north to south-west alignment, approximately 150 m west of the site's access arrangement at its closest point. The rail corridor forms part of the Hunter Valley Corridor Network is managed by the Australian Rail Track Corporation (ARTC) (ARTC, 2021).

A railway crossing along Sandy Creek Road is located approximately 210 m south-west of the site access arrangement. No alteration to the existing railway crossing or the railway corridor for the Main Northern Railway is proposed. As requested by ARTC, additional consultation will be undertaken closer to construction in relation to use of the railway level crossing, as stated in the Amber (2022) Traffic Impact Assessment prepared to support the EIS.

2.2.3.4.3 Substation

The Muswellbrook Ausgrid Substation occupies an area of approximately 7,200 m^2 and is located adjacent to the development site. The proposed BESS includes a transmission line connecting to this substation.

2.2.3.4.4 Electrical infrastructure

There are several transmission lines that transect the site, owned by Ausgrid including:

- One overhead 330 kV transmission line which transects the locality and extends to the south.
- Two overhead 132 kV transmission lines which transect the locality and extend to the north.
- Two overhead 33 kV transmission lines which transect the locality and extend to the east.
- Underground and/or overhead cabling within the locality including assets owned by Ausgrid NBN Co and Telstra.

2.2.3.4.5 Telecommunications infrastructure

A Dial Before You Dig search has identified several telecommunication assets owned by NBN Co within the locality including:

- Two pits with size '4' in the north-western portion of Lot 12 DP839233.
- One pit with size '2' in the central portion of Lot 12 DP839233, west of the substation.
- One power pit with size 'B' in the central portion of Lot 12 DP839233, south-west of the substation.

- Two pits with size '2', Two pits with size '1', One pit with size '4' and One pit with size 'Std' in the southern portion of Lot 12 DP839233, south of the substation.

2.2.3.4.6 Drainage infrastructure

The locality contains drainage infrastructure owned by MSC including:

- A water pipe extending south-west from Sandy Creek Road along the access arrangement towards the western boundary of Lot 12 DP839233.
- A sewer pipe contained within the southern portion of Lot 15 DP905479.
- A drainage line along the western boundary of the southern portion of Lot 15 DP905479.

2.2.3.5 National parks and nature reserves

There are no parks or reserves are located within the locality. The closest parks and reserves include:

- Mount Royal National Park located approximately 31 km north-east of the site.
- Monobalai Nature Reserve located approximately 27 km west of the site.

2.2.3.6 Reservoirs and dams

NSW Land Use 2017 mapping identifies three areas with a primary land use as reservoirs/dams in the locality including:

- One reservoir/dam occupying an area of 2.67 ha, located approximately 450 m east of the site.
- One reservoir/dam occupying an area of 0.08 ha, located approximately 460 m east of the site and adjoining the 2.67 ha reservoir dam.
- One reservoir/dam occupying an area of 3.07 ha, located approximately 990 m northeast of the site.

The NSW Land Use 2017 mapping identifies the tertiary land use for all three of these reservoirs/dams as 'Reservoir/dam'. The dams are located in an area surrounded by agricultural land use and to the north of an area previously used for Muswellbrook Brickworks.

2.2.3.7 Rivers

A review of the NSW Landuse 2017 dataset identifies the following areas within the locality as rivers:

- A portion of Sandy Creek east of the New England Highway which extends north and is located approximately 70 m north-west of the site access arrangement.
- A portion of Sandy creek west of the New England Highway which extends south-west and is located approximately 271 m north-west of the site access arrangement.

The Hunter River is located outside of the locality, approximately 1.4 km west of the site access arrangement, at its closest point.

The waterway within the site is not mapped as a river, likely due to its ephemeral nature.

2.2.3.8 Services and recreation

Several areas south-west of the site are mapped via the NSW Landuse 2017 dataset as services including:

- Several scattered recreational areas and local parks, the closest of which is Volunteer Park located approximately 1 km south-west of the site.
- The Muswellbrook General Cemetery is located outside of the locality, approximately 1.8 km south-west of the site.

- Muswellbrook Hospital is located outside of the locality, approximately 2.1 km south-west of the site.

2.2.3.9 Waste management

The Muswellbrook Waste and Recycling Facility (MWRF) is owned and managed by MSC and operates under Environmental Protection Licence (EPL) 5980. The facility is located approximately 1.3 km south of the site, outside of the locality, in Lot 1 DP819014.

The MWRF is mapped as 'mining' via the NSW Landuse 2017 v1.2 mapping dataset (refer to **Figure 5**). The MWRF however, is not considered to be a mine under the definition of the *Mining Act 1992.*

A review of a report prepared by MSC titled 'Muswellbrook Waste Management Facility Development' identifies that the existing landfill at the MWRF is projected to expire around 2025 (MSC, n.d). MSC have proposed a new landfill development associated with the MWRF that will use a void no longer used as a coal extraction pit by Muswellbrook Coal Company. The report identifies that the landfill would provide an additional 2.8 million m^3 of landfill disposal space.

It is understood that the new landfill development would be located on land currently identified as Lot 3 DP1220491 and includes an upgraded connection to the existing MWRF (refer to **Figure 7**).

The BESS site is located approximately 600 m northwest of the additional landfill site and 1.3 km north from the existing MWRF. The BESS is therefore not expected to affect the use of surrounding land for waste management purposes, nor are the land uses considered likely to conflict with each other.

Ongoing consultation with MSC regarding the MWRF is likely to identify and minimise the potential for any land use conflicts with the BESS development.

2.2.4 FUTURE LAND USES

Review of approval documents and consultation with surrounding stakeholders has identified the following future developments in the locality:

- Northview Estate Residential Subdivision, adjacent to the western boundary of Lot 12 DP839233. Stages 4 – 6 are in development and the extent of these is understood. Discussions between Firm Power and the developer of Northview have identified that an additional stage, Stage 7 (being the R5 zoned land) is also under design at present, although no development applications have been submitted or approved. The likely impacts from this from a land use perspective are associated with the potential for noise, visual and social impacts. These have been considered in the various specialist reports.
- North-eastern expansion of the Muswellbrook Waste and Recycling Facility into land approximately 600 m southwest of the site.
- An approved, modification of the Muswellbrook Coal Mine extending existing extraction are in a north-easterly direction. The modification and active mining area is located approximately 1.8 km east of the site boundary.
- Proposed development of the Muswellbrook New England Highway that includes several route options. The proposed bypass transects the locality and overlaps the development site.

All other existing land uses surrounding the site are expected to continue into the future. The site would be able to support a variety of future land uses after decommissioning such as agriculture, or other developments subject to consent.

The majority of infrastructure associated with the BESS would be removed at the end of the project life. A determination during project decommissioning would be made in regard to the retention of any site infrastructure. The development is not expected to prevent the establishment of other future land uses.

The project design has been refined to limit impacts to surrounding land uses, including reduction of the project footprint to avoid the bypass, the installation of noise walls and the inclusion of visual screening. This is further discussed Section 3.2 of the EIS.

2.2.5 LAND TENURE

2.2.5.1 Crown land

The proposed access arrangement via Lot 15 DP905479 transects Crown land being a Travelling Stock Reserve (TSR:70196) which is managed by the Hunter Local Land Services (LLS).

No change to existing infrastructure within the TSR area is proposed and the development is not considered to adversely impact its use.

A Reserve Use Permit P22/005 from LLS has been secured, allowing the use of the TSR during the construction phase of the project. As such, no subdivision is required for the project. An approval to gain a more permanent legal right over the project access route (in its current form), is currently being investigated in consultation with Crown Lands. Ongoing consultation with Crown Lands and Hunter LLS is likely to identify and minimise the potential for any land use conflicts with the BESS Development.

Crown enclosure permits, licences, leases and reserves in the locality are summarised in **Table 7** and depicted in **Figure 10**. Crown Land mapped via the NSW ePlanning Portal without a dedicated enclosure permit, licence, lease or reserve is included as unidentified Crown land.

Table 7 – Crown Land in the locality

Type	Crown Land ID	Location description
Crown Enclosure Permit	N/A	No Crown Enclosure Permits were identified in the locality. The closest mapped Crown Enclosure Permit (15517 is approximately 1.8 km south-east of the site, along Coal Road.
Crown Licences	N/A	No Crown Licenses were identified in the locality. The closest mapped Crown Licence (614092) is located approximately 2.0 km south of the site, near Industrial Close.
Crown Lease	N/A	No Crown Leases were identified in the locality. The closest mapped Crown Lease (453771) is located approximately 3.1 km south-west of the site, along Bell Street.
Crown Reserves	R70196	Lot 15 DP905479. The proposed access arrangement transects the northern portion of this reserve. The southern portion of this reserve adjoins the western boundary of Lot 12 DP839233.
	R64311	Approximately 250 m north of the site
	R1002191	Approximately 970 m south of the site
	R752484	Approximately 970 m south of the site
	R170168	Approximately 970 m south of the site, at its closest point.

Type	Crown Land ID	Location description
		Note: Crown land under this ID is separated into several parcels to the south of the site.
	R752484	Approximately 970 m south of the site
Unidentified crown land	N/A	Adjoining the northern boundary of the Lot 12 DP839233 approximately 240 m north of the site.
	N/A	Transecting the New England Highway along an alignment with Sandy Creek, approximately 214 m north-west of the site access arrangement.
	N/A	Approximately 950 m south of the site, east of Queen Street connecting Crown Reserve 70196 to the eastern boundary of Crown Reserve 752484.

2.2.5.2 Mining and exploration titles

The entirety of the site and locality is located within the Muswellbrook mine subsidence district.

Underground Coal Mining (Non-EPI) is mapped via the ePlanning Portal approximately 700 m south of the site and 900 m east of the site.

There are two Mining licences located in the locality including:

- CCL713, held by MCC, which borders the southern, eastern and western boundary of the Lot 12 DP839233. CCL713 was last renewed on 4th December 2008 and expires on 24th November 2024. This license is for coal mining purposes.
- ML1562, held by MCC which is located approximately 240 m east of the Lot 12 DP839233. ML1562 was last renewed on 16th February 2005 and expires on 15th February 2026.

Underground Coal Mining (Non-EPI) and mining licences within the locality are depicted in **Figure 9**.

No exploration or mining title applications are located within the locality.

Consultation with Subsidence Advisory NSW has confirmed no objections to the project on the basis that the proposal is on land that is not undermined.

2.2.5.3 Native title

As the site contains a TSR (TSR:70196) a consideration of Aboriginal land rights legislation is required.

Division 2 of the NSW *Aboriginal Lands Act 1983* (AL Act) provides conditions under which the NSW Aboriginal Land Council and Local Aboriginal Land Councils may make a formal claim for land to the Native Title Registrar. Section 37, Division 2 of the AL Act provides provisions for claims of Aboriginal lands in travelling stock reserves.

A review of the National Native Title Tribunal's Native Title Register did not identify any Native Title claims or applications, or Indigenous Land Use Agreements at or near the site under the Commonwealth *Native Title Act 1993* (Native Title Act). The closest Native Title claim is located approximately 1.8 km west of the site (Tribunal File No. NC2011/006). A full review of historical and current Native Title applications applying to the Muswellbrook LGA is provided in **Table 8** below. The most recent application applying to the development site is for the 'Plains Clans of the Wonnarua People' and was filed on the 02/02/2022 (NC2022/001, NSD58/2022). This application, however, was not accepted and discontinued on the 11/04/2022.

Figure 8 – Crown Land

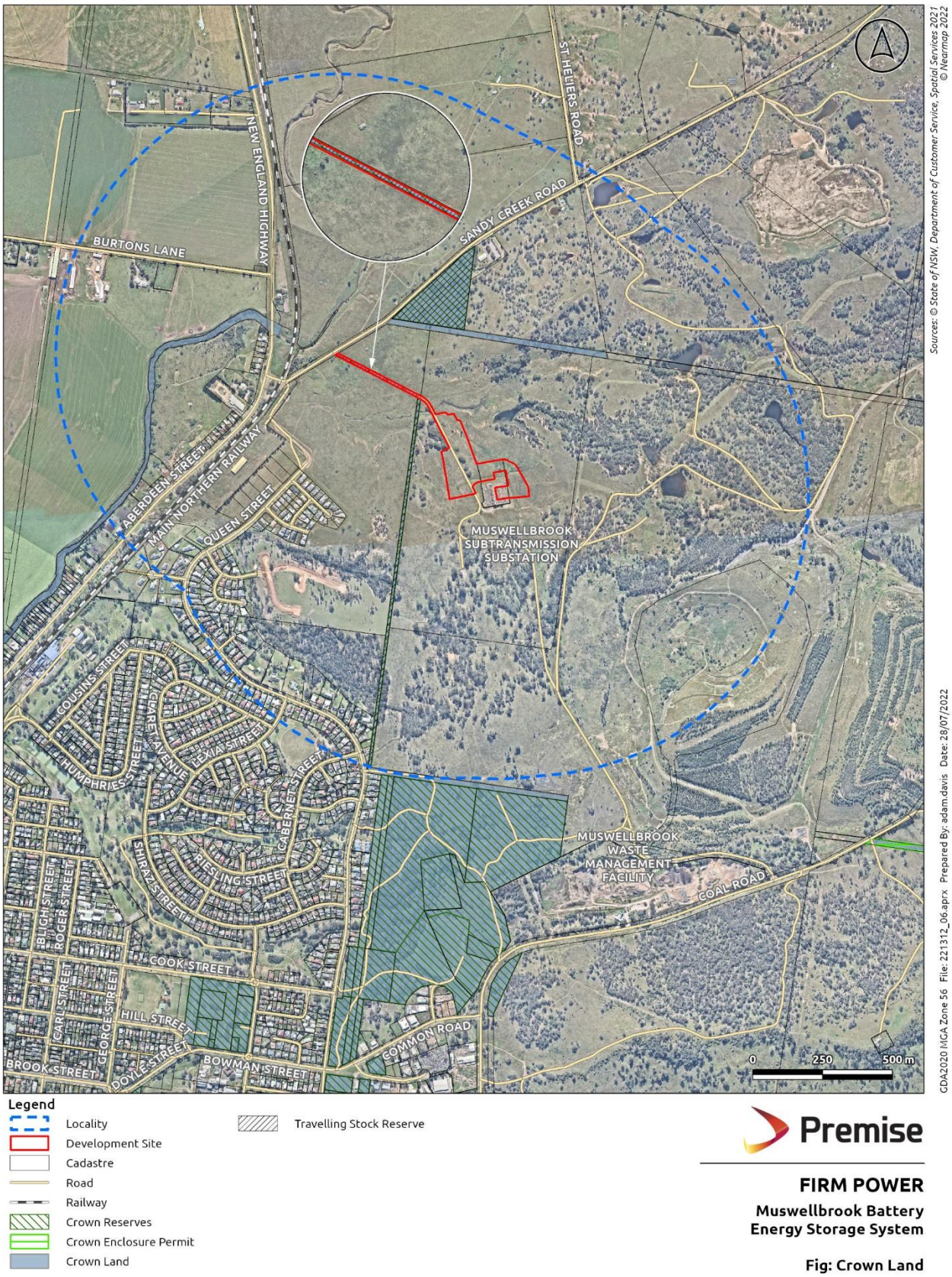


Figure 9 – Mining Licences and Underground Mining (Non-EPI)

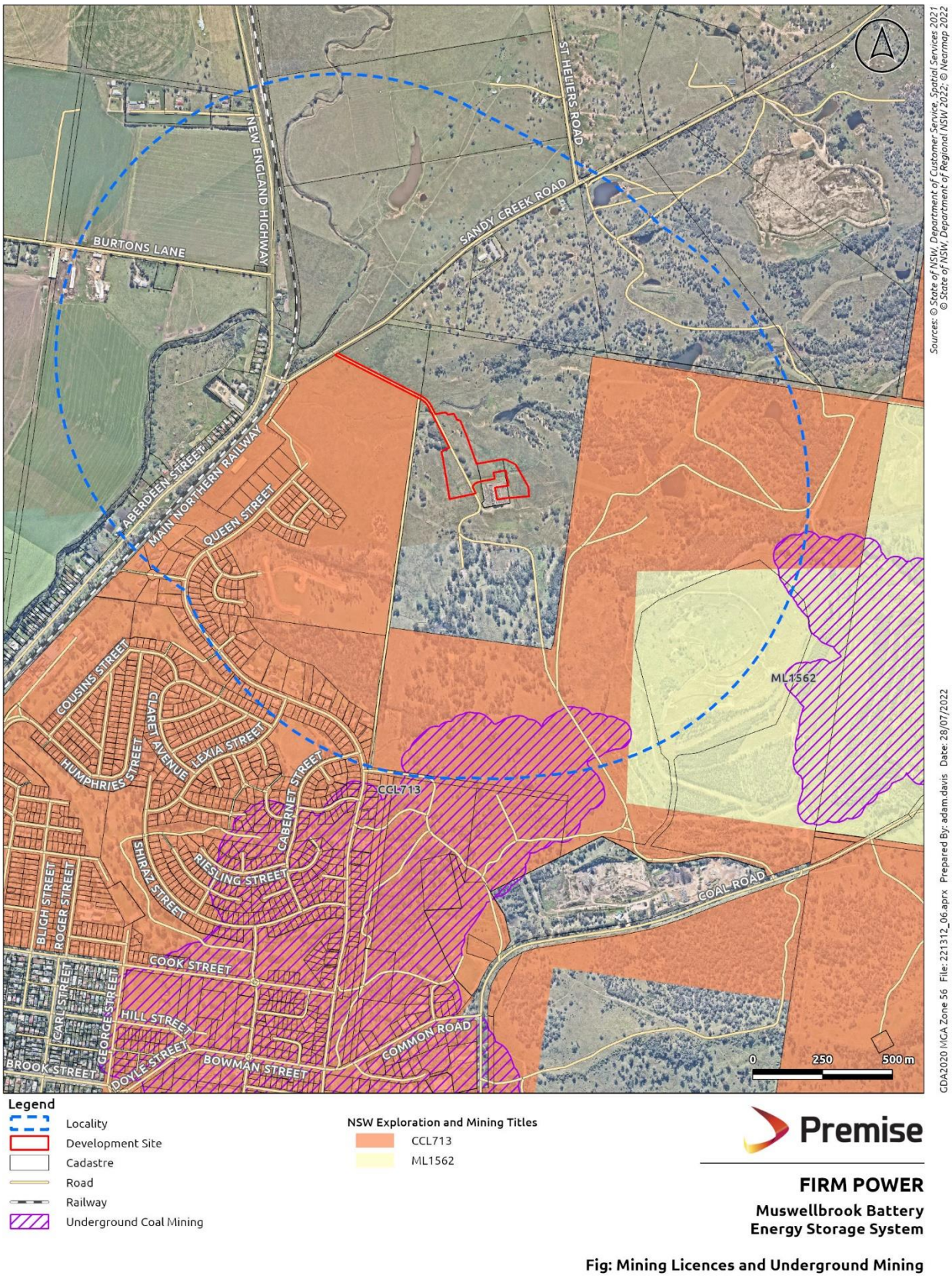


Table 8 – Native Title Applications and Determinations

Application	Date Filed	Decision Date	Application Covers Development Site (Yes/No/Unknown)	Status of Application
Plains Clans of the Wonnarua People (NC2022/001) (NC2022/001)	02/02/2022	11/04/2022	Yes	Discontinued
Warrabinga-Wiradjuri #7 (NC2018/002)	31/08/2018	22/11/2018	No	Active
Warrabinga-Wiradjuri #7 (NC2017/001)	29/05/2017	22/11/2018	No	Pre-combination (Registration expired 22/10/2021)
Wonnarua Traditional Custodians #3 (NC2015/002)	26/10/2015	27/05/2016	Yes	Dismissed
Wonnarua Traditional Custodians #4 (NC2015/003)	26/10/2015	N/A	Yes	Discontinued
Scott Franks and Anor on behalf of the Plains Clans of the Wonnarua People (NC2013/006).	19/08/2013	16/01/2015	Yes	Discontinued (Registration expired 02/03/2020)
Gomeroi People (NC2011/006)	20/12/2011	20/01/2012	**No**	Active
Margaret Matthews (NC2006/006)	16/05/2006	N/A	Unknown	Discontinued
The Wanaruah People (NC2002/011)	16/10/2002	N/A	Unknown	Discontinued
Mimaga Wajaar Traditional Custodians Wanuruah Claim (NC2001/001)	27/02/2001	07/06/2002	Unknown	Dismissed
Stephen Seiver (NP1998/001)	08/07/1998	N/A	Unknown	Discontinued
Stephen Seiver (NP1998/002)	08/07/1998	N/A	Unknown	Discontinued
Stephen Seiver (NP1998/003)	08/07/1998	N/A	Unknown	Discontinued
Stephen Seiver (NP1998/005)	08/07/1998	N/A	Unknown	Discontinued
Boongary Clan of the taurai People (NC1998/008)	31/03/1998	01/12/1999	Unknown	Discontinued
Wonnarua People # 1 (NC1998/004)	13/03/1998	N/A	Unknown	Withdrawn (Registration expired 26/06/1998)
Wonnarua People (NC1996/020)	26/06/1996	N/A	Unknown	Discontinued (Registration expired 20/10/1999)
Wonnarua Tirbal Council # 2 (NC1995/012)	01/12/1995	N/A	Unknown	Discontinued (Registration expired 20/10/1999)

Application	Date Filed	Decision Date	Application Covers Development Site (Yes/No/Unknown)	Status of Application
Wonnarua Tribal Council Inc # 1 (NC1995/008)	31/08/1995	06/12/2001	Unknown	Discontinued (Registration expired 15/09/2006)

While no record of Native title is available via the National Native Title Tribunal's Native Title Register, subsequent consultation with Crown Lands has identified an undetermined Aboriginal Land Claim (ALC: 42806) applying to TSR: 70196 (refer to **Appendix E**). ALC 42806 was lodged by the NSW Local Aboriginal Land Council (NSW LALC) on 20 Jan 2017 and The Wanaruah Local Aboriginal Land Council have provided confirmation that the claim is active.

A review of TSR dealings policy (Crown Lands, 2020a) and assessment report criteria under Part D of the Crown Lands Travelling stock reserves dealings procedure (Crown Lands, 2020b) was conducted on the 29/06/2020 to assess the applicability of Native title to Crown Land. In reference to Section 1.6 of the NSW *Crown Land Management Act 2016* and for the purposes of assessment criteria, the site is situated within the eastern and central division of the state.

Point 5 of the TSR assessment report criteria specifies a need to consider impacts to conservation values, cultural values, heritage (Aboriginal and European) values or other public (such as access, or recreation) values of the TSR and notes:

> *Any proposal on a TSR must consider whether the land is affected by a claim under Aboriginal land rights legislation or if native title has been extinguished. If native title is not extinguished, the dealing may not proceed unless it is validated by a future act or under an ILUA. The case officer must ensure that an Aboriginal Land Claim and Native Title check has been conducted by the business unit responsible for the dealing application.*

A search of the Aboriginal Heritage Information System (AHIMS) has been conducted and identified an Aboriginal heritage site within the site (refer to **Section 2.2.6.10**).

An Aboriginal Cultural Heritage Assessment Report (ACHAR) accompanies the EIS. The potential for the development to impact Aboriginal Cultural heritage is addressed within the ACHAR.

The ACHAR found one (1) recorded Aboriginal item within the development site, Muswellbrook AFT 2. The ACHAR assesses this item with provisionally high social or cultural value, low archaeological/scientific value, low aesthetic value and low historic value concluding:

> *There will be a low level of impact to Aboriginal cultural heritage values as one Aboriginal site will be partially harmed. No intangible heritage values have been identified within the study area.*

The implementation of mitigation measures specified within the ACHAR, including an Aboriginal Cultural Heritage Management Plan (ACHMP), salvage works and the confinement of proposed works to designated areas, are anticipated to minimise the potential for the development to result in land use conflicts associated with impacts to aboriginal heritage.

Ongoing consultation with Hunter LLS, Crown land and the Wanaruah Local Aboriginal Land Council will continue to address concerns during the approval process and is anticipated to minimise the potential for any land use conflicts.

2.2.6 ENVIRONMENTAL FEATURES

2.2.6.1 Topography

The site has a general northern aspect and the locality features undulating topography and watercourses.

A review of elevation within the site via Google Earth Mapping identifies a high point of 170 m Average Height Datum (AHD) to the south and a low point of 156 m AHD at the north-western end of the site access arrangement

2.2.6.2 Vegetation

Several areas in the southern and eastern portion of the locality are mapped as containing Terrestrial Biodiversity under the MLEP.

A Biodiversity Development Assessment Report (BDAR) prepared by EMM (2022) accompanies the EIS and outlines that the site is predominantly cleared and covered by exotic vegetation, with the exception of:

- An approximate area of 0.21 ha occupied by Grey Box-Slaty Box shrub – grass woodland on sandstone slopes of the upper Hunter and Sydney Basin (PCT-1655), located to the east of the proposed internal access track; and
- An approximate area of 0.09 ha occupied by Narrow-leaved Ironbark – Grey Box grassy woodland of the central and lower Hunter (PCT 1603), located in the northern portion of the development footprint.

2.2.6.3 Climate

The closest Australian Bureau of Meteorology (BoM) weather station with daily weather observations is Scone Soil Conservation Service (Station 061089), located approximately 19 km north of the site, west of Scone. Other BoM weather stations are closer to the site but only provide daily rainfall and solar exposure statistics.

Summary climate statistics are provided below and depicted in **Figure 10**:

- The mean annual maximum temperature is 24.3°C and the mean annual minimum temperature is 11.0°C (BoM, 2022).
- Mean annual rainfall is 636.0 mm and records indicate monthly mean rainfall received at the site is highest in the months of November through to February (BoM, 2022).

2.2.6.4 Surface water

Lot 12 DP839233 is traversed by two unnamed tributaries of Sandy Creek. These tributaries merge towards the north of the site before transecting the site access arrangement and draining via the western boundary of Lot 12 DP839233 towards the Hunter River.

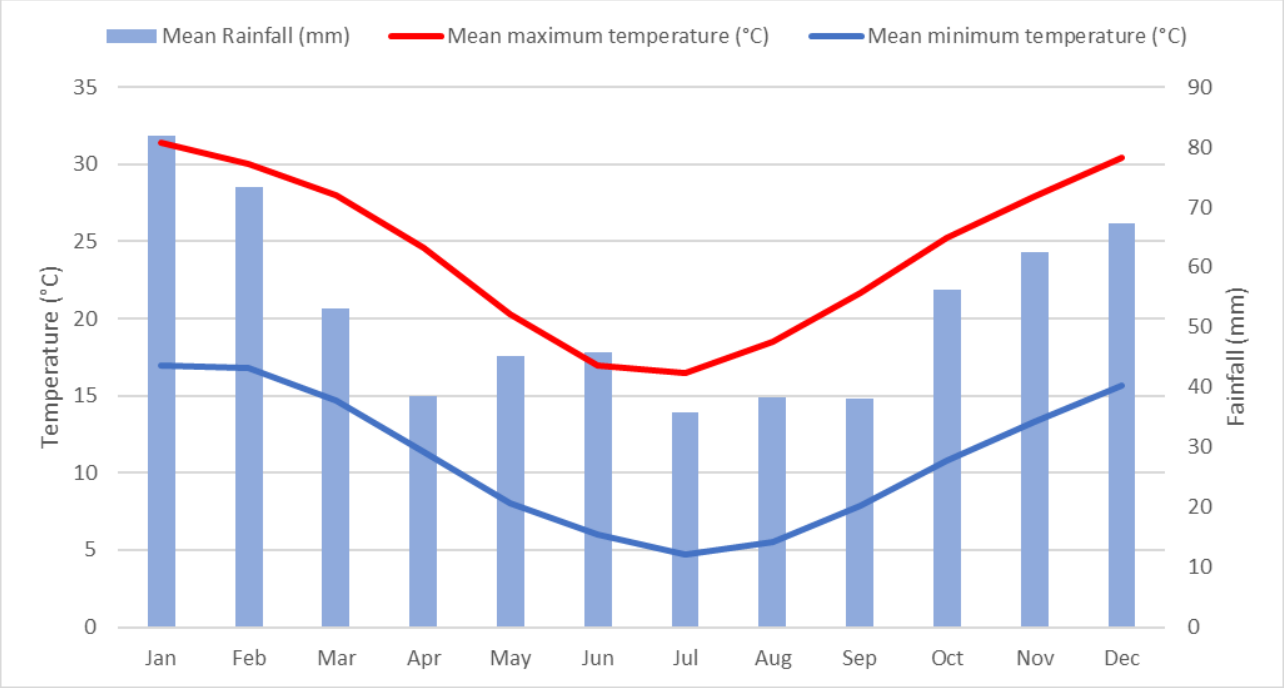
The Hunter River is located approximately 1.4 km west of the site access arrangement, at its closest point.

The Hunter River flows south-west past Muswellbrook towards Denman and then south-east towards Newcastle (approximately 110 km south-east of the site) where it drains into the Tasman Sea.

A review of the NSW Base Map and Satellite Imagery available via the NSW ePlanning Spatial Viewer identifies 1 small dam within the southern portion of the Lot 12 DP839233. Approximately 10 dams are found within the locality to the north, east and south of the site.

A review of NSW ePlanning Spatial Viewer did not identify any mapped riparian land within the site or locality. The closest mapped riparian land is located approximately 5 km north-east of the site, along the Hunter River.

Figure 10 – Climate statistics for the locality



Key fish habitat land is located within the northern portion of the site and transects the site access road (refer to **Figure 12**).

The Biodiversity Assessment Development Report (BDAR) for the project, prepared by EMM (2022), determines that the development is unlikely to significantly impact mapped key fish habitat:

> *Sandy Creek, a sixth order stream occurring with the assessment area, is mapped as KFH (DPIE 2022c). The subject land intersects sections of the riparian corridor associated with an unnamed third order stream. The subject land is not likely to contain KFH and is unlikely to support threatened fish species or threatened aquatic ecological communities due to its ephemeral nature.*
>
> *No threatened fish distributions have been identified for any of the waterways within the subject land. No threatened aquatic ecological communities have been identified within the study area.*

Given the conclusions of the BDAR no significant impacts and/or land use conflicts associated with KFH are anticipated.

2.2.6.5 Groundwater

There is no mapped groundwater vulnerable land mapped via the NSW ePlanning Spatial Viewer within the site or locality.

A review of the Water NSW groundwater bore mapping on 27 July 2022 did not identify any bores located within the site.

A review of the locality identified 8 bores within 1 km of the site. Bores within the locality are outlined in **Table 9.** The closest bore is situated approximately 300 m north of the site. The average known depth of bores in the locality is 9.63 m but no standing water levels are available.

Groundwater bores within the site and locality are depicted in **Figure 12.**

Table 9 – Groundwater bores within the locality

Bore ID	Bore Depth (m)	Drill Date	Intended Purpose	Licence Status	Ownership	Direction from site	Distance from site (m)
GW027411	12.20	01/01/1963	Irrigation	Unknown	Private	North	300
GW027410	12.20	01/01/1953	Irrigation	Unknown	Private	North	320
GW011360	7.90	01/11/1955	Industrial	Current	Private	North-west	430
GW011361	7.90	01/11/1955	Industrial	Unknown	Private	North-west	440
GW024727	Unknown	01/01/1964	Stock	Unknown	Local Government	North-west	620
GW080181	Unknown	02/04/2002	Irrigation	Unknown	Private	North-west	650
GW024728	Unknown	01/01/1964	Stock	Unknown	Local Government	North-west	890
GW043571	9.10	Unknown	General Use	Unknown	Private	North-west	910

2.2.6.6 Flooding

The site is not identified as being within a Flood Planning Area via the MLEP.

The closest Flood Planning Area mapped via the NSW ePlanning Spatial Viewer, is located approximately 5.3 km north-west of the site along the Hunter River.

A Water Assessment (WA) has been prepared by SLR (2022a) and accompanies the EIS. The WA assesses the impact of surrounding watercourses and flooding risks.

The implementation of mitigation measures specified in the WA is anticipated to minimise the potential for land use conflicts with respect to flood potential.

2.2.6.7 Bushfire

The site and locality contain bushfire prone land (non-EPI) mapped via the NSW ePlanning Spatial viewer. As shown in **Figure 12**:

- The site is mapped as Vegetation Category 3.
- The majority of the locality is mapped as Vegetation Category 3.
- Portions of Vegetation Category 1 land extend through the locality to the north, east and south of the site.
- Vegetation buffers in the locality adjoin residential and agricultural land to the west of the site.

A Bushfire Assessment (BA) has been prepared by Cool Burn (2022) and accompanies the EIS. The BA provides several recommendations to ensure that bushfire risks to the site and locality are minimised. The implementation of mitigation measures specified in the BA is anticipated to minimise the potential for land use conflicts.

2.2.6.8 Geology and soil

A Land and Soil Capability (LSC) assessment has been prepared in accordance with the NSW Office of Environment and Heritage (OEH, 2012) *Land and Soil Capability Assessment Scheme: Second Approximation* (LSC Scheme) and accompanies the EIS (SLR, 2022b). The LSC determines that the Land and Soil classes of the

study area range from LSC Class 4 (moderate agricultural capability) to LSC Class 5 (moderate-low agricultural capability) (SLR, 2022b). The LSC further determines that:

> *The entire Study Area is non-BSAL, and was verified as non-BSAL due to poor drainage and moderately low inherent fertility.*
>
> *The likelihood of acid sulfate soils occurring within the Study Area is very low due to its position away from the coast and potential acid sulfate landform type. Furthermore, none of the soil types mapped within the Study Area have acid sulfate soil potential.*

A review the NSW ePlanning Spatial Viewer and SEED Portal mapping did not identify any of the following geological hazards within the site or locality, including:

- Acid sulfate soils are not mapped within the site or locality (SEED Portal). The closest mapped unit is approximately 65 km south-east of the site, within the Maitland LGA.
- No landslide risk land is mapped within the site or locality (NSW ePlanning Spatial Viewer).
- Naturally occurring asbestos (NOA). The Cambrian Melange along Peel Manning fault system has medium asbestos potential and is located approximately 77 km north-east of the site, east of Ellerston (SEED Portal).

Potential geological hazards within the site and locality include:

- The site and locality is within a mine subsidence district (NSW ePlanning Spatial Viewer).
- Underground coal mining in the locality, located approximately 700 m south of the site and 900 m east of the site.

Potential asbestos risks associated with the remediation of Muswellbrook Quarry are located outside of the locality, approximately 1.2km north-east of the site.

Consultation with the NSW Mine Subsidence Advisory to address the site's location within a mine subsidence district and underground coal mining has been conducted (refer to **Section 2.5**). The Subsidence Advisory NSW has indicated that no restrictions apply to the site.

Details of asbestos remediation at Muswellbrook Quarry have been gathered through a review of publicly available meeting minutes from MCC Community Consultative Committee (2021) (refer to **Section 2.2.3.3.2**). The quarry site is located approximately 1.2 km north-east of the site and is unlikely to result in any adverse interactions with the proposed BESS.

2.2.6.9 Contaminated land

A review of the NSW EPA Contaminated Land Record and List of NSW contaminated sites notified to the EPA on the 30 May 2022 confirms there are no known contaminated sites at or near the site.

The closest identified site, a Former Mobil Depot, is located approximately 3.0 km south west of the site at 43-51 Ford street, Muswellbrook.

An assessment of contamination risk has been undertaken and is provided as part of the EIS. The site is unlikely to be contaminated due to significant distances from known contaminated sites listed under the NSW EPA contaminated land record and list of notified sites.

2.2.6.10 Heritage

Local items of heritage significance at the site and locality include:

- The Muswellbrook Brick Works (I112 of the MLEP) is a locally significant item in the locality, approximately 280 m east of the site.
- The 'St Heliers' (I113 of the MLEP) is a locally significant item in the locality, approximately 950 m north of the site.

A Historic Heritage Assessment Report (HHAR) has been prepared by OzArk (2022) and accompanies the EIS. The HHAR concludes that:

> *No historic heritage sites or historic archaeological deposits were recorded in the study area. As such, there will be no impact to historic heritage from the proposal.*

The HHAR provides several recommendations for the management of Historical heritage and values including, but not limited to, the implementation of an unanticipated skeletal remains protocol, a historic heritage unanticipated finds protocol, the restriction of land and ground disturbance activities confined to the study area and the awareness of all staff and contractors involved with the development of legislative protection requirements for all historic items.

Basic searches of the Aboriginal Heritage Information Management System (AHIMS) conducted on 31 May 2022 identified:

- 20 Aboriginal sites or places at or near Lot 12, DP839233 and Lot 15, DP905479 with a buffer of 1 km (**Appendix B)**.
- 3 Aboriginal sites or places at or near Lot 12, DP839233 and Lot 15, DP905479 with a buffer of 50 m (**Appendix C**).

As shown in **Figure 11,** one (1) Aboriginal site or place is located in the immediate vicinity of the site and 16 are located within the broader locality (1 km radius of the site).

An Aboriginal Cultural Heritage Assessment Report (ACHAR) accompanies the EIS. The ACHAR outlines that:

> *The survey for the proposal confirmed the extent of one previously recorded artefact scatter (Muswellbrook Bypass AFT 2) is in the study area. No other Aboriginal sites were identified or areas with subsurface potential…*
>
> *Muswellbrook Bypass AFT 2 is in the proposed footprint of the BESS and associated infrastructure. As such, the portion of the site within the study area will be impacted by the proposal.*

The ACHAR provides a number of recommendations for the management of Aboriginal heritage, including but not limited to, the preparation of an Aboriginal Cultural Heritage Management Plan, salvage works associated with an identified Aboriginal site located in the footprint of the proposal and conditions that will require further consultation and/or assessment.

The implementation of management measures for historic and Aboriginal heritage would ensure that potential land use conflicts relating to heritage values would be minimised.

Figure 11 –Heritage

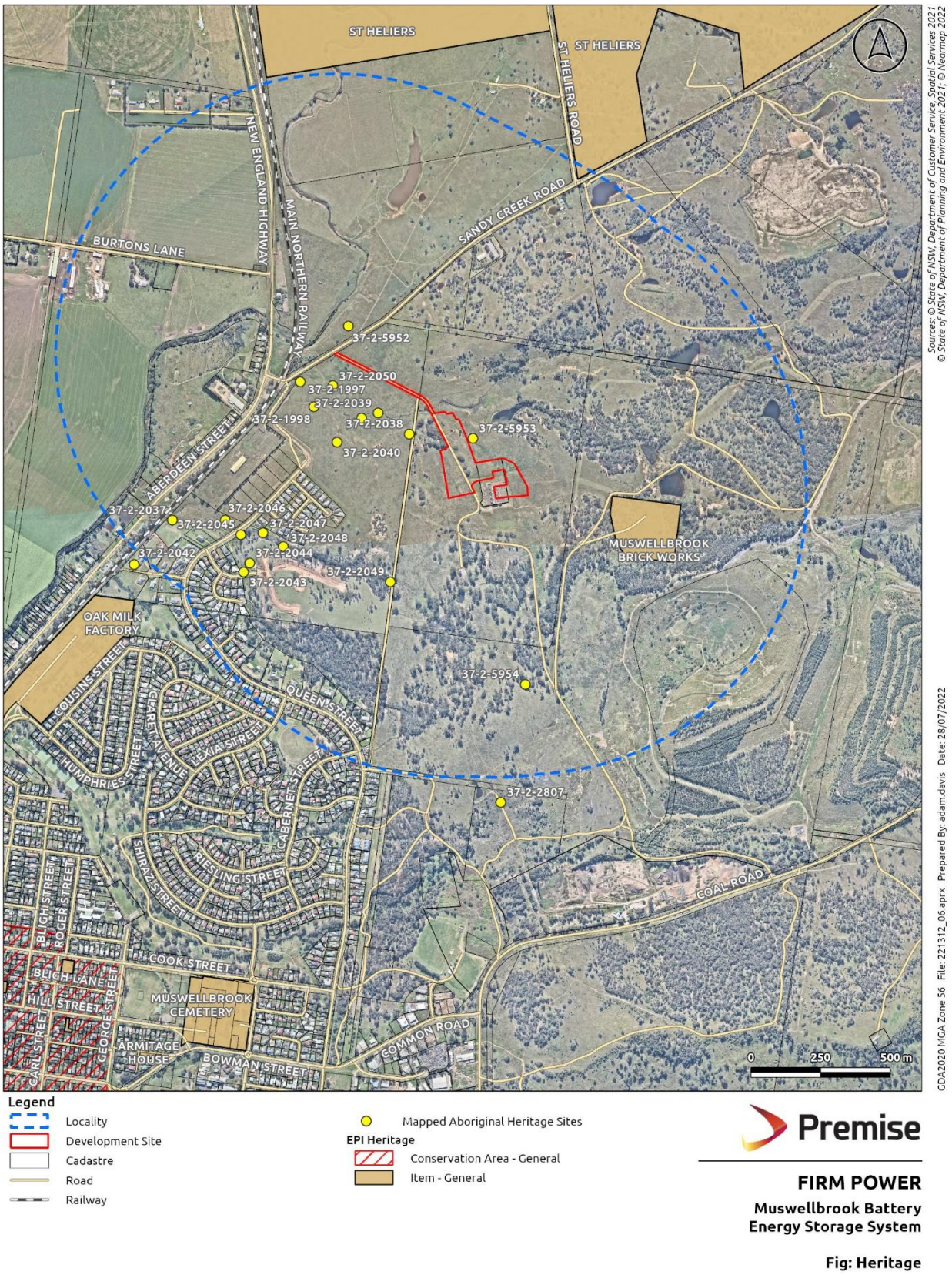


Figure 12 – Environmental features

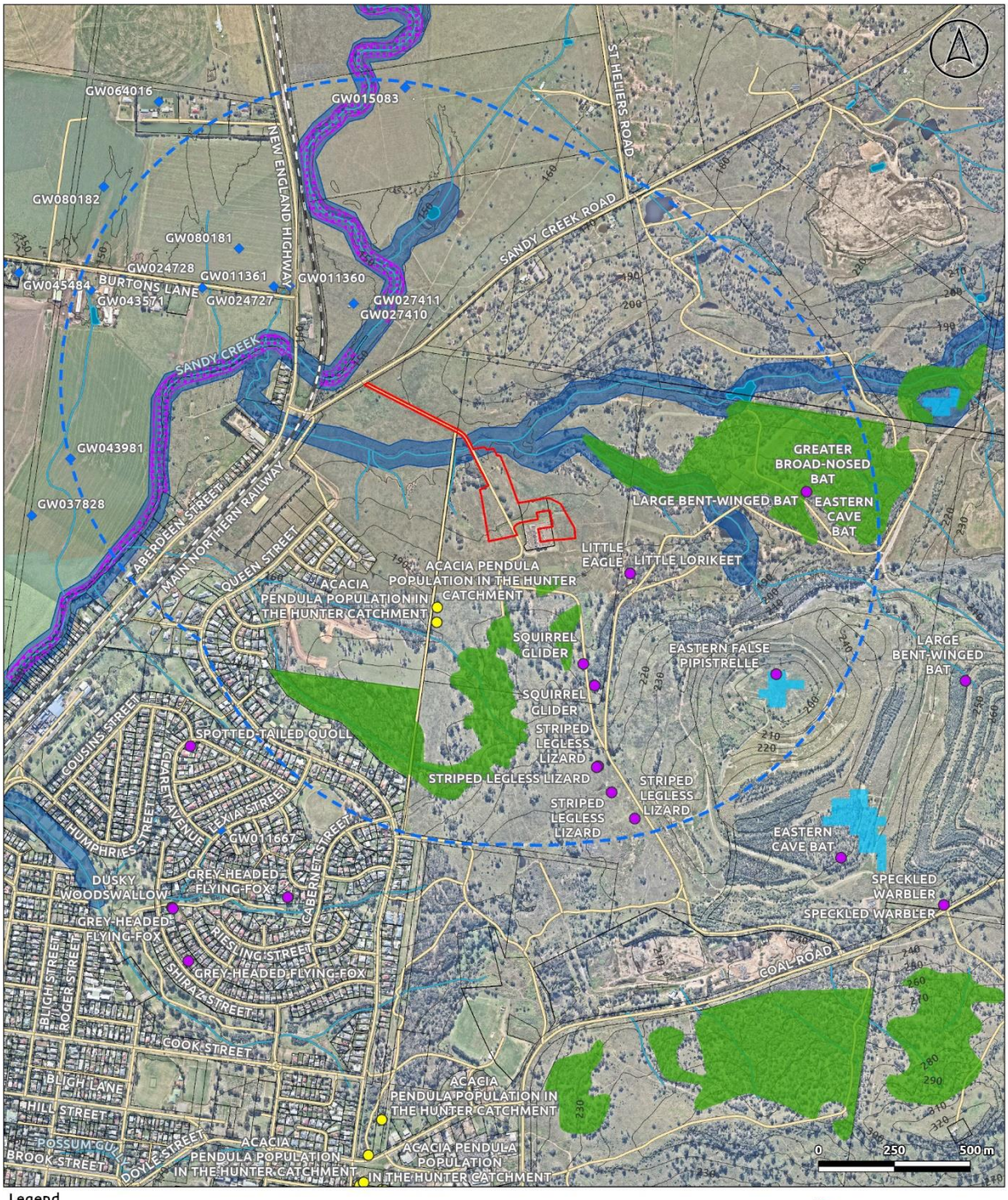
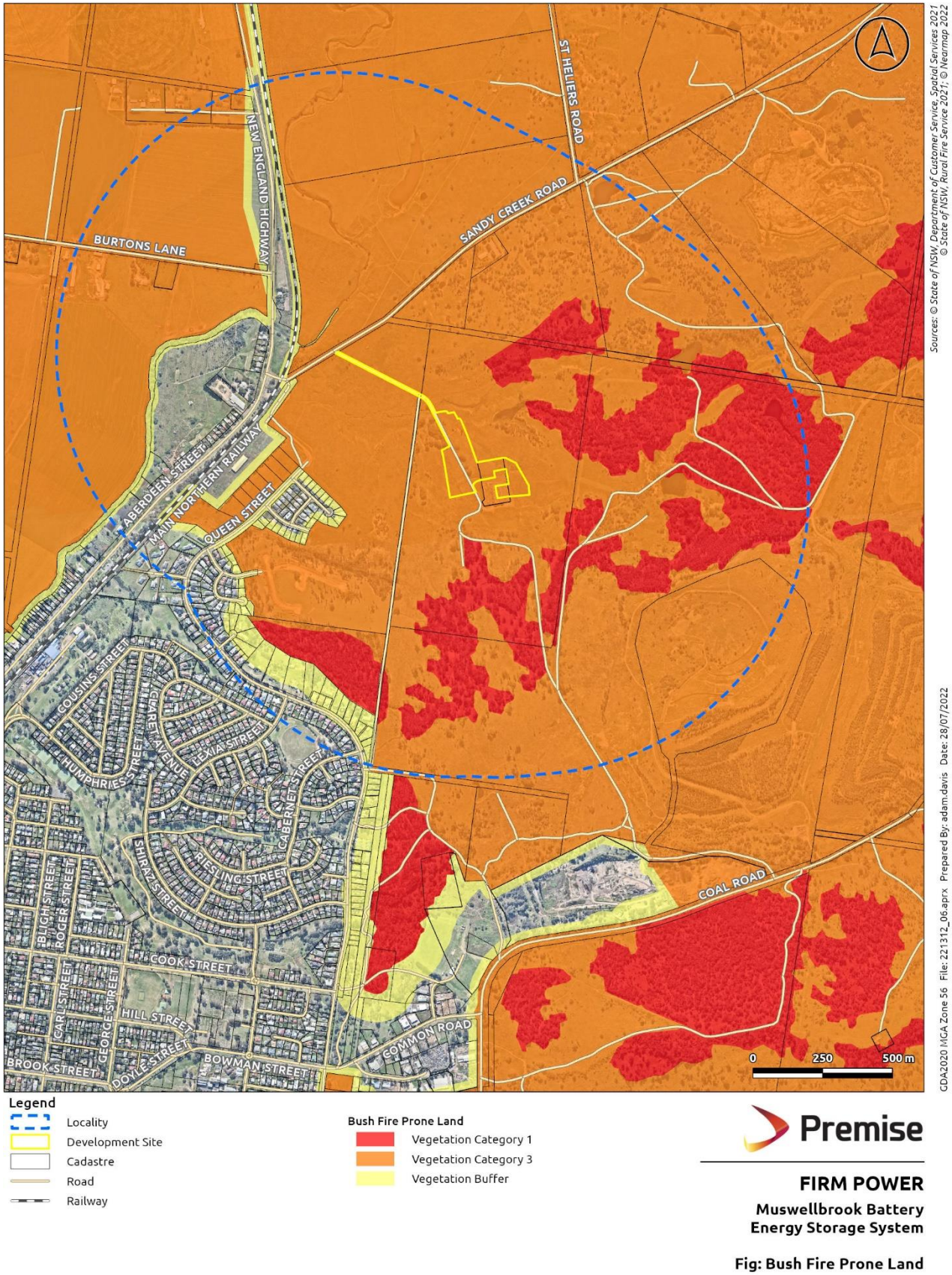


Figure 13 – Bushfire Prone Land



2.2.7 LOCAL COMMUNITY

A Social and Economic Impact Assessment (SEIA) has been prepared by bd infrastructure Pty Ltd and accompanies the EIS. The SEIA outlines the demographics of the local community and assesses the potential of the development to result in social and economic impacts. The following community values and concerns were identified during the preparation of the SEIA:

- Landscape Change
- Visual Amenity
- Air quality
- A just transition; which is used to refer to the disproportionate of changes to electricity prices experienced by households of difference socio-economic status.
- Housing Supply
- Community Cohesion; which is used to refer to the integration of Drive-In-Drive-Out workers into the local community.

The SEIA identified that social impacts (mitigated) would range from low (noise, air quality and visual) to medium (workforce need) impact.

The SEIA identified economic benefits to the Hunter Valley region and NSW economies. No negative economic impacts were identified in the SEIA.

The implementation of mitigation measures specified in the SEIA are anticipated to minimise the potential for land use conflicts.

2.3 Site history

2.3.1 HISTORICAL CONTEXT

A detailed history of Muswellbrook, including indigenous populations and European settlement, is provided in the ACHAR and Historical Heritage Assessment Report (HHAR) prepared by OzArk (2022).

The site is within the Wonnarua tribal area of the upper Hunter Valley and located in the boundaries of the Wanaruah Local Aboriginal Land Council. The ACHAR prepared for this project outlines the following in regard to indigenous history:

> *The Wonnarua people lived in an environment rich in food resources. Freshwater fish, shellfish, reptiles, mammals, birds, and pant food provided a diverse diet (see Brayshaw 1981). Brayshaw (1986: 82) suggests that inland groups visited the coast during the summer when marine resources were plentiful, and coastal groups travelled inland to participate in the winter kangaroo hunts. Trade and/or exchange also occurred between the coastal and inland groups. Reed spears and shells were traded inland for possum skin rugs and fur cord (Brayshaw 1986: 41). Social gatherings were a feature of Aboriginal life in this area.*
>
> *From 1825, there is documented conflict between the Aboriginal population and settlers within the Hunter Valley, including the Ravensworth/Foy Brook area (for example, The Australian, 9 September 1826 [http://trove.nla.gov.au/ndp/del/page/4248909]). Although the exact location of these conflicts is unknown, the history of raids and counter-raids demonstrate that the Wonnarua people were fierce defenders of their tribal lands.*

A review of the NSW Landuse 2017 mapping identifies that the site has been previously used for agricultural purposes. The historical context of the Hunter region and agriculture is outlined in the HIS prepared by Ozark (2022). The HIS provides the following historical summary of European settlement in the Hunter Region and Muswellbrook:

> *The Hunter region was first explored by Europeans in 1797, when Lieutenant John Shortland discovered coal at the mouth of the Hunter River. Subsequent explorations, such as the overland journeys of Chief Constable John Howe and Benjamin Singleton, pushed further into the Lower Hunter Valley, and the area around present-day Muswellbrook was reached in 1820.*
>
> *By 1822, the penal colony at Newcastle was closed and the Hunter Valley opened to free settlement. Early colonial occupation had two distinct patterns: the lower Hunter was divided into many small landholders on agricultural plots; the upper Hunter tended to feature large pastoral runs (Weir Phillips 2009: 4–5). Townships in the upper Hunter began to develop around these stations by the 1830s, with Singleton growing unofficially around Singleton's station and Muswellbrook being gazetted officially in 1833. By 1825, the major estates of Merton, Pickering, St. Heliers and Overton had been granted (Turner 1995 cited in AECOM 2021).*
>
> *Most estates and stations were focused on grazing, wool production and breeding cattle and horses. While there was some cultivation during the 19th Century along the Hunter River floodplains, it was not until the 20th Century that agricultural industry became more diverse and widespread, including dairy farming and wine production (AECOM 2021). After the First World War, many of the larger rural estates were subdivided into smaller farms and dairying replaced with wheat and wool as the main rural industry.*
>
> *Although coal was discovered in the Muswellbrook district in the 1860s, it was not until the 1950s that it became a major industry in the Upper Hunter (Heritage Office 1996:4). These Upper Hunter coal mines (including those between Muswellbrook, Singleton and Denman) used highly mechanised open-cut mining to extract resources (Rappoport 2006: 24). After its construction in the mid-1960s, coal mined from Muswellbrook was supplied to the Liddell Power Station. Since the middle of the 20th Century, the coal and power generation industry has influenced the economy and character of Muswellbrook and represents one the region's key historical themes.*

2.3.2 HISTORICAL IMAGERY

A review of the NSW Governments Historical Imagery Viewer (NSW Government, 2022) confirms the site has been used for the Muswellbrook Substation since 1974.

Imagery highlighting historic land use from 1974 (partial), 1989 and 1998 is provided in **Figure 14 – Figure 16** and demonstrates the following:

- The site has been occupied by the Muswellbrook Substation since 1974.
- The site and locality have historically been comprised of rural agricultural land holdings with residential dwellings and associated farm infrastructure, including sheds, farm dams and paddock fencing.
- Residential development has expanded in a north-easterly direction towards the site boundary since 1974.
- The extent of vegetation within the site and locality has remained relatively consistent between 1974 and 1998.

2.3.3 APPROVALS

A review of MSC's DA tracker on the 28 June 2022 for current development applications did not identify any applications currently impacting the site. The closest development application is located at 95 Queen Street, approximately 400 m south-east of the site and is for Ancillary Development (Shed and Carport).

2.4 Site inspection

A site inspection was completed by Premise's Senior Town Planner on 4 March 2022. The inspection provided insight into the current nature, use and operation of land within the site and locality.

Representative photographs for built and environmental features, and land uses in the locality are provided in **Appendix D**.

2.5 Consultation

Firm power engaged bd Consulting to prepare an engagement strategy to guide consultation for the proposed Muswellbrook BESS. The engagement strategy included commitments and approaches to ongoing forms of consultation. A detailed overview of engagement for the project is included within the EIS and engagement strategy.

Consultation during the scoping stage and preparation of the EIS has included:

- Doorknocking and a community notification letter issued to 41 non-associated landowners located in proximity to the site during the scoping stage of the project. The notification introduced the project, outlined the planning process and provided contact details for the community feedback.
- Community notification letters issued to 8 community groups between the 27th and 29th of September detailing the project and providing contact details for providing feedback.
- A project website launched in September 2021 that provides an overview of the project and details the development application process.
- Engagement advices issued to the Local Aboriginal Land Council, NSW Rural Fire Service, Fire and Rescue NSW, Transport for NSW, Natural Resource Access Regulator, Department Primary Industries (Fisheries and Environmental Protection Authority.
- Direct consultation with indigenous communities as part of the Aboriginal Cultural Heritage Assessment Report (ACHAR),
- Additional consultation with nearby residents and the surrounding community as part of the Social and Economic Impact Assessment (SIA),
- Discussions with relevant government authorities and other third parties including TfNSW, Subsidence Advisory, Local Land Services, Muswellbrook Shire Council and Muswellbrook Coal Company.

Consultation with regulatory authorities, the community and other relevant stakeholders will continue throughout project construction and operation, as required, to ensure that future concerns are appropriately identified and addressed.

Figure 14 – Historical Imagery 1974 (partial)

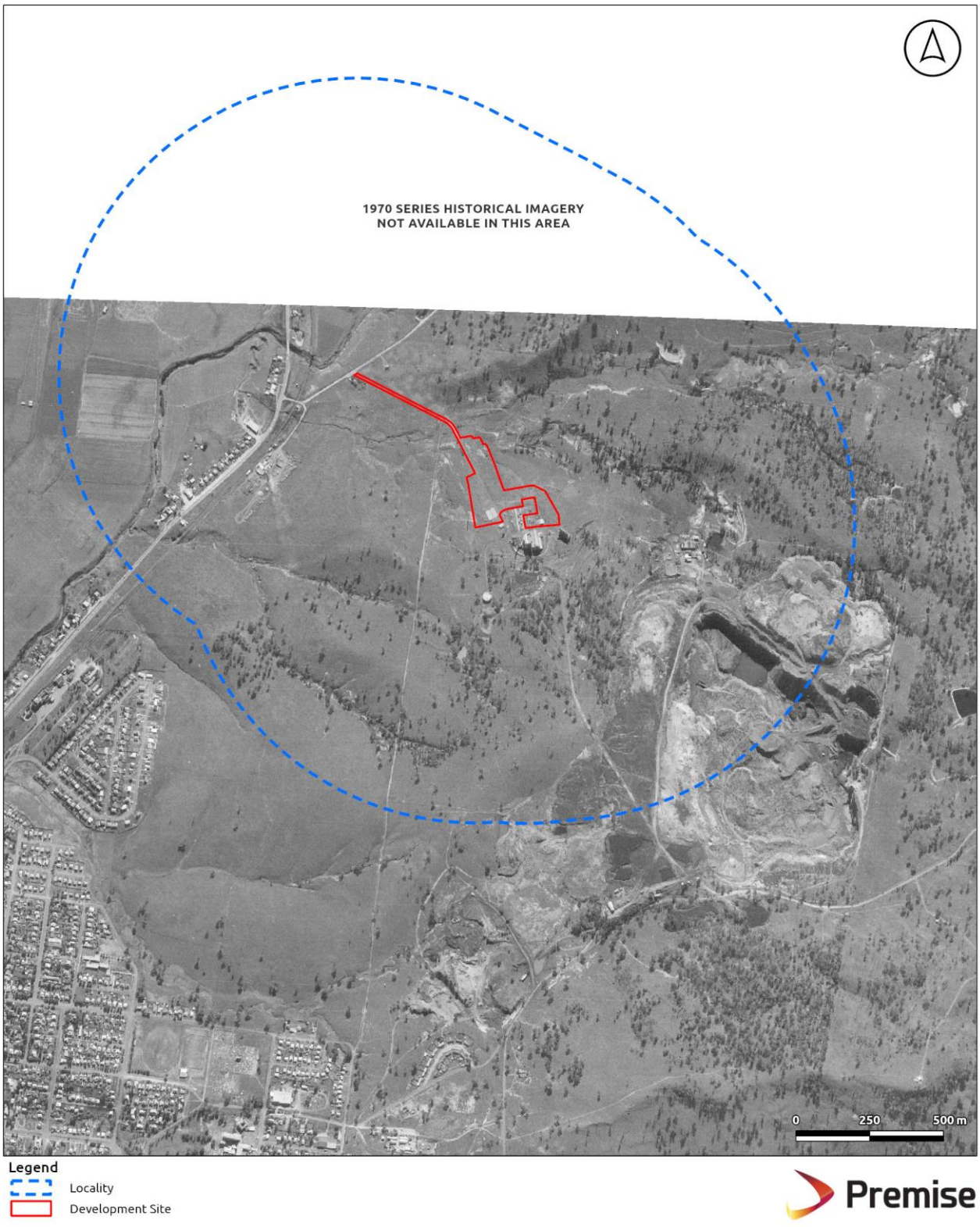


Figure 15 – Historical Imagery 1989

Figure 16 – Historical Imagery 1998

Feedback and concerns raised during consultation include:

- Concerns about visual impacts.
- Commitments to a complaint and enquiry system.
- Concerns about construction impacts including noise and air quality impacts.
- Concerns about site access arrangements and impacts to travelling stock reserves.
- Concerns about housing availability
- Interest in financial benefits and employment opportunities
- Communications and logistical arrangements with project teams responsible for the Muswellbrook Bypass.

The above feedback and concerns have been considered in the risk assessment in **Section 3** of this report.

2.6 Potential incompatibility and conflict issues

Potential conflict can arise from incompatibility of land uses or conflicting interests over the use of land by the land occupier, surrounding landowners or users, or other stakeholders with an interest in the site and locality.

With respect to compatibility of the proposed Muswellbrook BESS with current land use, the following is noted:

- Ausgrid currently own Lot 11 DP839233 and Lot 12 DP839233, land which is used for the operation of the Ausgrid Muswellbrook Substation.
- Crown lands currently own Lot 15 DP905479 a portion of the site which is to be used to provide site access. Lot 15 DP905479 contains a travelling stock reserve (TSR: 70196) managed by Hunter Local Land Services.
- The proposed BESS is permissible with consent on land zoned C3 – Environmental Management and SP2 – Infrastructure
- There are no other known stakeholders who have expressed an interest in the BESS site.

It is considered unlikely that the proposed development would result in a land use conflict for the current landowners (Ausgrid and Crown Lands).

To consider potential land use conflicts associated with surrounding land users and other potential stakeholders, the risk assessment in **Section 3** of this report addresses the following:

- **Surrounding land uses** determined via desktop and site information identified during the preparation of the LUCRA, including:
  - Agriculture – grazing, cropping and horticulture
  - Residential
  - Extractive industry – this includes quarries and mines in the locality
  - Infrastructure
  - Resource protection – in the locality this includes areas of vegetation including any identified parks and reserves, riparian corridors and areas used for recreational purposes.
  - Waste Management
  - Water storage, including reservoirs and dams
- **Stakeholders** – this includes those who may own, occupy, use the land (where known) or have an interest in the land. The following categories of stakeholders have been adopted for the risk assessment:
  - Private property owner
  - Business operator

  - Service provider i.e. energy and telecommunications
  - Public authorities
  - Associations
  - Indigenous community
  - Individuals
- **Conflict of interest** – this describes the potential conflict of interest each stakeholder has in relation to the proposed development. The following categories of potential conflicts have been adopted for the risk assessment:
  - Competing industries
  - Land ownership
  - Economic interest
  - Access and traffic
  - Environmental concern
  - Nuisance
  - Risk to property
  - Health and safety
  - Quality of life
  - Security and privacy
  - Amenity

The potential land use conflicts are described in detail in the full risk assessment table in **Appendix A.**

3. LAND USE CONFLICT RISK ASSESSMENT

3.1 Introduction

The LUCRA process evaluates the probability and consequence of potential land use conflicts and uses a matrix to estimate risk, provided in **Table 10.** Associated tables for determining probability and consequence are provided in **Table 11** and **Table 12**, respectively.

A risk ranking of 25 is the highest magnitude of risk; a highly likely, very serious event. A rank of 1 represents the lowest magnitude or risk an almost impossible, very low consequence event.

Risk Rankings have been categorised in terms of their probability and consequence as:

- Low Risk, risk ranking between 1 and 10
- Moderate Risk, risk ranking between 11 and 19
- High Risk, risk ranking between 20 and 25

Table 10 – Risk ranking matrix

	PROBABILITY				
CONSEQUENCE	**A** **Almost certain**	**B** **Likely**	**C** **Possible**	**D** **Unlikely**	**E** **Rare**
1 – Severe	25	24	22	19	15

2 – Major	23	21	18	14	10
3 – Moderate	20	17	13	9	6
4 – Minor	16	12	8	5	3
5 - Negligible	11	7	4	2	1

Table 11 – Probability table

Level	Descriptor	Description
A	Almost Certain	Common or repeating occurrence
B	Likely	Known to occur, or 'it has happened
C	Possible	Could occur, or 'I've heard of it happening'
D	Unlikely	Could occur in some circumstances, but not likely to occur
E	Rare	Practically impossible

Table 12 – Measure of consequence

Level	Descriptor	Description
1	Severe	• *Severe and/or permanent damage to the environment and community* • *Irreversible* • *Neighbours are in prolonged dispute and legal action involved*
2	Major	• *Serious and/or long-term impact to the environment and community* • *Long-term management implications* • *Neighbours are in serious dispute*
3	Moderate	• *Moderate and/or medium-term impact to the environment and community* • *Some ongoing management implications* • *Neighbour disputes occur*
4	Minor	• *Minor and/or short-term impact to the environment and community* • *Can be effectively managed as part of normal operations* • *Infrequent disputes between neighbours*
5	Negligible	• *Very minor impact to the environment and community* • *Can be effectively managed as part of normal operations* • *Neighbour disputes unlikely*

3.2 Risk assessment

The risk assessment identifies and evaluates potential land use conflicts associated with the proposed BESS.

A risk ranking is determined based on probability and consequence, and a revised risk ranking is determined based on implementation of identified management strategies.

A detailed risk assessment is provided in **Appendix A** and a summary of the risk assessment is provided in **Table 13**.

Table 13 – Summary of risk assessment

Land use	Stakeholders	Category	Initial Risk	Revised Risk
All Land Uses	All Stakeholders	Health and safety - EMF	14	10
		Risk to property - fire	18	14
		Risk to property - flood	18	9
Agriculture	Private property owners Individuals Business Operators Associations	Competing industries – agricultural expansion	13	9
		Competing industries – land suitability	13	9
		Access and traffic - interaction	8	5
		Nuisance – livestock behaviour	8	5
		Nuisance – air quality	8	5
		Environmental concern - weeds	13	9
		Amenity - waste	8	5
Extractive industry	Public authorities Business operators	Competing industries – extractive materials	13	9
		Access and traffic - interaction	8	5
		Nuisance – dust/blasting	8	2
		Nuisance – air quality	13	9
		Environmental concerns – cumulative impacts	17	9
		Health and safety - blasting	17	9
		Health and safety – contamination and subsidence	21	9
		Economic interests - insurance	17	13
Infrastructure	Public Authorities Service Providers	Risk to property - infrastructure	13	9
		Access and traffic – access/services	8	5
		Competing industries – future project expansion	17	13
Residential	Private property owners Individuals (i.e. occupants of residential dwellings) Public authorities Service providers	Economic interest - demand	8	5
		Access and traffic - commute	8	5
		Access and traffic -access/services	8	5
		Nuisance - noise	17	9
		Nuisance - waste	5	3
		Quality of life	13	8
		Security	13	8
		Privacy	13	9
		Health and safety – air quality	8	5

Land use	Stakeholders	Category	Initial Risk	Revised Risk
		Nuisance – air quality	8	5
		Amenity - visual	13	8
		Land ownership - foreign	8	2
		Land ownership – public authorities	17	8
		Competing industries - expansion	13	9
		Economic interest - insurance	17	13
Resource protection Note: In the locality this includes areas of vegetation and riparian corridors in the NSW 2017 Land Use Mapping	Public authorities Associations Individuals Indigenous community	Environmental concerns - heritage	13	9
		Environmental concerns - water	13	9
		Environmental concerns - biodiversity	13	9
Waste Management	Public authorities Business operators	Competing industries - expansion	13	9
		Access and traffic - interaction	8	5
		Nuisance – air quality	8	2
		Nuisance - air quality	13	9
		Environmental concerns - cumulative	17	9
		Health and safety - waste	13	9
		Economic interests - insurance	17	13
Water storage	Public authorities Private property owners Indigenous Community	Health and safety - water	13	9
Average risk ranking			12.3	7.6

3.3 Risk reduction management strategies

Consistent with the LUCRA Guide, an objective of the LUCRA is to identify and define management strategies that lower the risk ranking score to low risk (10 or below).

Management strategies are developed to minimise the effects or potential for land use conflict to occur.

Performance targets are identified for each management strategy, detailing how the effectiveness of the strategy will be monitored.

Management strategies and performance targets are defined below and detailed in **Appendix A**.

3.4 Performance monitoring

Performance monitoring is required to ensure management strategies minimise the risk of potential land use conflicts during all stages of the project.

Various management plans will be prepared and implemented during the construction, operational and decommissioning phases of the project, including:

- Construction Environmental Management Plan (CEMP)
- Operational Environmental Management Plan (OEMP)
- Decommissioning Management Plan (DMP)
- Any other management plan specified in the EIS or conditions of consent (if approved)

The management plans will address all requirements specified in the EIS and supporting documents, as well as any consent conditions (if approved). These plans will provide documented requirements for performance measures and monitoring during each stage of the project.

Performance will also be monitored through the outcomes of consultation during all phases of the project. Monitoring community feedback and concerns are key to assessing the performance of management strategies.

4. LIMITATIONS AND ASSUMPTIONS

This LUCRA has relied on the following information to evaluate potential land use conflicts:

- Observations made via a site inspection.
- Consultation with surrounding landowners and stakeholders.
- Desktop research and mapping of the site and locality.
- Information provided by Firm Power.

The following limitations apply to this LUCRA:

- Mitigation measures from the EIS and supporting impact assessments, where implemented effectively, are likely to reduce the risk of potential land use conflicts. However, the implementation of mitigation measures may not reduce the risk of all potential land use conflicts.
- The identification of land uses and conflicts within this LUCRA may be limited by the detail and number of responses received during consultation. There is potential for other land uses and conflicts, not previously identified, to occur within the locality.

5. KEY DOCUMENTS

All documents reviewed as part of this LUCRA are provided in the references in **Section 7.**

6. CONCLUSIONS

This LUCRA has identified potential land use conflicts and evaluated their risk. The overall risk ranking (revised, to account for management strategies) for potential land use conflict ranges from low to moderate.

A total of 47 potential land use conflicts were identified.

The initial risk ranking identified 16 low risk, 30 moderate risk conflicts and 1 high use conflict. The initial high risk land use conflict relates to the potential for subsidence, historical underground mining and/or asbestos remediation to impact the BESS.

The revised risk ranking identified 42 low risk and 5 moderate risk conflicts.

The average risk ranking of all identified conflicts was reduced from an initial risk ranking of 12.3 (moderate risk) to a revised risk ranking of 7.6 (low risk).

The average revised risk ranking for all identified land use conflicts is below 10 which is consistent with the LUCRA objective to lower the risk ranking to 10 or below.

Revised risk rankings identified low risk conflicts mostly related to access and traffic, nuisance and competing industries.

Revised risk rankings identified moderate risk conflicts for the following:

- All land uses
  - Risk to property, including bushfire risks
- Extractive industry land use
  - Economic interests, including impacts to insurance premiums.
- Infrastructure land use
  - Competing industries, including the potential for future infrastructure development to impact the BESS site (e.g. Muswellbrook Shire Council Waste facility and New England Highway Muswellbrook Bypass).
- Residential land use
  - Economic Interests, including impacts to insurance premiums.
- Waste management land use
  - Economic interests, including impacts to insurance premiums.

The effective implementation of management strategies (detailed in **Appendix A**) is likely to minimise the risk of potential land use conflicts.

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APPENDIX A

RISK ASSESSMENT

Land use	Stakeholders	Category	Potential Land Use Conflict	Initial risk ranking			Risk reduction management strategy	Revised risk ranking			Performance target and monitoring
				P*	C*	R*		P*	C*	R*	
All Land Uses	All Stakeholders	Health and safety - EMF	Land users in the locality may be concerned about electro-magnetic fields (EMF) resulting from electrical infrastructure associated with the development.	D	2	14	• Consideration of EMF impacts resulting from the development has been undertaken as part of the EIS. EMF exposure levels are not expected to exceed the International Commission on Non-Ionizing Radiation Protection reference level for the general public. No adverse impacts to human health at the site or in the locality are therefore anticipated. On this basis, specific mitigation measures are not required. • Ongoing consultation with stakeholders will identify and address concerns if they arise. • Implement all measures specified in management plans identified in the EIS and/or consent conditions (if approved).	E	2	10	Performance targets will be determined via management plans specified by the EIS (and specialist impact assessments) and development consent conditions (if approved). Monitoring will be undertaken in accordance with those management plans.
		Risk to property - fire	Land users in the locality may be concerned about the risk of fires occurring at the site and their potential to spread to surrounding land.	C	2	18	• Consideration of potential bushfire impacts has been undertaken as part of a Bushfire Assessment (BA) accompanying the EIS. Appropriate mitigation measures are specified within the bushfire assessment to minimise the risk of bushfire incidents including their risk to people and potential to damage surrounding land. • Consideration of potential risks of fire hazards arising from BESS has been undertaken as part of a Preliminary Hazard Analysis (PHA) accompanying the EIS. The PHA identifies those risks at the site boundary are not considered to exceed the acceptable risk criteria. • Compliance with mitigation measures specified in the BA and EIS is anticipated to reduce the risk of potential conflicts related to bushfires. • Ongoing consultation with stakeholders will identify and address concerns if they arise. • Implement all measures specified in management plans identified in the EIS and/or consent conditions (if approved).	D	2	14	As above
		Risk to property - flood	Land users in the locality may be concerned about the risk of flooding resulting from the development and their potential to spread and impact surrounding land.	C	2	18	• Consideration of potential flooding and hydraulic impacts has been undertaken via a Water Assessment (WA) and as part of the EIS. The assessment concludes that the proposal is not likely to lead to off-site impacts. • Compliance with mitigation measures specified in the WA and EIS is anticipated to reduce the risk of potential conflicts related to water quality and flooding.	D	3	9	As above

Land use	Stakeholders	Category	Potential Land Use Conflict	Initial risk ranking			Risk reduction management strategy	Revised risk ranking			Performance target and monitoring
				P*	C*	R*		P*	C*	R*	
							• Ongoing consultation with stakeholders will identify and address concerns if they arise. • Implement all measures specified in management plans identified in the EIS and/or consent conditions (if approved).				
Agriculture	• *Private property owners* • *Individuals* • *Business operators* • *Associations*	Competing industries – agricultural expansion	The placement of the BESS on agriculturally viable land may cause conflict with surrounding agricultural operators interested in expanding their operations onto the site.	C	3	13	• The reversibility of the project would allow the site to be returned to its existing land use, therefore minimising potential for long term conflict and impacts to future agricultural activities. • Existing consultation and engagement for the project has not identified any intent for surrounding agricultural industries to expand operations onto the site. • Ongoing consultation with stakeholders will identify and address concerns if they arise. • Implement all measures specified in management plans identified in the EIS and/or consent conditions (if approved).	D	3	9	As above
		Competing industries – land suitability	Stakeholders may have concerns that the construction and operation of the BESS may alter and disturb existing soil properties, undermining the suitability of the land for future agricultural production.	C	3	13	• Consideration of potential soil and land capability has been undertaken via the LSC assessment. Appropriate mitigation measures are specified in the LSC assessment to minimise impacts to soils. • Compliance with mitigation measures specified in the LSC is anticipated to reduce the risk of potential conflicts related to future land capability for agriculture. • Ongoing consultation with stakeholders will identify and address concerns if they arise. • Implement all measures specified in management plans identified in the EIS and/or consent conditions (if approved).	D	3	9	As above
		Access and traffic - interaction	Use of surrounding roadways during construction of the BESS may cause conflict by interacting with agricultural transport activities.	C	4	8	• Consideration of potential traffic impacts has been undertaken via a Traffic Impact Assessment (TIA). Appropriate mitigation measures are specified within the TIA to minimise impacts to the traffic environment. • Compliance with mitigation measures specified within the TIA is anticipated to reduce the risk of conflict related to traffic for agricultural land users. • Ongoing consultation with stakeholders will identify and address concerns if they arise.	D	4	5	As above

Land use	Stakeholders	Category	Potential Land Use Conflict	Initial risk ranking			Risk reduction management strategy	Revised risk ranking			Performance target and monitoring
				P*	C*	R*		P*	C*	R*	
							• Implement all measures specified in management plans identified in the EIS and/or consent conditions (if approved)				
		Nuisance – livestock behaviour	Construction activity disturbances may affect livestock behaviour and/or breeding.	C	4	8	• Consideration of potential noise and vibration impacts has been undertaken as part of the EIS. Appropriate mitigation measures are specified within the EIS to minimise noise and vibration impacts. • Based on the preliminary separation distances, the type of development and the mitigation proposed, adverse impacts from noise and vibration during construction and operation are not predicted. • Compliance with mitigation measures within the EIS is anticipated to reduce the risk of conflict related to noise and vibration impacts on agricultural land users. • Ongoing consultation with stakeholders will identify and address concerns if they arise. • Implement all measures specified in management plans identified in the EIS and/or consent conditions (if approved).	D	4	5	As above
		Nuisance – air quality	Excess dust generated by construction activities may cause conflict by impacting the operations and productivity of surrounding agricultural land	C	4	8	• Consideration of potential dust impacts has been undertaken as part of the EIS. Appropriate mitigation measures are specified within the EIS to minimise the risk for dust to spread throughout the site and onto neighbouring land. • Compliance with mitigation measures specified within the EIS is anticipated to reduce the risk of conflict related to air quality impacts. • Ongoing consultation with stakeholders will identify and address concerns if they arise. • Implement all measures specified in management plans identified in the EIS and/or consent conditions (if approved).	D	4	5	As above
		Environmental concern - weeds	Pedestrian and vehicle movements during construction may affect the distribution of weeds which could impact agricultural productivity at the site and locality.	C	3	13	• Consideration of impacts to biodiversity has been undertaken via a BDAR. Appropriate mitigation measures are specified within the BDAR to minimise the risk for weeds to spread throughout the site and onto neighbouring land. • Compliance with mitigation measures specified with the BDAR is anticipated to reduce the risk of conflict relating to the spread of weeds • Ongoing consultation with stakeholders will identify and address concerns if they arise.	D	3	9	As above

Land use	Stakeholders	Category	Potential Land Use Conflict	Initial risk ranking			Risk reduction management strategy	Revised risk ranking			Performance target and monitoring
				P*	C*	R*		P*	C*	R*	
							• Implement all measures specified in management plans identified in the EIS and/or consent conditions (if approved).				
		Amenity - waste	Waste generated by the development may increase the presence of pest animals and/or vermin which could impact agricultural productivity.	C	4	8	• Consideration of waste related impacts has been undertaken as part of the EIS. Appropriate mitigation measures are specified within the EIS to minimise the risk of attracting pest animals and/or vermin. • Compliance with mitigation measures specified in the EIS is anticipated to reduce the risk of conflict related to pest animals and/or vermin • Ongoing consultation with stakeholders will identify and address concerns if they arise. • Implement all measures specified in management plans identified in the EIS and/or consent conditions (if approved).	D	4	5	As above
Extractive industry	• *Public authorities* • *Business operators*	Competing industries – extractive materials	The construction of the BESS on land which may contain viable extractive material, may cause conflict with surrounding business operators (e.g. MCC) who may be interested in expanding their operations onto the site in the future.	C	3	13	• A review of documentation for surrounding extractive activities has not identified any intent for surrounding industries to expand operations onto the site. • Existing consultation and engagement for the project has not identified any intent for surrounding business operators to expand operations onto the site. • Ongoing consultation with stakeholders will identify and address concerns if they arise. • Implement all measures specified in management plans identified in the EIS and/or consent conditions (if approved).	D	3	9	As above
		Access and traffic - interaction	Use of surrounding roadways during construction of the BESS may cause conflict by interacting with extractive industry transport activities.	C	4	8	• Consideration of potential traffic impacts has been undertaken via a Traffic Impact Assessment (TIA). Appropriate mitigation measures are specified within the TIA to minimise impacts to the traffic environment. • Compliance with mitigation measures specified within the TIA is anticipated to reduce the risk of conflict related to traffic for agricultural land users. • Ongoing consultation with stakeholders will identify and address concerns if they arise. • Implement all measures specified in management plans identified in the EIS and/or consent conditions (if approved)	D	4	5	As above
		Nuisance – dust/blasting	Dispersion of dust resulting from extractive activities on surrounding land, including blasting at	C	4	8	• Consideration of potential dust impacts has been undertaken as part of the EIS. Appropriate mitigation measures are specified within the EIS	D	5	2	As above

Land use	Stakeholders	Category	Potential Land Use Conflict	Initial risk ranking			Risk reduction management strategy	Revised risk ranking			Performance target and monitoring
				P*	C*	R*		P*	C*	R*	
			Muswellbrook Coal Mine, may pose hazards to site infrastructure.				to minimise the risk of dust impacting the operation of the BESS. • Compliance with mitigation measures specified within the EIS together within the ongoing maintenance of BESS and site infrastructure, is anticipated to reduce the risk of conflict related to air quality impacts • Ongoing consultation with stakeholders will identify and address concerns if they arise. • Implement all measures specified in management plans identified in the EIS and/or consent conditions (if approved).				
		Nuisance – air quality	Excess dust generated by construction activities may cause conflict by impacting the environmental monitoring and operations of surrounding extractive industry land use.	C	3	13	• Consideration of potential dust impacts has been undertaken as part of the EIS. Appropriate mitigation measures are specified within the EIS to minimise the risk of dust generation during construction. • Compliance with mitigation measures specified within the EIS is anticipated to reduce the risk of conflict related to air quality impacts. • Ongoing consultation with stakeholders will identify and address concerns if they arise. • Implement all measures specified in management plans identified in the EIS and/or consent conditions (if approved).	D	3	9	As above
		Environmental concerns – cumulative impacts	Public Authorities may have concerns regarding the potential for cumulative impacts arising from the proximity of developments.	B	3	17	• Consideration of potential cumulative impacts has been undertaken as part of the EIS. Appropriate mitigation measures (where required) are specified in the EIS to minimise the potential for cumulative impacts to occur at or near the site. • Compliance with management measures specified within the EIS is anticipated to reduce the risk of conflict related to cumulative impact. • Ongoing consultation with stakeholders will identify and address concerns if they arise. • Implement all measures specified in management plans identified in the EIS and/or consent conditions (if approved).	D	3	9	As above
		Health and safety - blasting	Business operators wishing to expand operations may have concerns regarding the proximity of the BESS to extractive operations, including blasting	B	3	17	• A review of documentation for surrounding extractive activities has not identified any intent for surrounding industries to expand operations onto, or closer to, the site. • Ongoing consultation with stakeholders will identify and address concerns if they arise.	D	3	9	As above

Land use	Stakeholders	Category	Potential Land Use Conflict	Initial risk ranking			Risk reduction management strategy	Revised risk ranking			Performance target and monitoring
				P*	C*	R*		P*	C*	R*	
							• Implement all measures specified in management plans identified in the EIS and/or consent conditions (if approved).				
		Health and safety – contamination and subsidence	The placement of the BESS in proximity to extractive industry operations (including remediation activities and historical underground mining) may pose health and safety risks to workers associated with the BESS development.	B	2	21	• A review of mapping and mining operation documentation has identified that The site is within a mine subsidence district, and A history underground mining activities in the locality. • Consultation with Subsidence Advisory of NSW has occurred to address the potential for underground mining and subsidence to impact the BESS site (refer **Section 2.5**). The Subsidence Advisory NSW has indicated that no restrictions apply to the site. • A review of documentation for surrounding extractive activities has identified a history of asbestos contamination and remediation works at Muswellbrook Quarry, managed by MCC. The quarry site is located approximately 1.2 km north-east of the site and is therefore not anticipated to result in any adverse impacts to the development. • Compliance with management measures specified within the EIS is anticipated to reduce the risk of conflicts related to extractive industry and health and safety. • Ongoing consultation with stakeholders will identify and address concerns if they arise. • Implement all measures specified in management plans identified in the EIS and/or consent conditions (if approved).	D	3	9	As above
		Economic interests - insurance	The placement of the BESS in proximity to extractive industry may affect insurance premiums for business operators	B	3	17	• Consultation with The Insurance Council of Australia is to occur throughout the approval process. The results of this consultation will be shared with other relevant stakeholders, including surrounding landowners and business operators. • Ongoing consultation with stakeholders will identify and address concerns if they arise. • Implement all measures specified in management plans identified in the EIS and/or consent conditions (if approved).	C	3	13	As above
Infrastructure	Public Authorities • *Service Providers*	Risk to property - infrastructure	Stakeholders may have concerns that construction activities associated with the BESS may damage existing infrastructure (i.e.,	C	3	13	• A consideration of potential impacts to surrounding service provider infrastructure has been undertaken as part of the EIS. Appropriate mitigation measures are specified within the EIS	D	3	9	As above

Land use	Stakeholders	Category	Potential Land Use Conflict	Initial risk ranking			Risk reduction management strategy	Revised risk ranking			Performance target and monitoring
				P*	C*	R*		P*	C*	R*	
			any identified telecom connections, transmission lines, gas pipelines).				to minimise the risk of construction activities damaging existing infrastructure. • Compliance with construction management measures specified within the EIS is anticipated to reduce the risk of conflict related to damaging existing infrastructure. • Ongoing consultation with stakeholders will identify and address concerns if they arise. • Implement all measures specified in management plans identified in the EIS and/or consent conditions (if approved).				
		Access and traffic – access/services	Altered traffic conditions during construction may impact on access arrangements for surrounding private properties and service providers.	C	4	8	• Consideration of potential traffic impacts has been undertaken via a TIA. Appropriate mitigation measures are specified within the TIA to minimise impacts to the traffic environment. • Compliance with mitigation measures specified within the TIA is anticipated to reduce the risk of conflict related to the traffic environment. • Ongoing consultation with stakeholders will identify and address concerns if they arise. • Implement all measures specified in management plans identified in the EIS and/or consent conditions (if approved).	D	4	5	As above
		Competing industries – future project expansion	The construction of the BESS may cause conflict with surrounding business operators and/or public authorities (e.g. MSC) who may be interested in expanding development onto the site in the future.	B	3	17	• A review of documentation for surrounding infrastructure development has identified an intent by MSC to construct the Muswellbrook New England Highway Bypass on land within the site and locality. • Consultation with MSC and TfNSW has occurred to address the potential for land use conflicts associated with the bypass. The results of this consultation will be shared with other relevant stakeholders, including public authorities • Consideration of potential traffic impacts has been undertaken via a Traffic Impact Assessment (TIA). Appropriate mitigation measures are specified within the TIA to minimise impacts to the traffic environment. • Compliance with mitigation measures specified within the TIA is anticipated to reduce the risk of conflict related to traffic for surrounding land users. • Ongoing consultation with stakeholders will identify and address land use conflict concerns as they arise	C	3	13	As above

Land use	Stakeholders	Category	Potential Land Use Conflict	Initial risk ranking			Risk reduction management strategy	Revised risk ranking			Performance target and monitoring
				P*	C*	R*		P*	C*	R*	
							• Implement all measures specified in management plans identified in the EIS and/or consent conditions (if approved).				
Residential	• *Private property owners* • *Individuals (i.e. occupants of residential dwellings)* • *Public authorities* • *Service providers*	Economic interest - demand	Public authorities may be concern about the increased demand for services and infrastructure that may result from the development, including increased accommodation for workers, availability of medical facilities and capacity of surrounding waste facilities.	C	4	8	• Consideration of impacts related to the increased demand for surrounding services and infrastructure has been undertaken as part of the EIS. Appropriate mitigation measures are specified within the EIS to minimise the risk for logistical issues associated with the increased demand for existing infrastructure and services. • Compliance with management measures specified within the EIS is anticipated to reduce the risk of conflict related to the availability of existing services and infrastructure. • Ongoing consultation with stakeholders will identify and address concerns if they arise. • Implement all measures specified in management plans identified in the EIS and/or consent conditions (if approved).	D	4	5	As above
		Access and traffic - commute	Use of surrounding roadways for the proposed BESS may affect the commute of residents in the locality.	C	4	8	• Consideration of potential traffic impacts has been undertaken via a Traffic Impact Assessment (TIA). Appropriate mitigation measures are specified within the TIA to minimise impacts to the traffic environment. • Compliance with mitigation measures specified within the TIA is anticipated to reduce the risk of conflict related to the traffic environment. • Ongoing consultation with stakeholders will identify and address concerns if they arise. • Implement all measures specified in management plans identified in the EIS and/or consent conditions (if approved).	D	4	5	As above
		Access and traffic -access/services	Altered traffic conditions during construction may impact on access arrangements for surrounding private properties and service providers.	C	4	8	• Consideration of potential traffic impacts has been undertaken via a TIA. Appropriate mitigation measures are specified within the TIA to minimise impacts to the traffic environment. • Compliance with mitigation measures specified within the TIA is anticipated to reduce the risk of conflict related to the traffic environment. • Ongoing consultation with stakeholders will identify and address concerns if they arise. • Implement all measures specified in management plans identified in the EIS and/or consent conditions (if approved).	D	4	5	As above

Land use	Stakeholders	Category	Potential Land Use Conflict	Initial risk ranking			Risk reduction management strategy	Revised risk ranking			Performance target and monitoring
				P*	C*	R*		P*	C*	R*	
		Nuisance - noise	Increased noise generated by construction activities and vehicle movements may be perceived as nuisance to surrounding residential properties.	B	3	17	• Consideration of potential noise and vibration impacts has been undertaken vas part of the EIS. Appropriate mitigation measures (where required) are specified within the EIS to minimise noise and vibration impacts. • Compliance with mitigation measures specified in the EIS is anticipated to reduce the risk of conflict related to noise and vibration impacts to residential land users. • Separation distances from (if applicable) will be included as a management strategy. • Ongoing consultation with stakeholders will identify and address concerns if they arise. • Implement all measures specified in management plans identified in the EIS and/or consent conditions (if approved).	D	3	9	As above
		Nuisance - waste	Waste generated by the development has the potential to enter surrounding residential land.	D	4	5	• Consideration of waste related impacts has been undertaken as part of the EIS. Appropriate mitigation measures are specified within the EIS to ensure that waste is appropriately stored and disposed of. • Compliance with waste management measures specified within the EIS is anticipated to reduce the risk of conflict related to waste entering surrounding residential land. • Ongoing consultation with stakeholders will identify and address concerns if they arise. • Implement all measures specified in management plans identified in the EIS and/or consent conditions (if approved).	E	4	3	As above
		Quality of life	The presence of the BESS may affect the quality of life of a resident if they are, or perceived to be, impacted by the BESS.	C	3	13	• Consideration of potential impacts to surrounding residents including noise and visual impacts, has been undertaken as part of the EIS. Appropriate mitigation measures are specified within the EIS to minimise the potential impact of the development on quality of life. • Compliance with visual and noise management measures specified within the VIA and EIS is anticipated to reduce the risk of conflicts related to impacts on quality of life. • Ongoing consultation with stakeholders will identify and address concerns if they arise. • Implement all measures specified in management plans identified in the EIS and/or consent conditions (if approved).	C	4	8	As above

Land use	Stakeholders	Category	Potential Land Use Conflict	Initial risk ranking			Risk reduction management strategy	Revised risk ranking			Performance target and monitoring
				P*	C*	R*		P*	C*	R*	
		Security	The change in land use may attract people to the area who may not otherwise visit the area. This may be perceived to adversely affect a resident's security.	C	3	13	• Compliance with the following crime management measures is anticipated to reduce the risk of conflict related to the increased risk of vandalism and theft for surrounding residents: a. Maintenance of the existing key access point to ensure the delineation between private and public is clear; b. Existing boundary fencing is to be maintained and/or installed to ensure site access is controlled; c. Appropriate signage should be installed; d. Landscaping is to be maintained to remove opportunities for concealment. • Ongoing consultation with stakeholders will identify and address concerns if they arise. • Implement all measures specified in management plans identified in the EIS and/or consent conditions (if approved).	C	4	8	As above
		Privacy	The change in land use may be perceived to affect the privacy of a residential land user.	C	3	13	• Consideration of potential privacy related impacts has been undertaken as part of the EIS. Appropriate mitigation measures are specified in the EIS to minimise the potential for privacy issues to occur at or near the site. • Compliance with privacy management measures specified within the EIS is anticipated to reduce the risk of conflicts related to privacy issues for surrounding residential land users. • Ongoing consultation with stakeholders will identify and address concerns if they arise. • Implement all measures specified in management plans identified in the EIS and/or consent conditions (if approved).	D	3	9	As above
		Health and safety – air quality	Dust generated by construction activities and by vehicle movements along access roads has the potential to impact air quality and may have adverse health implications for residential land users within the locality.	C	4	8	• Consideration of potential dust impacts has been undertaken as part of the EIS. Appropriate mitigation measures are specified within the EIS to minimise the risk for dust to spread throughout the site and onto neighbouring land. • Compliance with mitigation measures specified within the EIS is anticipated to reduce the risk of conflict related to air quality impacts. • Separation distances for dust originating from the development (if applicable) will be included as a management strategy. • Ongoing consultation with stakeholders will identify and address concerns if they arise.	D	4	5	As above

Land use	Stakeholders	Category	Potential Land Use Conflict	Initial risk ranking			Risk reduction management strategy	Revised risk ranking			Performance target and monitoring
				P*	C*	R*		P*	C*	R*	
							• Implement all measures specified in management plans identified in the EIS and/or consent conditions (if approved).				
		Nuisance – air quality	Excess dust generated by construction activities and by vehicle movements along access roads has the potential to impact the cleanliness of residential land within the locality.	C	4	8	• Consideration of potential dust impacts has been undertaken as part of the EIS. Appropriate mitigation measures are specified within the EIS to minimise the risk for dust to spread throughout the site and onto neighbouring land. • Compliance with mitigation measures specified within the EIS is anticipated to reduce the risk of conflict related to air quality impacts. • Separation distances for dust originating from the development (if applicable) will be included as a management strategy. • Ongoing consultation with stakeholders will identify and address concerns if they arise. • Implement all measures specified in management plans identified in the EIS and/or consent conditions (if approved).	D	4	5	As above
		Amenity - visual	The change in visual amenity resulting from the BESS, including the visibility of any cleared vegetation and earthworks, may conflict with the interests of stakeholders who wish to maintain existing views of the locality.	C	3	13	• Consideration of visual impacts to surrounding amenity has been undertaken via a VIA. Appropriate mitigation measures are specified within the VIA to minimise the risk of altered amenity for surrounding residents within the locality. • Compliance with mitigation measures specified within the VIA is anticipated to reduce the risk of conflict related to visual amenity. • Ongoing consultation with stakeholders will identify and address concerns if they arise. • Implement all measures specified in management plans identified in the EIS and/or consent conditions (if approved).	C	4	8	As above
		Land ownership - foreign	Stakeholders may have concerns regarding the ownership of the site i.e., whether it is a foreign-owned company.	C	4	8	• Engagement for the project has introduced the applicant (Firm Power) and the BESS project to surrounding stakeholders. Notification to stakeholders outlined the applicant's ownership and consultation has provided an opportunity for stakeholders to provide feedback. • Ongoing consultation with stakeholders will identify and address concerns if they arise. • Implement all measures specified in management plans identified in the EIS and/or consent conditions (if approved).	D	5	2	As above

Land use	Stakeholders	Category	Potential Land Use Conflict	Initial risk ranking			Risk reduction management strategy	Revised risk ranking			Performance target and monitoring
				P*	C*	R*		P*	C*	R*	
		Land ownership – public authorities	Public authorities may have concerns about the use of land they own or manage.	B	3	17	• Access to the site and the development footprint will transect portions of Crown Land. Consideration of impacts related to land ownership and tenure has been undertaken as part of the EIS. • Consultation with Local Land Services has occurred to address the potential for land use conflicts associated with crown land in the access arrangement. LLS have issued a Reserve Use Permit (P22/05) for use of the access driveway during construction. A permanent licence will be arranged with LLS for operational use. • Ongoing consultation with stakeholders will identify and address concerns if they arise. • Implement all measures specified in management plans identified in the EIS and/or consent conditions (if approved).	C	4	8	As above
		Competing industries - expansion	The construction of the BESS on land may cause conflict with surrounding business operators (e.g. Residential Land Developers) who may be interested in expanding development onto the site in the future.	C	3	13	• A review of documentation for surrounding residential development (including Northview Estate) has not identified any intent by business operators (e.g. residential developers) to expand development onto the site and the site is not identified via any strategic documents for future residential purposes. • Existing consultation and engagement for the project has not identified any intent for surrounding business operators to expand operations onto the site. • Ongoing consultation with stakeholders will identify and address concerns if they arise. • Implement all measures specified in management plans identified in the EIS and/or consent conditions (if approved).	D	3	9	As above
		Economic interest - insurance	The placement of the BESS in proximity to residential land may affect insurance premiums and land values for surrounding private property owners.	B	3	17	• Consultation with The Insurance Council of Australia is to occur throughout the approval process. The results of this consultation will be shared with other relevant stakeholders, including surrounding landowners and business operators. • Ongoing consultation with stakeholders will identify and address concerns if they arise. • Implement all measures specified in management plans identified in the EIS and/or consent conditions (if approved).	C	3	13	As above

Land use	Stakeholders	Category	Potential Land Use Conflict	Initial risk ranking			Risk reduction management strategy	Revised risk ranking			Performance target and monitoring
				P*	C*	R*		P*	C*	R*	
Resource protection	• *Public authorities* • *Associations* • *Individuals* • *Indigenous community*	Environmental concerns - heritage	Stakeholders may be concerned about impacts to heritage items or values at the site and locality.	C	3	13	• Consideration of impacts to heritage has been undertaken with the preparation of an Aboriginal Cultural and Historic Heritage Assessment Report (ACHHAR). Appropriate mitigation measures are specified within the ACHHAR to minimise impacts to heritage. • Compliance with mitigation measures specified within the ACHHAR is anticipated to reduce the risk of conflict related to environmental features, culturally sensitive land and heritage • Ongoing consultation with stakeholders will identify and address concerns if they arise. • Implement all measures specified in management plans identified in the EIS and/or consent conditions (if approved).	D	3	9	As above
		Environmental concerns - water	Stakeholders may be concerned about potential changes to water quality, quantity and surface water flows that may affect the site and locality.	C	3	13	• Consideration of impacts to surrounding water courses and water quality has been undertaken with the preparation of a Water Assessment (WA). Appropriate mitigation measures are specified within the WA to minimise impacts to watercourse health and quality. • Compliance with mitigation measures specified within the WA is anticipated to reduce the risk of conflict related to watercourse health and quality. • Ongoing consultation with stakeholders will identify and address concerns if they arise. • Implement all measures specified in management plans identified in the EIS and/or consent conditions (if approved).	D	3	9	As above
		Environmental concerns - biodiversity	Stakeholders may be concerned about potential impacts to biodiversity within the site and locality	C	3	13	• Consideration of impacts to biodiversity has been undertaken via a BDAR. Appropriate mitigation measures are specified within the BDAR to minimise risks to surrounding biodiversity. • Compliance with mitigation measures specified with the BDAR is anticipated to reduce the risk of conflict related to biodiversity. • Ongoing consultation with stakeholders will identify and address concerns if they arise. • Implement all measures specified in management plans identified in the EIS and/or consent conditions (if approved).	D	3	9	As above
Waste Management	• *Public authorities*	Competing industries - expansion	The construction of the BESS may cause conflict with surrounding public authorities (e.g. MSC) who	C	3	13	• A review of documentation for surrounding waste management activities has not identified	D	3	9	As above

Land use	Stakeholders	Category	Potential Land Use Conflict	Initial risk ranking			Risk reduction management strategy	Revised risk ranking			Performance target and monitoring
				P*	C*	R*		P*	C*	R*	
	• *Business operators*		may be interested in expanding their operations onto the site in the future.				any intent for surrounding industries to expand operations onto the site. • Existing consultation and engagement for the project has not identified any intent for surrounding business operators to expand operations onto the site. • Ongoing consultation with stakeholders will identify and address concerns if they arise. • Implement all measures specified in management plans identified in the EIS and/or consent conditions (if approved).				
		Access and traffic - interaction	Use of surrounding roadways during construction of the BESS may cause conflict by interacting with waste management transport activities.	C	4	8	• Consideration of potential traffic impacts has been undertaken via a Traffic Impact Assessment (TIA). Appropriate mitigation measures are specified within the TIA to minimise impacts to the traffic environment. • Compliance with mitigation measures specified within the TIA is anticipated to reduce the risk of conflict related to traffic for agricultural land users. • Ongoing consultation with stakeholders will identify and address concerns if they arise. • Implement all measures specified in management plans identified in the EIS and/or consent conditions (if approved)	D	4	5	As above
		Nuisance – air quality	Dispersion of dust resulting from waste management activities on surrounding land may pose hazards to site infrastructure.	C	4	8	• Consideration of potential dust impacts has been undertaken as part of the EIS. Appropriate mitigation measures are specified within the EIS to minimise the risk of dust impacting the operation of the BESS. • Compliance with mitigation measures specified within the EIS together within the ongoing maintenance of BESS and site infrastructure, is anticipated to reduce the risk of conflict related to air quality impacts • Ongoing consultation with stakeholders will identify and address concerns if they arise. • Implement all measures specified in management plans identified in the EIS and/or consent conditions (if approved).	D	5	2	As above
		Nuisance - air quality	Excess dust generated by construction activities may cause conflict by impacting the environmental monitoring and operations of surrounding Waste Management land use.	C	3	13	• Consideration of potential dust impacts has been undertaken as part of the EIS. Appropriate mitigation measures are specified within the EIS to minimise the risk of dust impacting the operation of the BESS.	D	3	9	As above

Land use	Stakeholders	Category	Potential Land Use Conflict	Initial risk ranking			Risk reduction management strategy	Revised risk ranking			Performance target and monitoring
				P*	C*	R*		P*	C*	R*	
							• Compliance with mitigation measures specified within the EIS together within the ongoing maintenance of BESS and site infrastructure, is anticipated to reduce the risk of conflict related to air quality impacts. • Ongoing consultation with stakeholders will identify and address concerns if they arise. • Implement all measures specified in management plans identified in the EIS and/or consent conditions (if approved).				
		Environmental concerns – cumulative impacts	Public Authorities may have concerns regarding the potential for cumulative impacts arising from the proximity of developments.	B	3	17	• Consideration of potential cumulative impacts has been undertaken as part of the EIS. Appropriate mitigation measures (where required) are specified in the EIS to minimise the potential for cumulative impacts to occur at or near the site. • Compliance with management measures specified within the EIS is anticipated to reduce the risk of conflict related to cumulative impact. • Ongoing consultation with stakeholders will identify and address concerns if they arise. • Implement all measures specified in management plans identified in the EIS and/or consent conditions (if approved).	D	3	9	As above
		Health and safety - waste	Public authorities wishing to expand operations may have concerns regarding the proximity of the BESS to waste management operations.	C	3	13	• A review of documentation for surrounding waste management activities has not identified any intent for surrounding industries to expand operations onto, or closer to, the site. • Existing consultation and engagement for the project has not identified any intent for surrounding business operators to expand operations onto the site. • Ongoing consultation with stakeholders will identify and address concerns if they arise. • Implement all measures specified in management plans identified in the EIS and/or consent conditions (if approved).	D	3	9	As above
		Economic interests - insurance	The placement of the BESS in proximity to waste management operations may affect insurance premiums for public authorities managing waste facilities.	B	3	17	• Consultation with The Insurance Council of Australia is to occur throughout the approval process. The results of this consultation will be shared with other relevant stakeholders, including surrounding landowners and business operators. • Ongoing consultation with stakeholders will identify and address concerns if they arise.	C	3	13	As above

Land use	Stakeholders	Category	Potential Land Use Conflict	Initial risk ranking			Risk reduction management strategy	Revised risk ranking			Performance target and monitoring
				P*	C*	R*		P*	C*	R*	
							• Implement all measures specified in management plans identified in the EIS and/or consent conditions (if approved).				
Water storage	• *Public authorities* • *Private property owners* • *Indigenous Community*	Health and safety - water	Stakeholders may be concerned about activities, associated with the BESS that may result in the sedimentation and contamination of surrounding watercourses.	C	3	13	• Consideration of impacts to surrounding water courses and water quality has been undertaken via a WA and as part of the EIS. Appropriate mitigation measures are specified within the WA to minimise impacts associated with the sedimentation and contamination of surrounding water courses. • Compliance with mitigation measures specified within the WA and EIS is anticipated to reduce the risk of conflict related to the sedimentation and contamination of surrounding watercourses. • Ongoing consultation with stakeholders will identify and address concerns if they arise. • Implement all measures specified in management plans identified in the EIS and/or consent conditions (if approved).	D	3	9	As above

*The table has used abbreviations for formatting purposes, P=Probability, C=Consequence and R=Risk.

APPENDIX B

AHIMS BASIC SEARCH, BUFFER 1KM

AHIMS Web Services (AWS)
Search Result

Your Ref/PO Number : 221312_1km buffer 2

Client Service ID : 686892

Premise Australia Pty Ltd

Date: 31 May 2022

154 Peisley Street
Orange New South Wales 2800

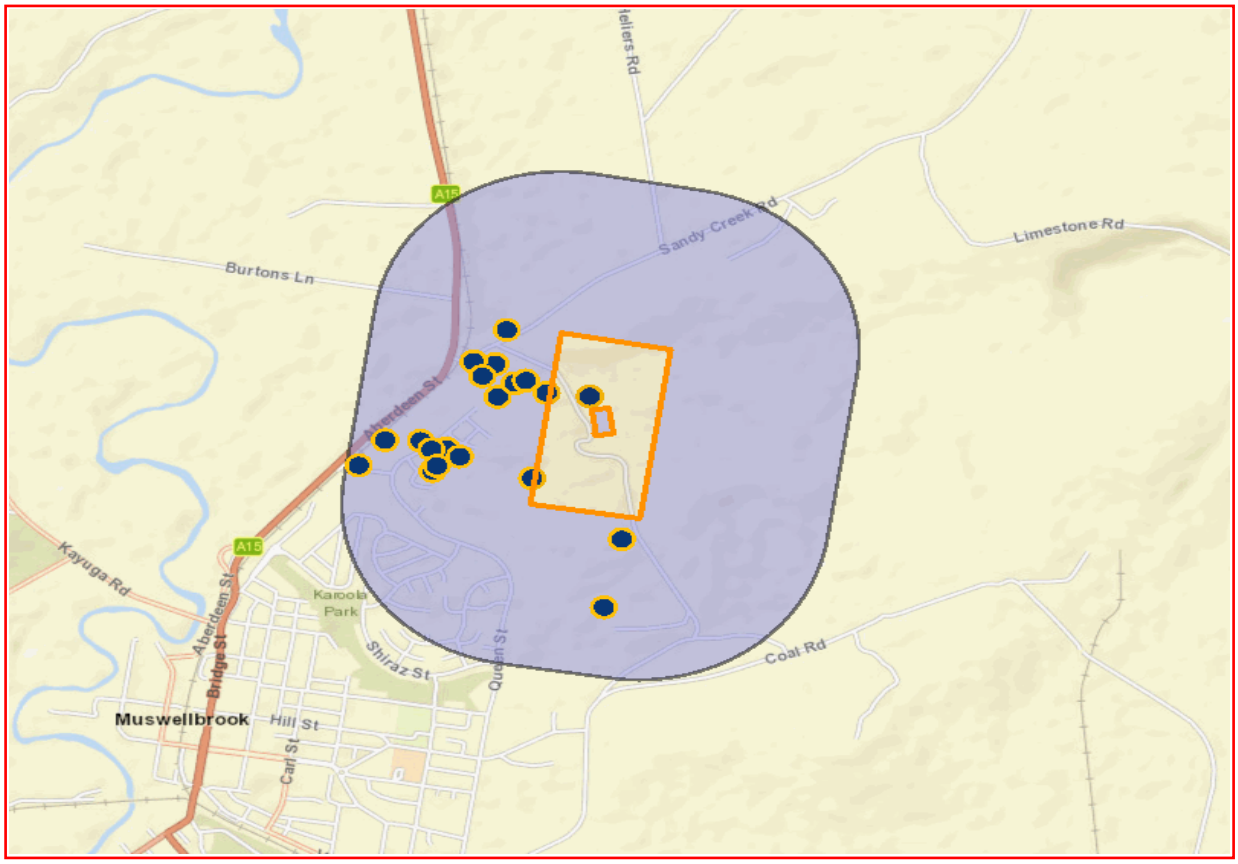
Attention: Hugh Shackcloth-Bertinetti

Email: hugh.bertinetti@premise.com.au

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lot : 12, DP:DP839233, Section : - with a Buffer of 1000 meters, conducted by Hugh Shackcloth-Bertinetti on 31 May 2022.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.



A search of Heritage NSW AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

20	Aboriginal sites are recorded in or near the above location.
0	Aboriginal places have been declared in or near the above location. *

If your search shows Aboriginal sites or places what should you do?

- You must do an extensive search if AHIMS has shown that there are Aboriginal sites or places recorded in the search area.
- If you are checking AHIMS as a part of your due diligence, refer to the next steps of the Due Diligence Code of practice.
- You can get further information about Aboriginal places by looking at the gazettal notice that declared it. Aboriginal places gazetted after 2001 are available on the NSW Government Gazette (https://www.legislation.nsw.gov.au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Heritage NSW upon request

Important information about your AHIMS search

- The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not be made available to the public.
- AHIMS records information about Aboriginal sites that have been provided to Heritage NSW and Aboriginal places that have been declared by the Minister;
- Information recorded on AHIMS may vary in its accuracy and may not be up to date. Location details are recorded as grid references and it is important to note that there may be errors or omissions in these recordings,
- Some parts of New South Wales have not been investigated in detail and there may be fewer records of Aboriginal sites in those areas. These areas may contain Aboriginal sites which are not recorded on AHIMS.
- Aboriginal objects are protected under the National Parks and Wildlife Act 1974 even if they are not recorded as a site on AHIMS.
- This search can form part of your due diligence and remains valid for 12 months.

Level 6, 10 Valentine Ave, Parramatta 2150
Locked Bag 5020 Parramatta NSW 2124
Tel: (02) 9585 6345

ABN 34 945 244 274
Email: ahims@environment.nsw.gov.au
Web: www.heritage.nsw.gov.au

AHIMS Web Services (AWS)
Search Result

Your Ref/PO Number : 221312_1km (access)

Client Service ID : 686874

Premise Australia Pty Ltd

154 Peisley Street
Orange New South Wales 2800

Attention: Hugh Shackcloth-Bertinetti

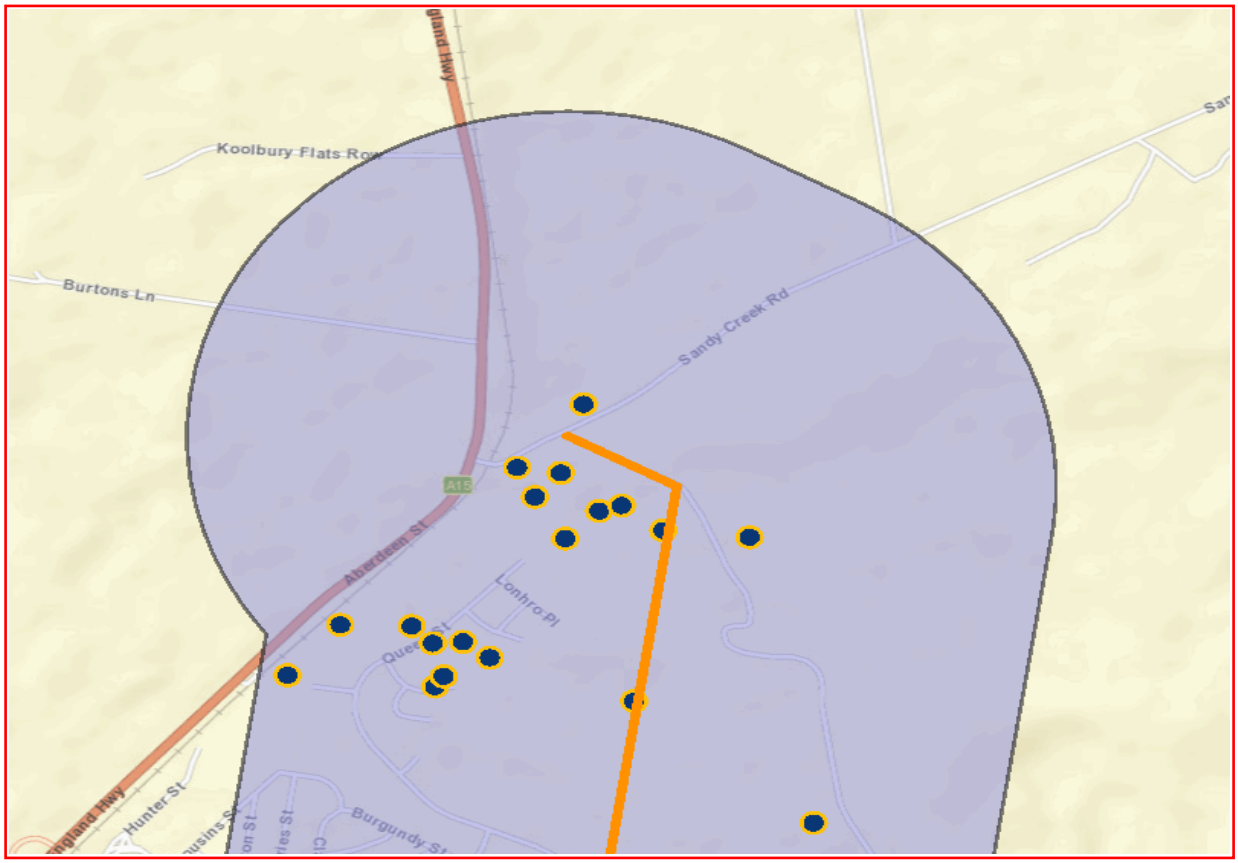
Email: hugh.bertinetti@premise.com.au

Date: 31 May 2022

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lot : 15, DP:DP905479, Section : - with a Buffer of 1000 meters, conducted by Hugh Shackcloth-Bertinetti on 31 May 2022.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.



A search of Heritage NSW AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

20	Aboriginal sites are recorded in or near the above location.
0	Aboriginal places have been declared in or near the above location. *

If your search shows Aboriginal sites or places what should you do?

- You must do an extensive search if AHIMS has shown that there are Aboriginal sites or places recorded in the search area.
- If you are checking AHIMS as a part of your due diligence, refer to the next steps of the Due Diligence Code of practice.
- You can get further information about Aboriginal places by looking at the gazettal notice that declared it. Aboriginal places gazetted after 2001 are available on the NSW Government Gazette (https://www.legislation.nsw.gov.au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Heritage NSW upon request

Important information about your AHIMS search

- The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not be made available to the public.
- AHIMS records information about Aboriginal sites that have been provided to Heritage NSW and Aboriginal places that have been declared by the Minister;
- Information recorded on AHIMS may vary in its accuracy and may not be up to date. Location details are recorded as grid references and it is important to note that there may be errors or omissions in these recordings,
- Some parts of New South Wales have not been investigated in detail and there may be fewer records of Aboriginal sites in those areas. These areas may contain Aboriginal sites which are not recorded on AHIMS.
- Aboriginal objects are protected under the National Parks and Wildlife Act 1974 even if they are not recorded as a site on AHIMS.
- This search can form part of your due diligence and remains valid for 12 months.

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ABN 34 945 244 274
Email: ahims@environment.nsw.gov.au
Web: www.heritage.nsw.gov.au

APPENDIX C

AHIMS BASIC SEARCH, BUFFER 50M

AHIMS Web Services (AWS)
Search Result

Your Ref/PO Number : 221312_50m buffer

Client Service ID : 686904

Premise Australia Pty Ltd

154 Peisley Street
Orange New South Wales 2800

Attention: Hugh Shackcloth-Bertinetti

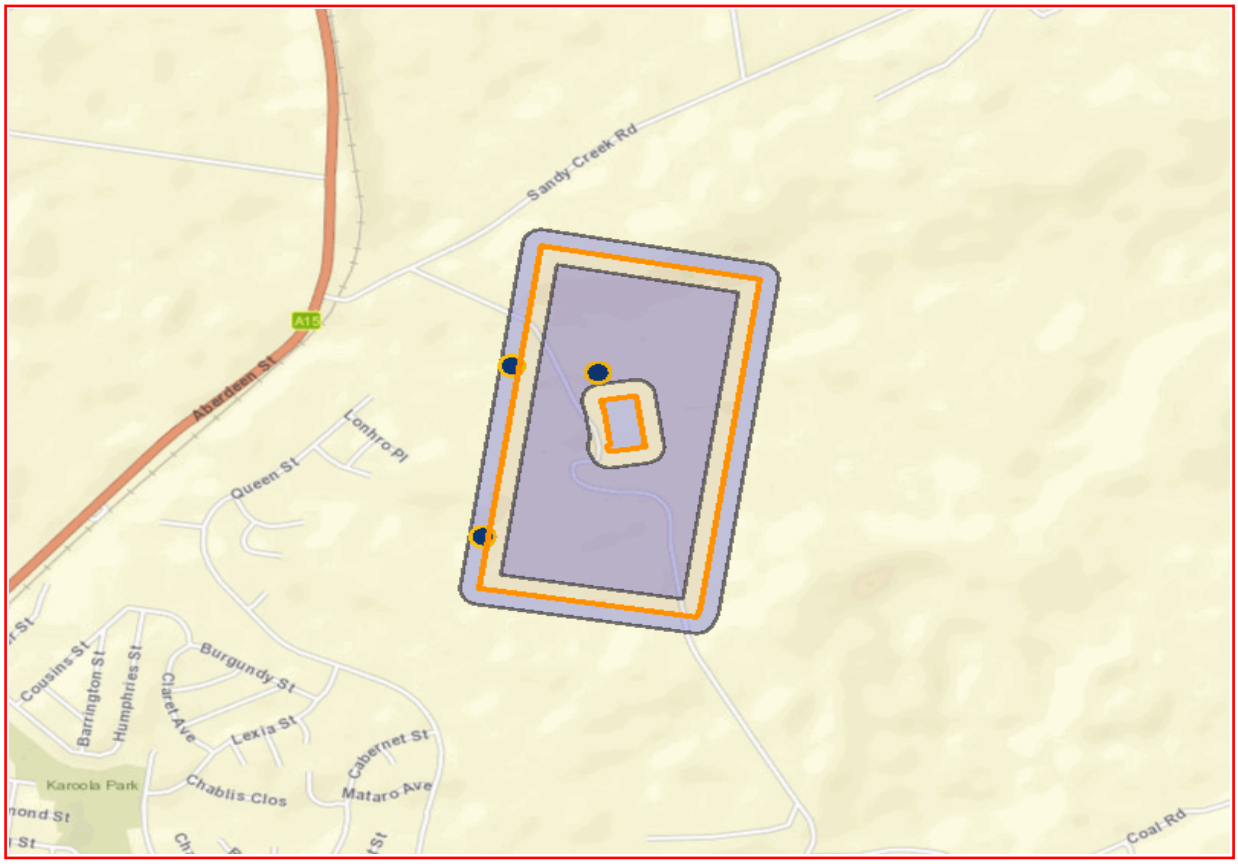
Email: hugh.bertinetti@premise.com.au

Date: 31 May 2022

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lot : 12, DP:DP839233, Section : - with a Buffer of 50 meters, conducted by Hugh Shackcloth-Bertinetti on 31 May 2022.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.



A search of Heritage NSW AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

3	**Aboriginal sites are recorded in or near the above location.**
0	**Aboriginal places have been declared in or near the above location. ***

If your search shows Aboriginal sites or places what should you do?

- You must do an extensive search if AHIMS has shown that there are Aboriginal sites or places recorded in the search area.
- If you are checking AHIMS as a part of your due diligence, refer to the next steps of the Due Diligence Code of practice.
- You can get further information about Aboriginal places by looking at the gazettal notice that declared it. Aboriginal places gazetted after 2001 are available on the NSW Government Gazette (https://www.legislation.nsw.gov.au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Heritage NSW upon request

Important information about your AHIMS search

- The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not be made available to the public.
- AHIMS records information about Aboriginal sites that have been provided to Heritage NSW and Aboriginal places that have been declared by the Minister;
- Information recorded on AHIMS may vary in its accuracy and may not be up to date. Location details are recorded as grid references and it is important to note that there may be errors or omissions in these recordings,
- Some parts of New South Wales have not been investigated in detail and there may be fewer records of Aboriginal sites in those areas. These areas may contain Aboriginal sites which are not recorded on AHIMS.
- Aboriginal objects are protected under the National Parks and Wildlife Act 1974 even if they are not recorded as a site on AHIMS.
- This search can form part of your due diligence and remains valid for 12 months.

Level 6, 10 Valentine Ave, Parramatta 2150
Locked Bag 5020 Parramatta NSW 2124
Tel: (02) 9585 6345

ABN 34 945 244 274
Email: ahims@environment.nsw.gov.au
Web: www.heritage.nsw.gov.au

AHIMS Web Services (AWS)
Search Result

Your Ref/PO Number : 221312_50m (access)

Client Service ID : 686905

Premise Australia Pty Ltd

154 Peisley Street
Orange New South Wales 2800

Attention: Hugh Shackcloth-Bertinetti

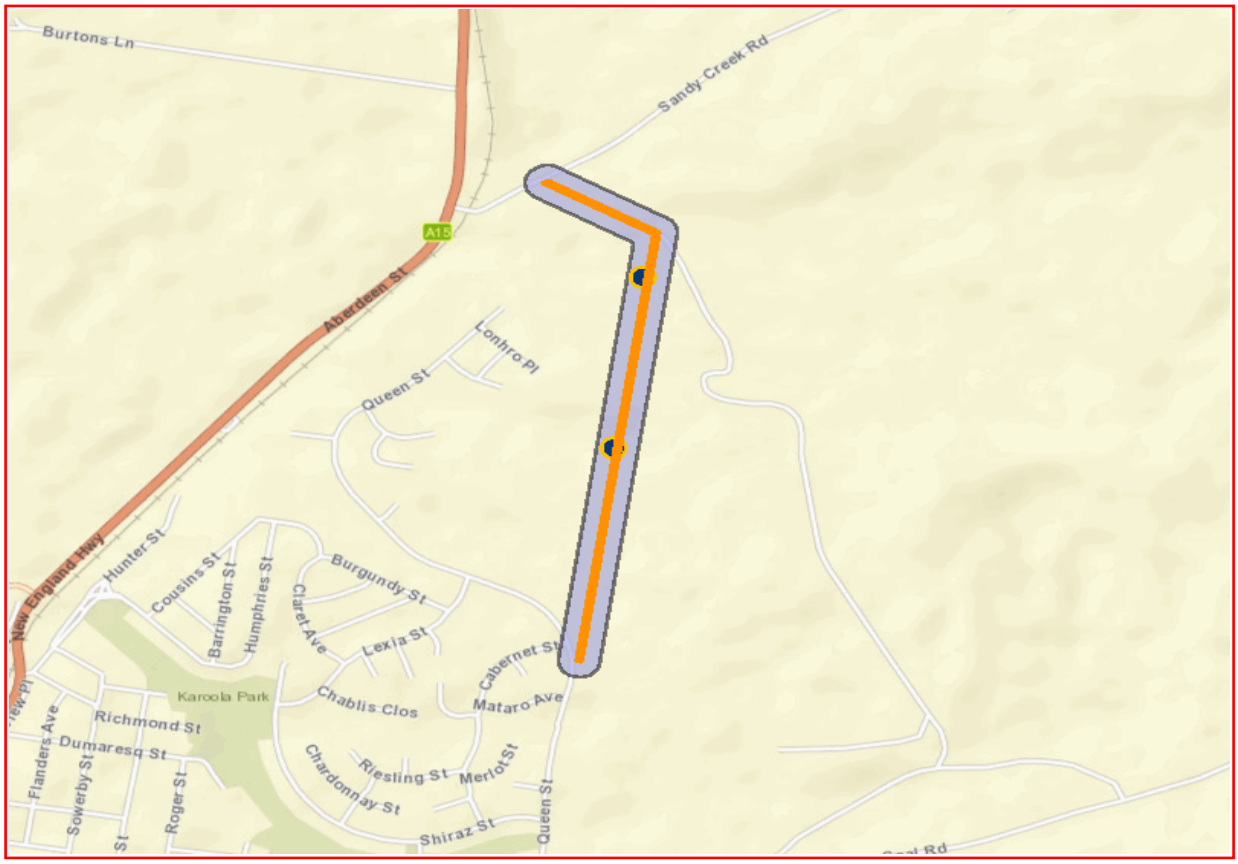
Email: hugh.bertinetti@premise.com.au

Date: 31 May 2022

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lot : 15, DP:DP905479, Section : - with a Buffer of 50 meters, conducted by Hugh Shackcloth-Bertinetti on 31 May 2022.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.



A search of Heritage NSW AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

2	**Aboriginal sites are recorded in or near the above location.**
0	**Aboriginal places have been declared in or near the above location. ***

If your search shows Aboriginal sites or places what should you do?

- You must do an extensive search if AHIMS has shown that there are Aboriginal sites or places recorded in the search area.
- If you are checking AHIMS as a part of your due diligence, refer to the next steps of the Due Diligence Code of practice.
- You can get further information about Aboriginal places by looking at the gazettal notice that declared it. Aboriginal places gazetted after 2001 are available on the NSW Government Gazette (https://www.legislation.nsw.gov.au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Heritage NSW upon request

Important information about your AHIMS search

- The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not be made available to the public.
- AHIMS records information about Aboriginal sites that have been provided to Heritage NSW and Aboriginal places that have been declared by the Minister;
- Information recorded on AHIMS may vary in its accuracy and may not be up to date. Location details are recorded as grid references and it is important to note that there may be errors or omissions in these recordings,
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ABN 34 945 244 274
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Web: www.heritage.nsw.gov.au

APPENDIX D

SITE INSPECTION PHOTOS

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APPENDIX E

CONSULTATION-ABORIGINAL LAND CLAIM (ALC) #42806

greg@firmpower.com.au

From: Mark Grace <mark.grace@crownland.nsw.gov.au>
Sent: Wednesday, 27 July 2022 3:34 PM
To: greg@firmpower.com.au; Lands CL ALC Mailbox
Cc: Trent Holloway; Shane Smith
Subject: LOC consent issue - ALC - Muswellbrook BESS Crown Reserve (TSR)

Hi Greg,

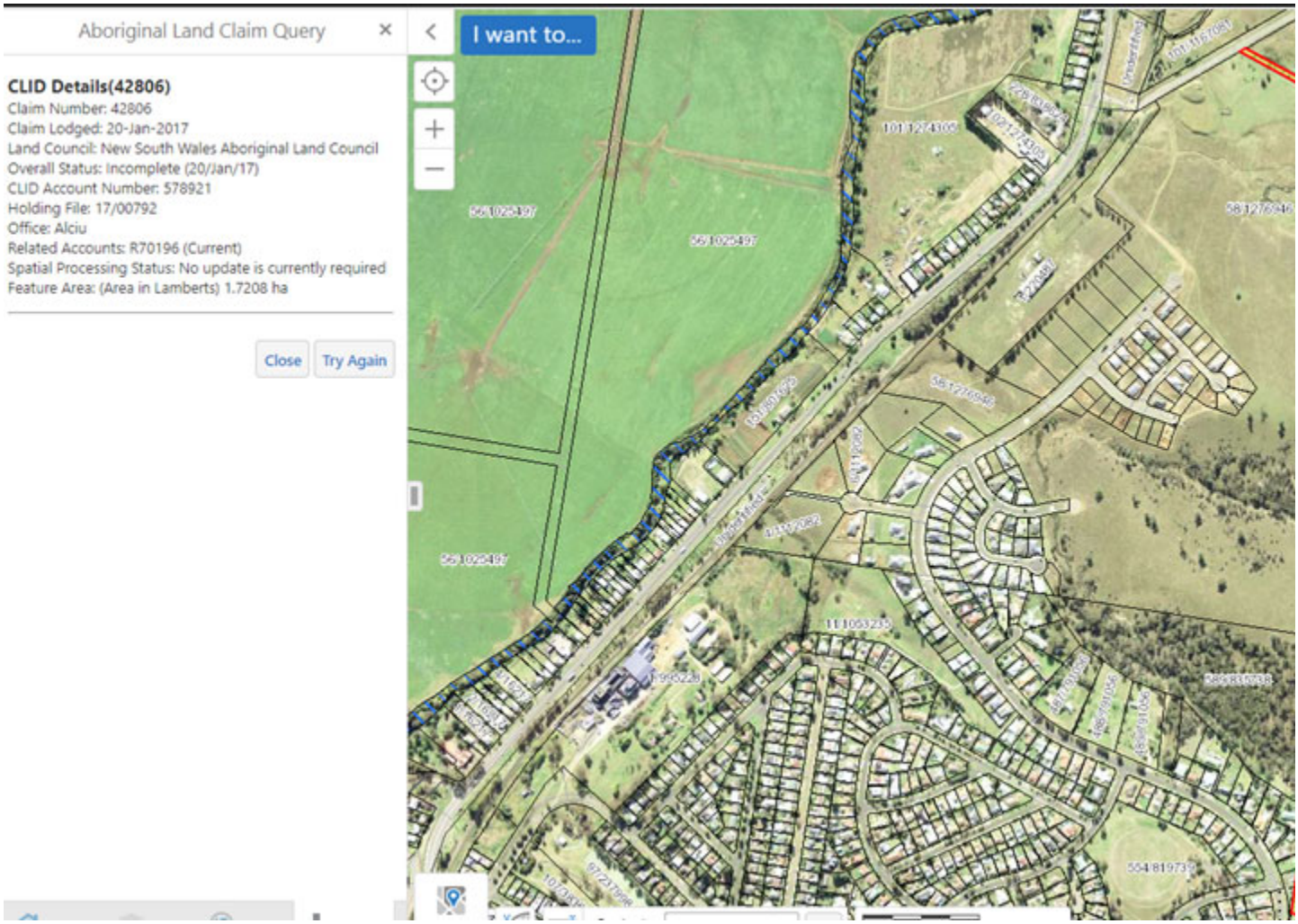
Thanks for sending the details through for consideration.

I've included our Aboriginal Land Strategy team in on this email.

ALS team can you please advise what our options are with regard to providing landowners consent, noting:

- The proposal is a State Significant Development (SSD 29704663)
- The proponent has sought Landowners Consent from the Dept to lodge the SSD
- The Proponent's intended timeframe for submitting the development application is 29th July
- The TSR is subject to undetermined Aboriginal Land Claim 42806
- The proposed use of the is access only, no construction or occupation is involved
- Wanaruah LALC have been consulted but no comment has been received by the Department
- The TSR is currently used by Energy Australia for access to their substation – being the same site as the subject proposal
- The LLS have been consulted and have provided no objection to the proposal

ALC 42806 is shown below and the development file ref is 21/04539#38.



Please give me a call if you have any questions.

Thanks and regards,

Mark

Mark Grace
Natural Resource Management Project Officer
Crown Lands
Department of Planning and Environment

T 02 4937 9331 **M** 0474 803 462 **E** mark.grace@crownland.nsw.gov.au

dpie.nsw.gov.au

516 High Street Maitland NSW 2320
PO Box 2215 Dangar NSW 2309

I acknowledge the traditional custodians of the land and pay respects to Elders past and present. I also acknowledge all the Aboriginal and Torres Strait Islander staff working with NSW Government at this time.

Please consider the environment before printing this email.

From: greg@firmpower.com.au <greg@firmpower.com.au>
Sent: Wednesday, 27 July 2022 3:05 PM
To: Mark Grace <mark.grace@crownland.nsw.gov.au>
Cc: Trent Holloway <trent.holloway@crownland.nsw.gov.au>
Subject: RE: Draft LOC review for Muswellbrook BESS Crown Reserve (TSR)
Importance: High

Hi Mark,

Thanks for your time.
As discussed over the phone, NSWLALC doesn't have an active claim, however Wanaruah Local Aboriginal Land Council has responded recently to confirm they have an active claim (ALC 42806) – please see attached.
We are in the process of engaging around a commercial agreement for them to provide us no objection to the landholder's consent and to register a right of way. We don't have any further correspondence to share, they have a new CEO assigned.

It is our intention to submit the Development Approval for assessment this Friday 29th July and are concerned with potential timelines.
I will reiterate that our DA proposes to use the TSR only for low impact activities, being site access (a few hundred meters) and that it is currently used by Ausgrid to access their existing Muswellbrook substation and has been for at least 10 years.

Your assistance is possible ways forward is appreciate

Many thanks,
Kvik$Xmwglpmev
Ilup Srz huSw| Owg
Q >$/:5$4-$899$585$7:9
I>$kvikD jmg ts{ iv2gsq 2ey

From: greg@firmpower.com.au <greg@firmpower.com.au>
Sent: Thursday, 7 July 2022 11:03 AM
To: 'Mark Grace' <mark.grace@crownland.nsw.gov.au>
Cc: 'Trent Holloway' <trent.holloway@crownland.nsw.gov.au>
Subject: RE: Draft LOC review for Muswellbrook BESS Crown Reserve (TSR)

Morning Mark,

It appears NSWALC has no interest in ALC42806. I have requested a formal search with ALC and can provide results to confirm no active or inchoate interest exists when it comes in (8 bds)
Interested whether you have any take on the attached email from Robert. As mentioned we have put in place a Reserve Use Permit with the Hunter Local Land Services, but are interested in putting in place a more permanent legal right over this access route to the project. Are you able to advise what is an appropriate path to take? HLLS was unable to give guidance.

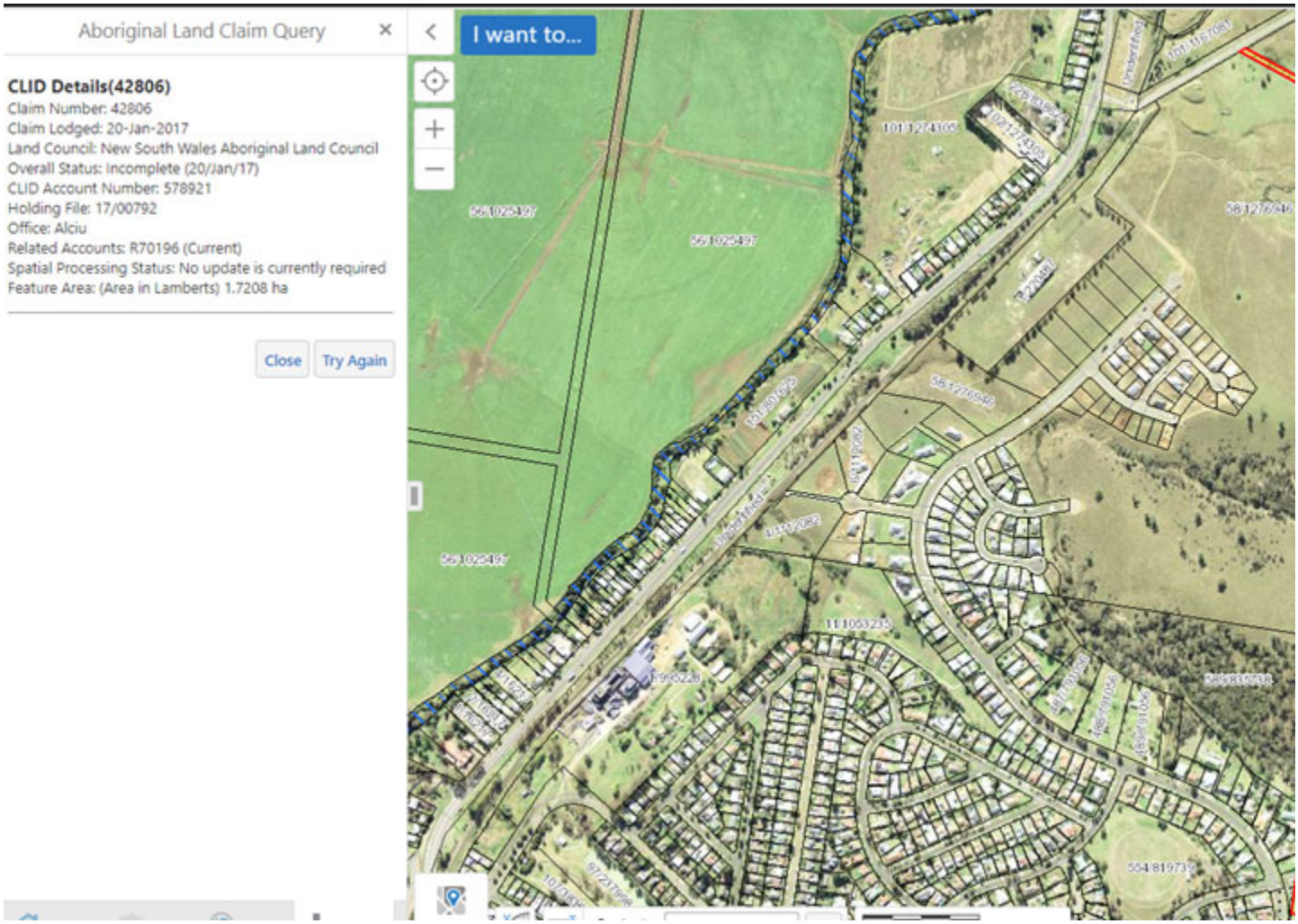
Lastly, in the interest of time – am I able to submit the landowner's consent application with the attached advice to maitland.crownlands@crownland.nsw.gov.au to get started. We are hoping to submit the development application on the 18th and I'm concerned about turn-around times.

Regards,
Kvik$Xmwglpmev
Ilup Srz huSw| Owg
Q $/:5$4-$899$685$7:9
I$kvikD jmq ts{ iv2gsq 2ey

From: Mark Grace <mark.grace@crownland.nsw.gov.au>
Sent: Tuesday, 5 July 2022 9:30 AM
To: greg@firmpower.com.au
Cc: Trent Holloway <trent.holloway@crownland.nsw.gov.au>
Subject: RE: Draft LOC review for Muswellbrook BESS Crown Reserve (TSR)

Hi Greg

Our spatial system shows ALC 42806 was lodged by the NSW LALC on 20 Jan 2017 as shown below:



I've done some more searching and found that it was lodged on behalf of Wanaruah LALC. Unfortunately I cannot locate the actual application and plan.

I'd suggest you contact Wanaruah LALC and see if they have a record of it. If not please contact me and I will make enquiries with our ALC team.

Cheers

Mark

Mark Grace
Natural Resource Management Project Officer
Crown Lands
Department of Planning and Environment

T 02 4937 9331 **M** 0474 803 462 **E** mark.grace@crownland.nsw.gov.au

dpie.nsw.gov.au

516 High Street Maitland NSW 2320
PO Box 2215 Dangar NSW 2309

I acknowledge the traditional custodians of the land and pay respects to Elders past and present. I also acknowledge all the Aboriginal and Torres Strait Islander staff working with NSW Government at this time.

Please consider the environment before printing this email.

From: greg@firmpower.com.au <greg@firmpower.com.au>
Sent: Tuesday, 5 July 2022 8:53 AM
To: Mark Grace <mark.grace@crownland.nsw.gov.au>
Cc: Trent Holloway <trent.holloway@crownland.nsw.gov.au>
Subject: RE: Draft LOC review for Muswellbrook BESS Crown Reserve (TSR)

Hi Mark,

Many thanks for the response.
I just want to confirm we have the correct Aboriginal Land Claim number, as NSWALC has no interest in #42806. Would you happen to have a copy of the search results? Otherwise we will re-run on our end.

Regards,
Kvik$Xmwglpev
Ilup Srz huSw| Owg
Q $/:5$4-$899$585$7:9
I$kvikD jmq ts{ iv2gsq 2ey

From: Mark Grace <mark.grace@crownland.nsw.gov.au>
Sent: Friday, 1 July 2022 3:10 PM
To: greg@firmpower.com.au
Cc: Trent Holloway <trent.holloway@crownland.nsw.gov.au>
Subject: Draft LOC review for Muswellbrook BESS Crown Reserve (TSR)

Hi Greg

Thanks for sending the draft landowners consent application through for review.

I've referred it on to our assessing team for their comment. They've advised that as there is an undetermined Aboriginal land claim over the reserve (# 42806) you should consult with applicant, being the NSW Aboriginal Land Council. See their contact details here: https://alc.org.au/contact-us/

You can email the landowners consent application and any supporting documents to our generic mailbox at maitland.crownlands@crownland.nsw.gov.au

I hope this assists you in this matter.

Regards

Mark

Mark Grace
Natural Resource Management Project Officer
Crown Lands
Department of Planning and Environment

T 02 4937 9331 **M** 0474 803 462 **E** mark.grace@crownland.nsw.gov.au

dpie.nsw.gov.au

516 High Street Maitland NSW 2320
PO Box 2215 Dangar NSW 2309

From: greg@firmpower.com.au <greg@firmpower.com.au>
Sent: Wednesday, 29 June 2022 10:42 AM
To: Mark Grace <mark.grace@crownland.nsw.gov.au>
Subject: RE: Muswellbrook BESS Crown Reserve

Morning Mark,

Firm Power has finalised consultation with Hunter Local Land Services in relation to Travelling Stock Reserve 70196 and is hoping to process the Landowner's Consent Application.

I am hoping you are able to provide a quick review of the proposed application, as it seems we are unable to submit electronically but rather post only?

Just confirming again that the project construction doesn't extend over the TSR, only a partial section is used for access. As such we believe this application and attachments should provide sufficient information – but would be appreciated if you could confirm

Regards,
Kvik$Xmwglpev
Ilup Srz huSw| Owg
Q $/:5$4-$899$85$7:9
I$kvikD jwq ts{ iv2qsq 2ey

From: Mark Grace <mark.grace@crownland.nsw.gov.au>
Sent: Wednesday, 11 May 2022 3:05 PM
To: greg@firmpower.com.au
Subject: RE: Muswellbrook BESS Crown Reserve

Hi Greg

Thanks for the update on the Muswellbrook BESS and access via the TSR.

Just include on the application for Landowners consent a summary of use of the TSR. E.g. vehicular access using an existing track-in-use, no construction or maintenance works or infrastructure are proposed. Also include detail the outcome of any consultation with the Hunter LSS, e.g. when and who did you consult with, were they supportive, do you require any permit from them, etc.

Please contact me if you have any questions.

Regards

Mark

Mark Grace
Natural Resource Management Project Officer
Crown Lands
Department of Planning and Environment

T 02 4937 9331 **E** mark.grace@crownland.nsw.gov.au

dpie.nsw.gov.au

516 High Street Maitland NSW 2320
PO Box 2215 Dangar NSW 2309

From: greg@firmpower.com.au <greg@firmpower.com.au>
Sent: Thursday, 5 May 2022 9:43 AM
To: Mark Grace <mark.grace@crownland.nsw.gov.au>
Cc: 'Simon Ingram' <simon@firmpower.com.au>; nick@firmpower.com.au
Subject: Muswellbrook BESS Crown Reserve

Good morning Mark,

I'm writing regarding the Muswellbrook Battery Energy System (Ref: 21/04539#38) regarding the Travelling Stock Reserve (TSR) 70196 (Lot 15 DP905479).
I've recently come on board with Firm Power and have picked this topic up from Simon and Elle.

We have engaged with Ausgrid who have noted they cannot find a land interest that allows them to cross over the TSR to access their substation. As such we will engage with the Hunter LLS prior to submitting a Landowner's Consent Application to the Department, in particular regarding the undetermined Aboriginal Land Claim on Lot 15 DP 905479.

In parallel, are you able to let me know if you require anything further for your assessment as the affected landowner? I believe it has been communicated that Firm Power are not proposing to build any infrastructure on the TSR as part of the development, only proposing to cross the TSR to access the site for construction and operation of the Battery Energy Storage System.

Best regards

Premise