



Premise

FIRM POWER

Scoping Report

MUSWELLBROOK BATTERY ENERGY STORAGE SYSTEM

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1. INTRODUCTION

1.1 Overview

Firm Power (the Applicant) is proposing to develop an approximately 150-Megawatt AC (MW_{AC}) Battery Energy Storage System (BESS) on land adjacent to the Ausgrid Muswellbrook substation. The proposal is located in the Muswellbrook Shire Council (MSC) Local Government Area (LGA), within the Hunter region of NSW, approximately 2.5 km north-east of the town of Muswellbrook (refer to **Figure 1**). The project is to be known as the Muswellbrook BESS.

The subject site is known as 20-24 Sandy Creek Road, Muswellbrook (Lots 11 and 12 DP839233, hereafter referred to as 'the site'). The site has an area of approximately 62.76 hectares and the proposed project has a development area of approximately 4 hectares.

This scoping report has been prepared by Premise to support a request to Department Planning, Industry and Environment (DPIE) for the Secretary's Environmental Assessment Requirements (SEARs). The Muswellbrook BESS includes:

- Installation of containerised lithium-ion batteries with a capacity of up to 150 MW and 600 MW-hours, with associated power conversion systems, switchgear and a control building;
- An underground or overhead 33kV or 132 kV sub-transmission line to connect the BESS to the Muswellbrook substation;
- Cabling and collector units, storage area, internal access tracks, on-site parking, security fencing, lighting and temporary construction laydown area; and
- Utilisation of existing site access arrangements from Sandy Creek Road.

The proposed BESS, associated infrastructure and development footprint will align with, and be contained within, the development area shown in **Figure 6**. The layout of the BESS and associated infrastructure will be detailed in the Environmental Impact Statement (EIS) for the project.

The site is currently used for the purpose of hosting the existing Ausgrid Muswellbrook substation, which is located centrally within the site. Existing 132 kV and 33 kV powerlines traverse the site, extending from with eastern and western sides of the substation and following an east-west and north-south alignment (refer **Figure 6**).

The proposed development area would either be leased from Ausgrid via a lease of premises or would be subdivided from the host lot to provide for a long-term lease of land. If required, the subdivision would form part of this development application.

It is expected that augmentation work within the substation would be required to facilitate connection of the BESS. If required, these works will be considered and addressed in the EIS.

The project is State Significant Development (SSD) under the *State Environmental Planning Policy (State and Regional Development) 2011* and the applicable consent authority for the proposal is the NSW Minister for Planning or the Minister's delegate.

The SEARs will inform the preparation of an Environmental Impact Statement (EIS) in support of a State Significant Development (SSD) application submitted under Part 4 of the *Environmental Planning and Assessment Act 1979* (the Act).

1.2 Applicant

Firm Power is an Australian owned grid flexibility company dedicated to delivering solutions that provide stability to a clean energy driven power system.

Firm Power's address is Suite 203, 213 Miller St, North Sydney NSW 2060 and ABN is 18 631 500 519.

Firm Power is committed to using advanced technology to ensure energy supply and demand can be dynamically balanced, creating a more flexible electricity grid and allowing for continued renewable energy integration and power price reduction.

As expert project developers, Firm Power collaborates with project investors and vigorously screens technology, integration, and delivery partners to ensure that the solutions provided are of the highest quality.

Firm Power has recently received approval from the Western Sydney Regional Planning Panel for the Western Sydney Smart Battery, a 20MW battery to be located adjacent to the Penrith Zone Substation.

1.3 Planning Framework

The proposed BESS is defined as electricity generating works under the *Muswellbrook Local Environmental Plan* (MLEP) 2013, being:

a building or place used for the purpose of—

- (a) making or generating electricity, or*
- (b) electricity storage.*

Pursuant to the MLEP, the site is zoned SP2 – Infrastructure (classified road) and E3 – Environmental Management – refer **Figure 4**. The project is located on land zoned SP2, with the exception of the proposed transmission line from the BESS to the Muswellbrook substation, which is located on the E3 zoned land.

The proposed development is SSD on the following grounds:

1. Section 4.36(2) of the *Environmental Planning and Assessment Act 1979* (the Act) provides that a State Environmental Planning Policy may declare any development, or any class or description of development, to be State significant development.
2. Section 4.38(3) of the Act provides that development consent for SSD may be granted despite the development being partly prohibited by an environmental planning instrument.

Comment: The positioning of the proposed transmission line connection between the BESS and the existing Ausgrid Muswellbrook substation would be located on E3 zoned land. Electricity transmission lines and electricity generating works are prohibited in these zones. As this is a relatively minor aspect of the project, this minor prohibition is unlikely to result in any significant impacts.

3. Section 8(1) of *State Environmental Planning Policy (State and Regional Development) 2011* (the State and Regional Development SEPP) provides that development is declared to be State significant for the purposes of the Act if:
 - a. the development on the land concerned is, by the operation of an environmental planning instrument, not permissible without development consent under Part 4 of the Act:*

Comment: The proposed development satisfies Section 8(1)(a) of the State and Regional Development SEPP on the grounds that it is permitted with consent under Section 34(1)(b) of *State Environmental Planning Policy (Infrastructure) 2007* (the Infrastructure SEPP).

b. The development is specified in Schedule 1 or 2 of the SEPP.

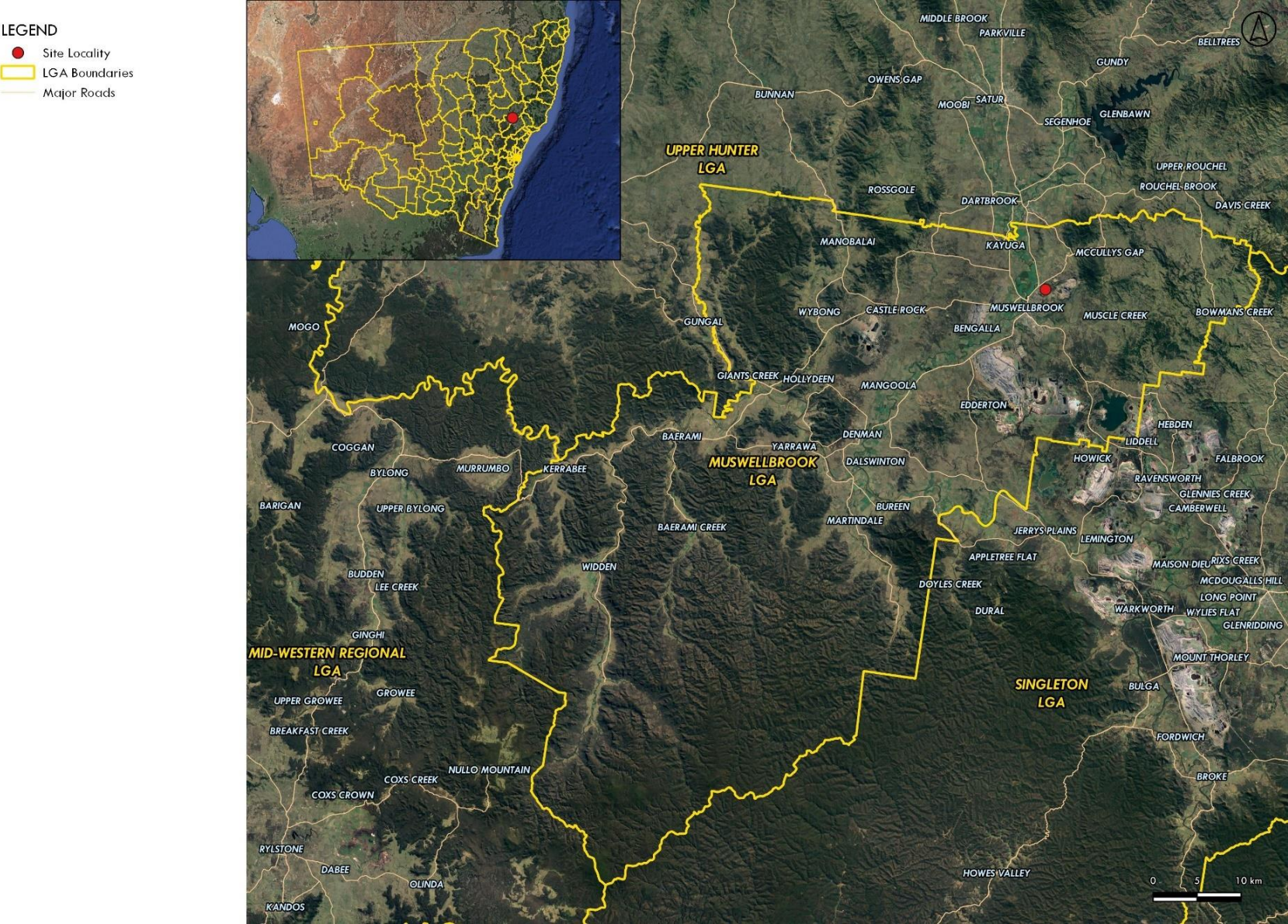
Comment: The proposed development satisfies Section 8(1)(b) of the State and Regional Development SEPP on the grounds that it is for the purposes of electricity generating works that has a capital investment value of more than \$30 million in accordance with Section 20 of Schedule 1 of the SEPP.

1.4 Report Structure

The report is structured as follows:

- **Section 1** provides an introduction to the development site, its location, the proposed development, and the planning framework.
- **Section 2** details the development's strategic and local context and provides an analysis of the site.
- **Section 3** provides a description of the proposed development and alternative options considered.
- **Section 4** provides an assessment of the preferred option against the planning framework.
- **Section 5** provides details of completed and proposed engagement.
- **Section 6** provides a summary of the assessment of project impacts.

Figure 1 – Regional context



2. STRATEGIC CONTEXT

2.1 Policy

2.1.1 NSW 2021 PLAN (NSW GOVERNMENT 2011) AND RENEWABLE ENERGY ACTION PLAN (NSW GOVERNMENT 2013)

The NSW 2021 plan, released in 2011, sets state-wide priorities for action and guides resource allocation. Goal 22 of this plan seeks to protect the natural environment and includes a specific target to increase renewable energy. The plan states:

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

- *Building the Moree solar power plant in partnership with the Commonwealth Government under the Solar Flagship Program*
- *Establishing a Joint Industry Government Taskforce to develop a Renewable Energy Action Plan for NSW to identify opportunities for investment in renewable energy sources.*

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

The proposed BESS sits comfortably within this state-led objective and is consistent with the goal and intent of the REAP. Large scale battery systems represent a fundamental component of the REAP, facilitating greater flexibility in electrical generation and stabilising the grid such that further deployment of renewables can be made possible.

Through assisting the expansion of renewable forms of electrical generation, the proposed BESS further supports the NSW Government's Climate Change Policy Framework (NSW, 2016). This framework is committed to effective action on climate change, outlining long term objectives to achieve net-zero emissions by 2050 and to make New South Wales more resilient to a changing climate. The achievement of net zero emissions by 2050 is reliant on transitions towards more sustainable and renewable forms electrical production.

The project supports this objective by improving the reliability and stability of the electrical grid. The ability of the proposed BESS system to balance electrical demand and supply assists the management of variations in electrical demand and supply which are expected to increase with transitions to more sustainable and renewable forms of electrical production. The proposed development is consequently consistent with the objective of the NSW Government's Climate Change Policy Framework (NSW, 2016), supporting transitions toward lower emissions and improving the resilience of NSW to a changing climate.

2.1.2 NSW ELECTRICITY STRATEGY (NSW GOVERNMENT 2019)

The NSW Electricity Strategy 2019 is a state-wide plan to ensure a reliable, affordable, and sustainable electricity future.

The purpose of the NSW Electricity Strategy is to:

Improve the efficiency and competitiveness of the NSW electricity market and encourage investment in new price reducing generation and energy saving technology.

The strategy is underpinned by four important principles including:

- *New market-driven electricity generation should drive down prices and help protect the environment. This is because firmed renewables are the cheapest form of new reliable generation and cheaper than the current wholesale price*
- *As electricity is an essential service, state and Commonwealth governments are ultimately responsible for reliable electricity*
- *Government action should limit costs to households, businesses, and taxpayers*
- *Government action should be consistent with the nature of the national electricity system and NSW policy objectives.*

In relevance to meeting the State's Energy Security Target the electricity strategy also states that: *NSW is projected to experience its tightest reserve conditions in 2023-2024 after the Liddell power station closes in April 2023.*

The proposed BESS project supports the objectives of NSW Electricity Strategy, improving the reliability and affordability of electricity through its ability to balance electrical supply and demand. Large-scale energy storage is a core component of the NSW Electricity Strategy due to its ability to enhance the dispatchability of renewable energy generation and provide firming capacity to the broader NSW market.

2.1.3 ENERGY SECURITY SAFEGUARD (NSW GOVERNMENT 2020)

The Energy Security Safeguard is part of the NSW Electricity Strategy and legislation to establish the Safeguard was passed by Parliament in May 2020 with an objective to improve the affordability, reliability, and sustainability of energy through the creation of financial incentives for energy activities.

Under the Electricity Supply Amendment (Peak Demand Reduction Scheme) Regulation 2021, the Government will establish a new Peak Demand Reduction Scheme (PDRS) to support activities that reduce demand at peak times, including flexible demand response.

Coupled with the Energy Saving Scheme (ESS), the PDRS is expected to deliver a net economic benefit for New South Wales of \$1.2 billion.

The proposed BESS project supports the objectives of the Energy Security Safeguard by providing capacity to reduce peak demand during summer periods and assists NSW in meeting its peak demand reduction targets, especially with the scheduled closure of Liddell Power Station in 2023.

2.1.4 NSW ELECTRICITY INFRASTRUCTURE ROADMAP (DPIE 2020)

The NSW Electricity Infrastructure Roadmap 2020 is a state-wide plan to transition the existing electricity sector to be cheaper, cleaner, and more reliable. Enabled by the Electricity Infrastructure Investment Act 2020 (NSW) the roadmap compliments the objectives of the NSW Electricity Strategy 2019 through planning a reliable affordable and sustainable electricity future. The roadmap builds on the NSW Transmission Infrastructure Strategy 2018 and supports the implementation of the Australian Energy Market Operators Integrated System Plan, setting out a plan to deliver five Renewable Energy Zones (REZ) in the Central-West Orana, New England,

South-West, Hunter-Central Coast, and Illawarra regions. Establishing REZ's will be vital for delivering affordable and reliable energy generation, helping to replace the states existing power stations as they reach the end of their operation and scheduled closure.

The roadmap identifies five foundational pillars:

- 1. Driving investment in regional NSW: supporting our regions as the State's economic and energy powerhouse.*
- 2. Delivering energy storage infrastructure: supporting stable, long-term energy storage in NSW.*
- 3. Delivering Renewable Energy Zones: coordinating regional transmission and renewable generation in the right places for local communities*
- 4. Keeping the grid secure and reliable: backing the system with gas, batteries or other reliable sources as needed.*
- 5. Harnessing opportunities for industry: empowering new and revitalised industries with cheap, reliable and low emissions electricity.*

The NSW government is still in the early stages of planning REZs in the Hunter Central Coast and Illawarra regions. These areas have some of the best natural energy resources, strong investor interest and are close to existing high voltage power lines.

The proposed BESS development is expected to support the implementation of Renewable Energy Zones in NSW and within the Hunter Central Coast region.

Through providing large-energy storage with the ability to balance electrical supply and demand, the development aligns with the objectives of the roadmap, enhancing the dispatchability of renewable energy generation in NSW and improving the affordability and reliability of the NSW market.

2.1.5 HUNTER REGIONAL PLAN 2036 (DPE 2016)

The *Hunter Regional Plan 2036* is the NSW Government's strategy for guiding land use planning decisions for the Hunter Region for the next 20 years. The plan has acknowledged the growing importance of Greater Newcastle and set the following core vision for the region as '*The leading regional economy in Australia with a vibrant new metropolitan city at its heart*', supported by four regionally focussed goals and associated directions. The following directions are relevant to the proposed development:

- *Goal 1 – The leading regional economy in Australia*
 - *Direction 12 – Diversify and grow the energy sector*
 - *Direction 13 - Plan for greater land use compatibility*
- *Goal 2 – A biodiversity rich natural environment*
 - *Direction 14 – Protect and connect natural areas*
 - *Direction 15 – Sustain water quality and security*
 - *Direction 16 – Increase resilience to hazards and climate change*
- *Goal 3 – Thriving communities*
 - *Direction 19 – Identify and protect the region's heritage*

- *Goal 4 – Greater housing choice and jobs*
 - *Direction 26 – Deliver infrastructure to support growth and communities*

The project supports renewable energy generation in the region and is considered to be generally consistent with Goal 1, and particularly Direction 12, of the Regional Plan.

2.1.6 MUSWELLBROOK LOCAL STRATEGIC PLANNING STATEMENT (MSC 2020)

MSC endorsed the *Muswellbrook Local Strategic Planning Statement* (LSPS) at its 30 June 2020 Ordinary Meeting. The LSPS establishes a 20-year Vision for the desired future state of the local area, being:

A Community in Transition – Muswellbrook will have a more sustainable community, environment and economy through diversification.

The Vision is supported by 19 Planning Priorities grouped in three different Themes. Each Planning Priority is supported by a set of Planning Principles and Measurable Actions.

Relevant to the proposal are the following Planning Priorities and Principles:

- *Opportunities for creativity, jobs and investment*
 - *Planning Priority 1: Our Shire embraces technology and innovation*
 - *Planning Principle 3: The production and distribution of sustainable energy will continue in the Shire, with a shift to alternative renewable energies such as wind, biomass, gas, solar, geothermal and pumped hydro sources.*
 - *Planning Principle 4: Muswellbrook continues to generate and distribute energy to the Region and State through adaptive reuse of the existing infrastructure.*
- *Improved wellbeing, safety and belonging:*
 - *Planning Priority 12: Urban development is focused in areas with existing infrastructure and new infrastructure and services required for urban growth is appropriately funded.*
 - *Planning Principle 1: Infrastructure required to support urban development is provided or upgraded.*
 - *Planning Principle 2: The spare capacity of existing services and infrastructure is utilised.*
- *Enhanced environment, natural assets and scenic qualities:*
 - *Planning Priority 18: We adapt to climate change and build climate and hazard resilience.*
 - *Planning Principle 1: Renewable energy generation is encouraged.*
 - *Planning Principle 3: Climate change adaption is promoted and considered in land use planning.*
 - *Planning Principle 4: Resource consumption and waste generation is reduced.*
 - *Planning Priority 19: Development is suitable for the location, minimises environmental impact and responds to environmental characteristics.*
 - *Planning Principle 2: Technology that assists in the sustainable use of resources is encouraged.*

The project will support planning priorities 1, 12 and 18 through the provision of improved resilience and reliability within the energy network.

2.2 Local Context

As shown in **Figure 2**, the urban area of Muswellbrook is located to the south-west of the site and contains established and approved residential development areas. Muswellbrook accommodates a residential

population of approximately 12,072 persons, and employs people across a range of industries including the mining and retail industries. It features a sizeable central business district (CBD) with a range of businesses and facilities.

The Muswellbrook CBD is located approximately 2.5 km to the south-west of the site. The township of Muswellbrook is generally elongated along a north-south access along the alignment of the New England Highway. It is noted that a New England Highway bypass of Muswellbrook is proposed that would re-route the highway past the project site. Three options for the alignment have been presented in the *New England Highway Muswellbrook Bypass Options Report* (RMS 2018), currently in review stage following Transport for NSW (TfNSW) community consultation in December 2020 – refer **Figure 2**.

The site is connected to the local traffic network via Sandy Creek Road, which crosses the Main Northern Railway Line to connect to the New England Highway, approximately 620 metres from the site. The New England Highway connects Muswellbrook to Scone, Tamworth, Armidale, Glenn Innes, Tenterfield and Queensland in the north and to Newcastle via Singleton and Maitland in the south.

As shown in **Figure 4**, the site is zoned SP2 – Infrastructure and E3 – Environmental Management under the MLEP, with land immediately surrounding the site being a mixture of SP2, E3, RU1 – Primary Production, R5 – Large Lot Residential and R1 – General Residential. The project is located on land zoned SP2, with the exception of the proposed transmission line from the BESS to the Muswellbrook substation, which is located on the E3 zoned land.

Approximately 41 non-associated residential receivers are located within 500 m of the project site. The closest developed non associated receivers are 13 and 18 Lonhro Place, Muswellbrook at a distance of approximately 370 metres to the southwest of the - refer **Figure 3**. Intervening land is currently in use for grazing purposes.

To the west of the site, is the Northview Estate residential subdivision (refer to **Figure 5**), of which Stages 1, 2 and 3 have been constructed whilst Stages 4, 5 and 6 remain unbuilt. The closest land identified for residential development is the eastern edge of Stage 6 of the Northview residential subdivision, at a distance of approximately 200 metres from the site boundary.

Between 500 m and 1 km of the site, there are approximately 150 residential receivers located on low density residential allotments (R2 zoned land) within the Northview Estate on the periphery of Muswellbrook – refer **Figure 3**.

Other major nearby uses include the Muswellbrook waste management facility located approximately 500 metres to the south-east, a place of worship located approximately 650 metres to the north and the Muswellbrook Coal Mine is located approximately 1.7 kilometres to the east.

The site is well separated from sensitive natural features such as rivers or other forms of sensitive landscape. As noted, the surrounding environment contains a range of infrastructure including the nearby waste Muswellbrook management facility and Muswellbrook Coal Mine, together with the alignment of the future New England Highway Muswellbrook Bypass.

It is noted that the site encroaches into an area of mapped Level 3 land capability class/biophysical strategic agricultural land, however the extent of interaction with this land resource is very small and unlikely to lead to any loss of land resources or sterilisation of land.



Figure 2 – Local context

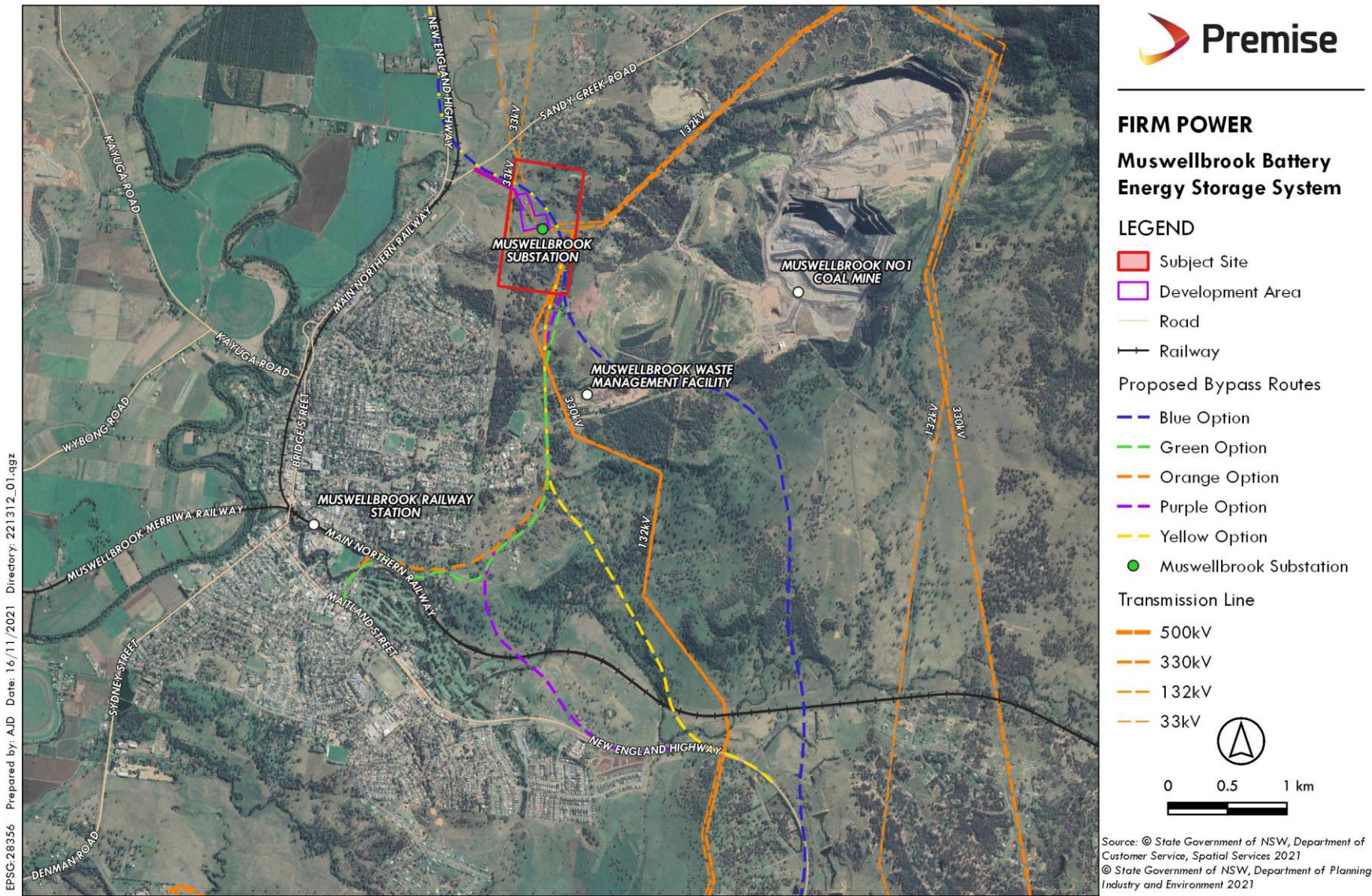


Figure 3 – Development site

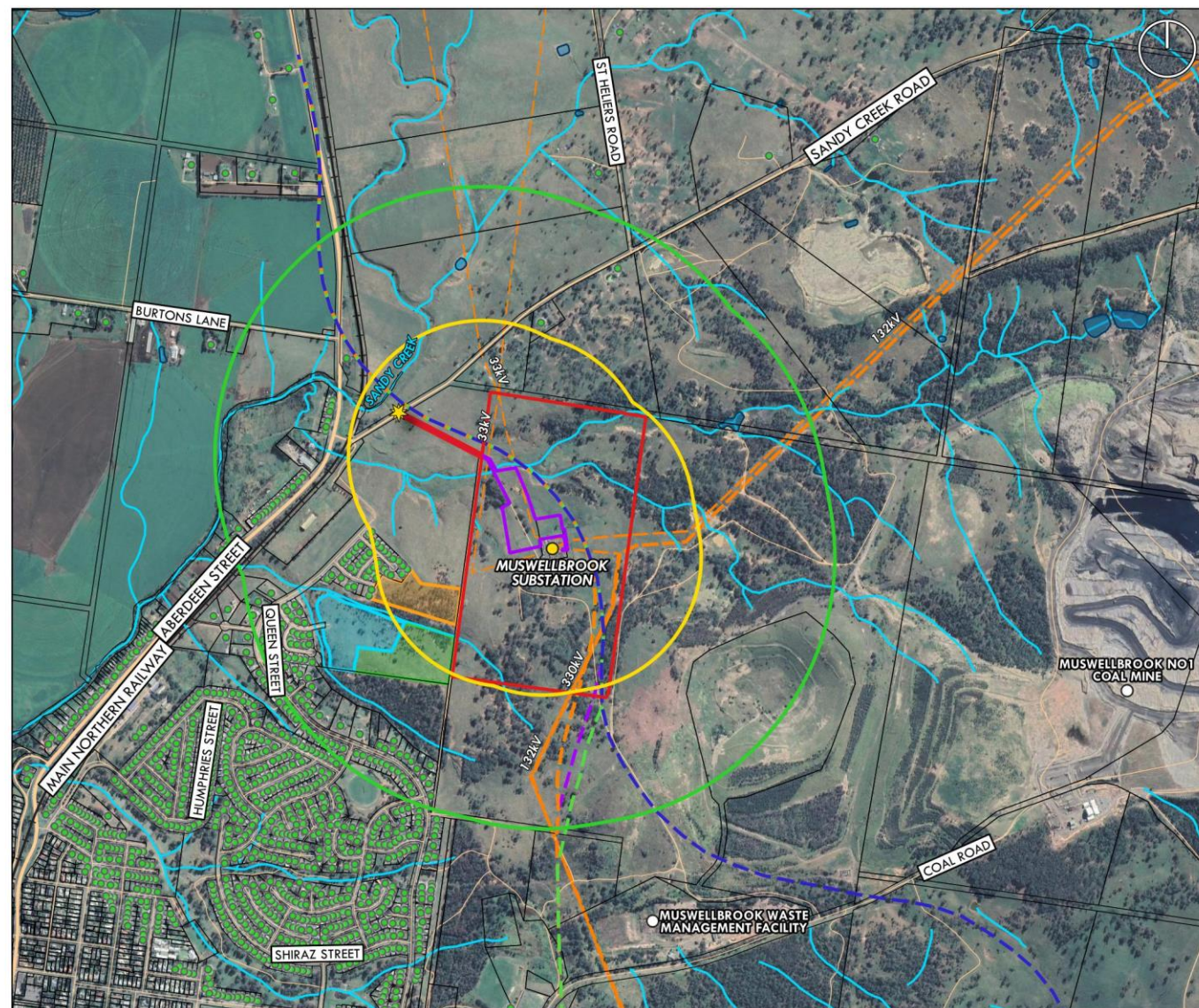
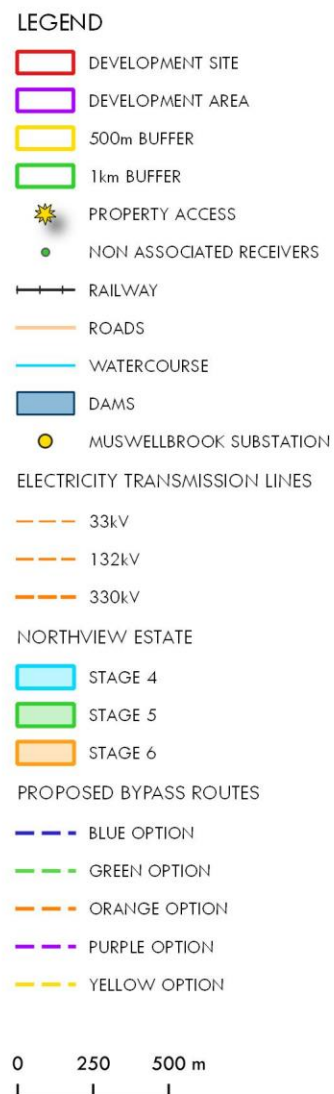
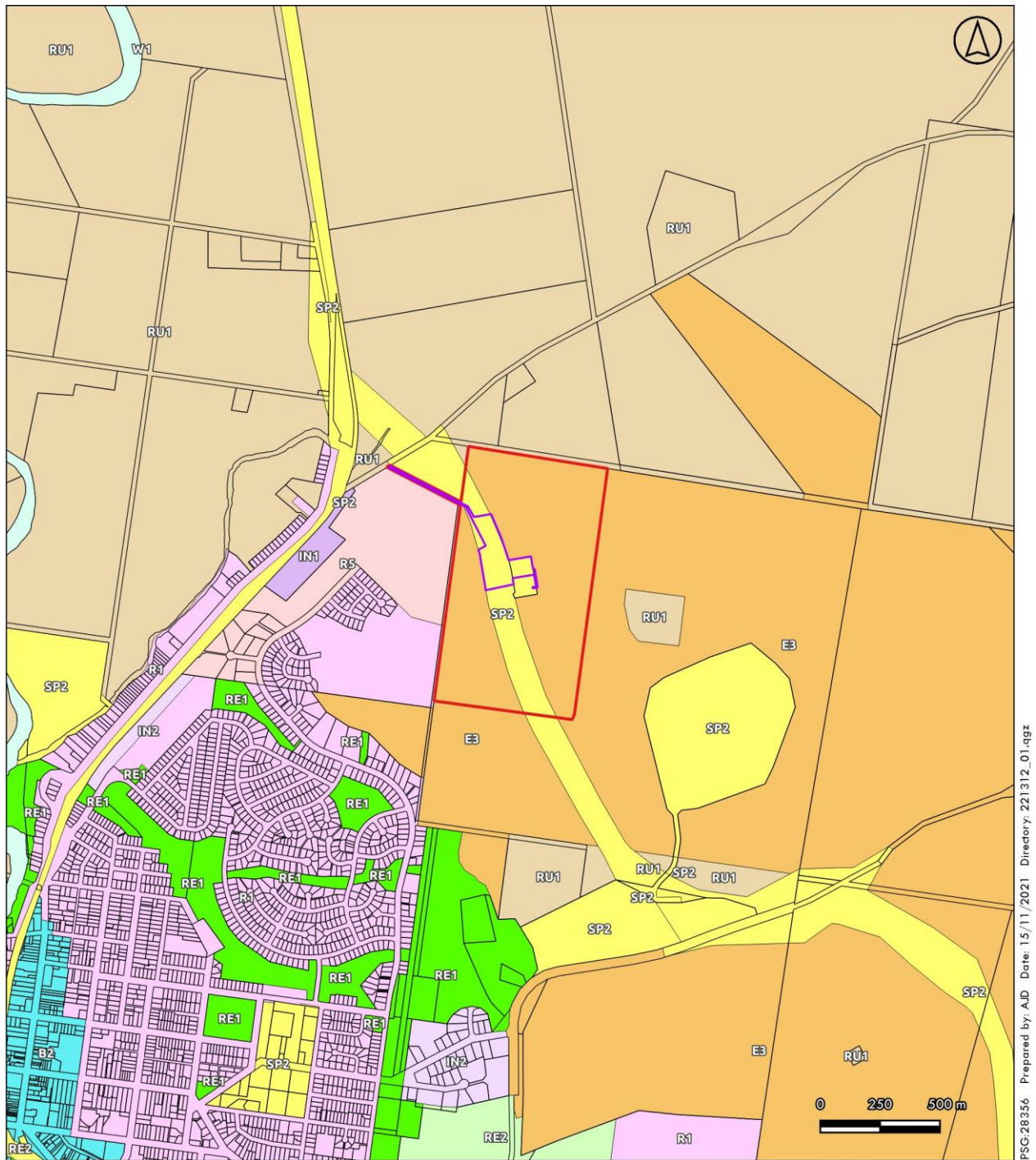


Figure 4 – Zoning



LEGEND

	Subject Site		RE1
	Development Area		RE2
	Cadastre		RU1
			SP2
			W1
			IN1
			IN2
			R1
			R5
			B2
			E3

Figure 5 – Northview Estate Stages 4, 5 and 6 (Marshall Scott Surveying and Land Development Consultants 2014)



2.3 Site Description

2.3.1 OVERVIEW

The subject site has an area of approximately 62.76 hectares. The Ausgrid Muswellbrook substation is located centrally within the site, and occupies approximately 0.72 hectares. Existing 132 kV and 33 kV powerlines traverse the site, extending from with eastern and western sides of the substation and following an east-west and north-south alignment. The proposed Muswellbrook bypass alignment traverses the eastern section of the site in a north-south direction (refer **Figure 2**).

The site is accessed by Sandy Creek Road via an existing driveway access into the site. Sandy Creek Road connects to the New England Highway in the west, and links the site to Muswellbrook in the south.

The site generally rises from north to south, with a varying height of RL 164 metres to RL 175 metres.

The site includes two unnamed tributaries of Sandy Creek, which merge in the northern portion of the site, draining towards the Hunter River via the western boundary of the site. While the site is largely cleared, patches of native and non-native vegetation are scattered throughout the site, primarily located in the south of the site and along watercourses (refer **Figure 11**).

The cleared areas of the site have a history of grazing activities.

The proposed development occupies an area of approximately 4 hectares within the site, and has been located to avoid native vegetation, watercourses and E3 zoning to the greatest extent possible. Only the connecting transmission line would be located within the E3 zone.

2.3.2 ACCESS

As shown in **Figure 6**, access to the site is provided by a partially sealed, unnamed Crown road running through Lot 15 DP905479 and Sandy Creek Road, a local, undivided and unmarked road with speed limit transition from 60 to 80 to 100km/hr near the site. Sandy Creek Road is a local road, for which MSC is the roads authority.

The New England Highway is a classified road for which MSC is also the roads authority, noting that some of the maintenance functions of the roads authority are adopted by Transport for NSW (TfNSW) due to the classified road status.

Site access for the proposed BESS would rely on the existing connection via Sandy Creek Road.

2.3.3 EXISTING IMPROVEMENTS

As shown in **Figure 6**, existing improvements within the site include:

- Substation occupying a total area of approximately 0.72 ha in the central portion of the site;
- Existing driveway access through Lot 15 DP905479 to the site from Sandy Creek Road; and
- 132 kV and 33 kV powerlines which extend from with eastern and western sides of the substation and follow an east-west and north-south alignment.

2.3.4 HERITAGE

Whilst the site is not identified as being or adjoining an item of Aboriginal or European heritage significant or within a heritage conservation area under the MLEP:

- Locally significant Muswellbrook Brick Works (MLEP Item No. I112) is located approximately 140 metres to the east of the site, within the Muswellbrook Quarry lands; and

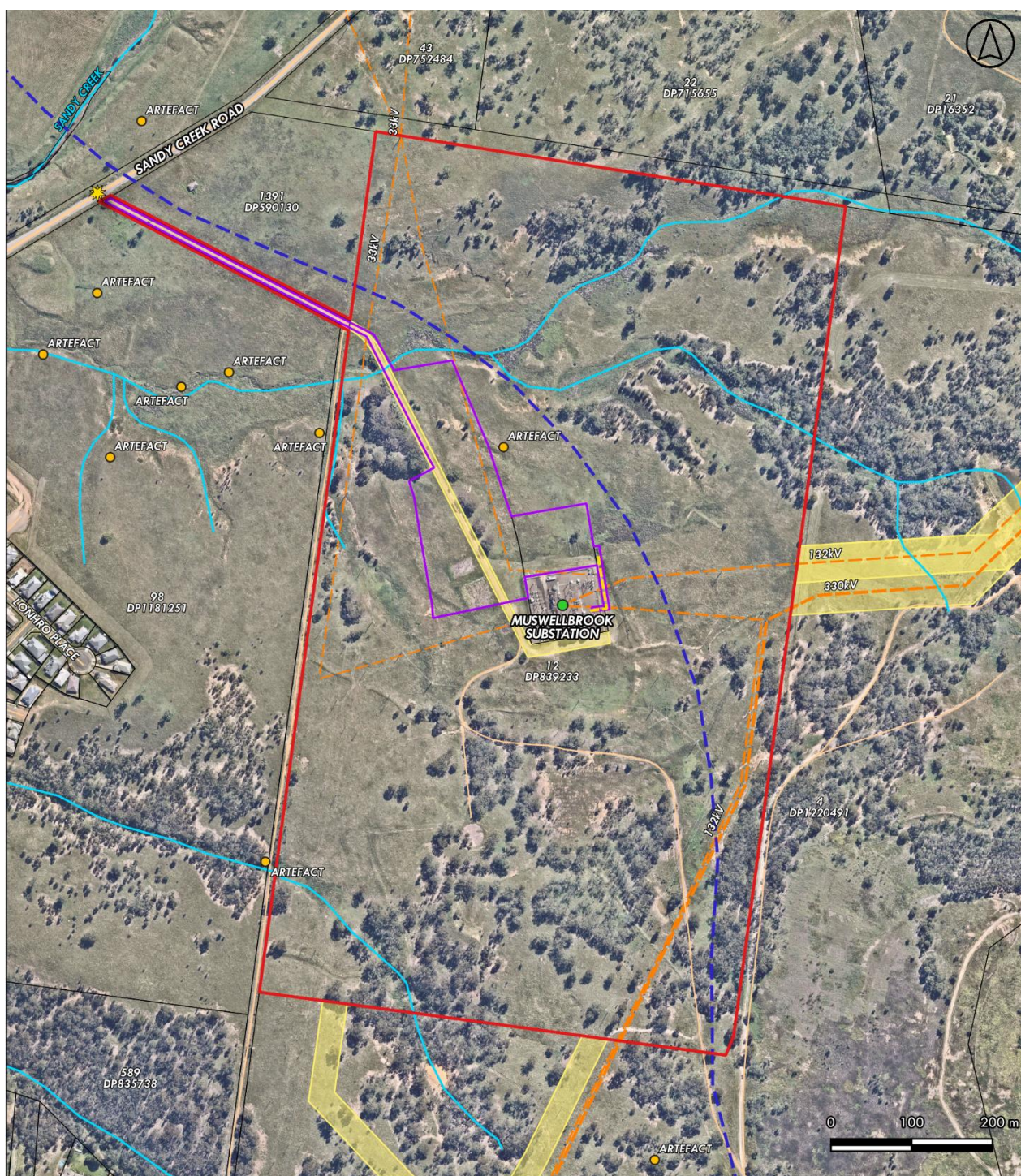
- AHIMS Basic Search on 30 August 2021 identified 17 Aboriginal sites within a 1-kilometre buffer of the site (refer to **Figure 7** and **Appendix C**).

2.3.5 MINING

The site is mapped as being in an affected mine subsidence development area - Muswellbrook. In accordance with advice from the Subsidence Advisory NSW (SA NSW), Guideline 8 indicates that no restrictions apply to this site. Contact has been made with SA NSW and their feedback is provided in **Appendix H**.

















The site is surrounded by active mining titles, however neither the subject development site nor development area intersect these titles.

Figure 6 – Site analysis and proposed development



EPSC:28356 Prepared by: A.D. Date: 16/11/2021 Directory: 221312_01.qgz

LEGEND

- | | | |
|--|--|--|
|  Subject Site |  Muswellbrook Substation |  Property Access |
|  Development Area |  Connecting Electricity Transmission Line |  Mapped Aboriginal Heritage Sites |
|  Cadastre |  Transmission Lines | |
|  Road |  33kV | |
|  Easement |  132kV | |
|  Water Body |  330kV | |
|  Watercourse | | |
|  Proposed Bypass | | |

2.3.6 HYDROGEOLOGY

2.3.6.1 Groundwater

The nearest groundwater boreholes with a known standing water level approximately 2 kilometres to the south-west of the site, near the intersection of St Heliers Street and Bridge Street, include:

- GW202484, with a standing water level of 5.8 metres;
- GW202485, with a standing water level of 3.9 metres;
- GW202486, with a standing water level of 5.2 metres;
- GW200779, with a standing water level of 9 metres; and
- GW200781, with a standing water level of 9.8 metres.

Standing water levels in the above borehole cluster are likely to be higher than the site due to being located at lower elevation (RL 156 metres as compared to RL 170 metres near the centre of the site) and nearer to the Hunter River, which is located approximately 1.4 km to the west of the site

2.3.6.2 Soil Landscape

As shown in **Figure 8**, the Dochra soil landscape dominates the southern portion of the site and is also found in the north-western corner of the site, separated by Donalds Gully and Little Glasstree Hill soil landscapes. The Dochra landscape has moderate limitations to urban land uses whilst the Donalds Gully and Glasstree Hill soil landscapes have moderate to high limitation to urban land uses. All landscapes have moderate to high limitations for grazing and cultivation, except for the Little Glasstree Hill soil landscape which has very high to extreme limitations for cultivation.

A search of the NSW EPA Contaminated Land Record on 30 August 2021 did not identify any contaminated sites within the MSC LGA.

2.3.6.3 Surface Water

As shown in **Figure 9**, two unnamed tributaries of Sandy Creek occur and merge in the northern portion of the site, forming a second order stream and draining towards the Hunter River via the western boundary of the site. The portion of the development area associated with access would intersect with the second order stream in the north-western extent of the site (see **Figure 9**).

The site is not identified as impacted by flooding in the 1:100-year ARI event or PMF under the *Hunter River Flood Study (Muswellbrook to Denman) Model Revisions Report* (Royal Haskoning DHV 2017).

The unnamed creeks running through the site are mapped as containing key fish habitat. As noted, impacts to the creek are limited to the extent of the current access to the property.

2.3.6.4 Contamination

A search of the list of contaminated sites notified to the EPA and a Land Record was undertaken for contaminated sites within the Muswellbrook LGA on 15/11/2021. 12 sites are recorded within the town of Muswellbrook as being notified to the EPA; none relate to, or are located near to, the site. No sites are listed on the contaminated land record for the Muswellbrook LGA.

2.3.7 LAND RESOURCES

As shown in **Figure 10**, the minor north-western corner of the site is identified as Class 3 land soil capability whilst the remainder is identified as Class 5.

Mapped biophysical strategic agricultural land corresponds with the abovementioned class 3 land (located to the north-west of the site) but is not impacted by the proposed development.

2.3.8 VEGETATION

As shown in **Figure 11**, the following vegetation occurs within the site:

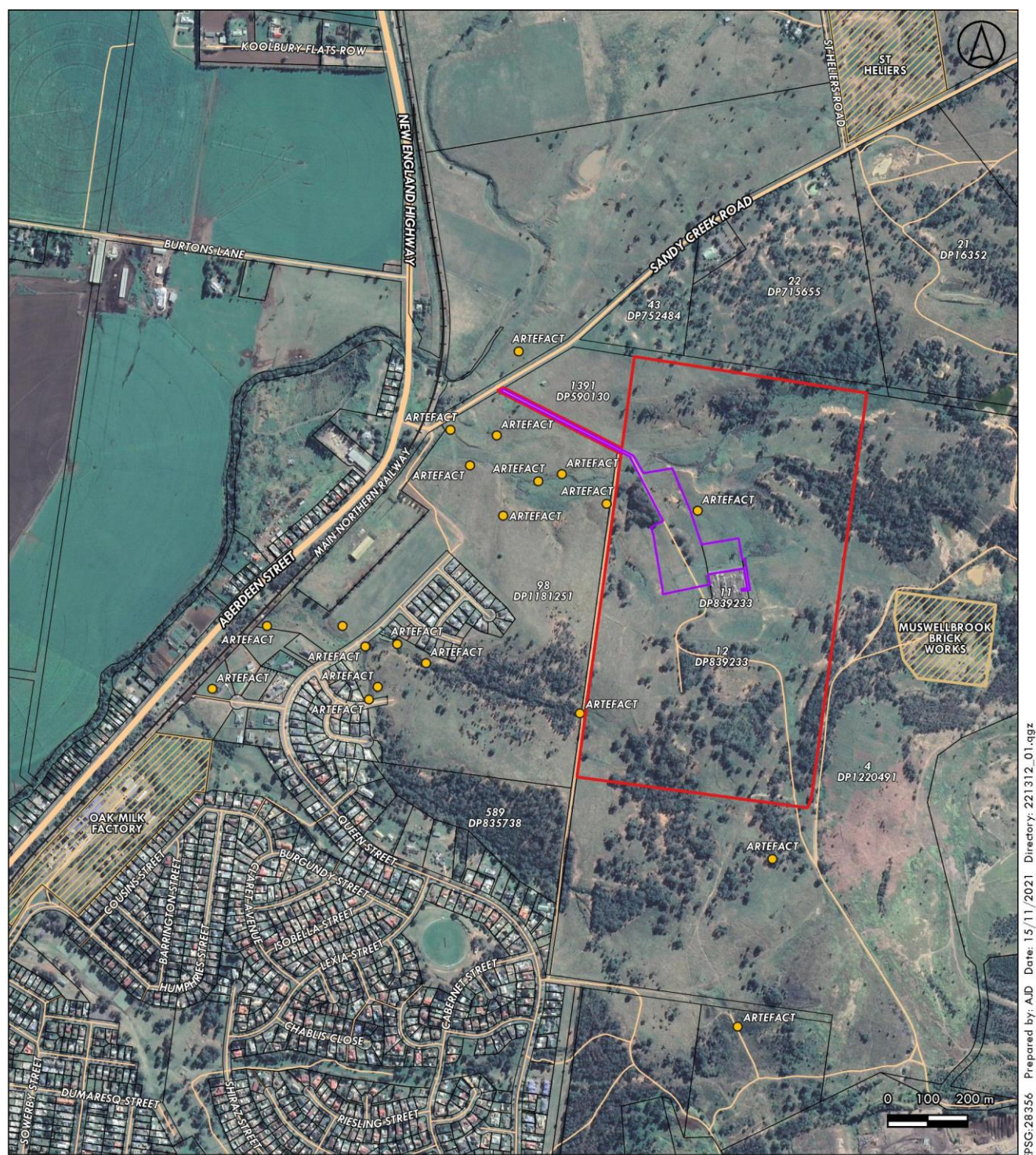
- 35.19 hectares of non-native vegetation predominantly in the central portion of the site, extending into the north-western corner;
- 27.41 hectares of Narrow-leaved Ironbark – Grey Box grassy woodland of the central and upper Hunter (PCT 1691) predominantly in the south-eastern corner of the site and in various patches across the northern portion of the site; and
- 0.17 hectares of Weeping Myall – Plains Grass grassy woodlands of the Brigalow Belt South (PCT 1766) in the southern portion of the site, near the western boundary.

Vegetation occurring within the site is not identified under the Biodiversity Values Map given effect under Clause 7.1(1)(b) of the *Biodiversity Conservation Regulation* 2017 (the BC Regulation) via Section 7.4(1) of the *Biodiversity Conservation Act* 2016 (the BC Act).

2.3.9 BUSHFIRE

As shown in **Figure 12**, patches of vegetation in the north-eastern corner and southern portion of the site are identified as Vegetation Category 1 whilst the remainder of the site is identified as Vegetation Category 3.

Figure 7 – Heritage

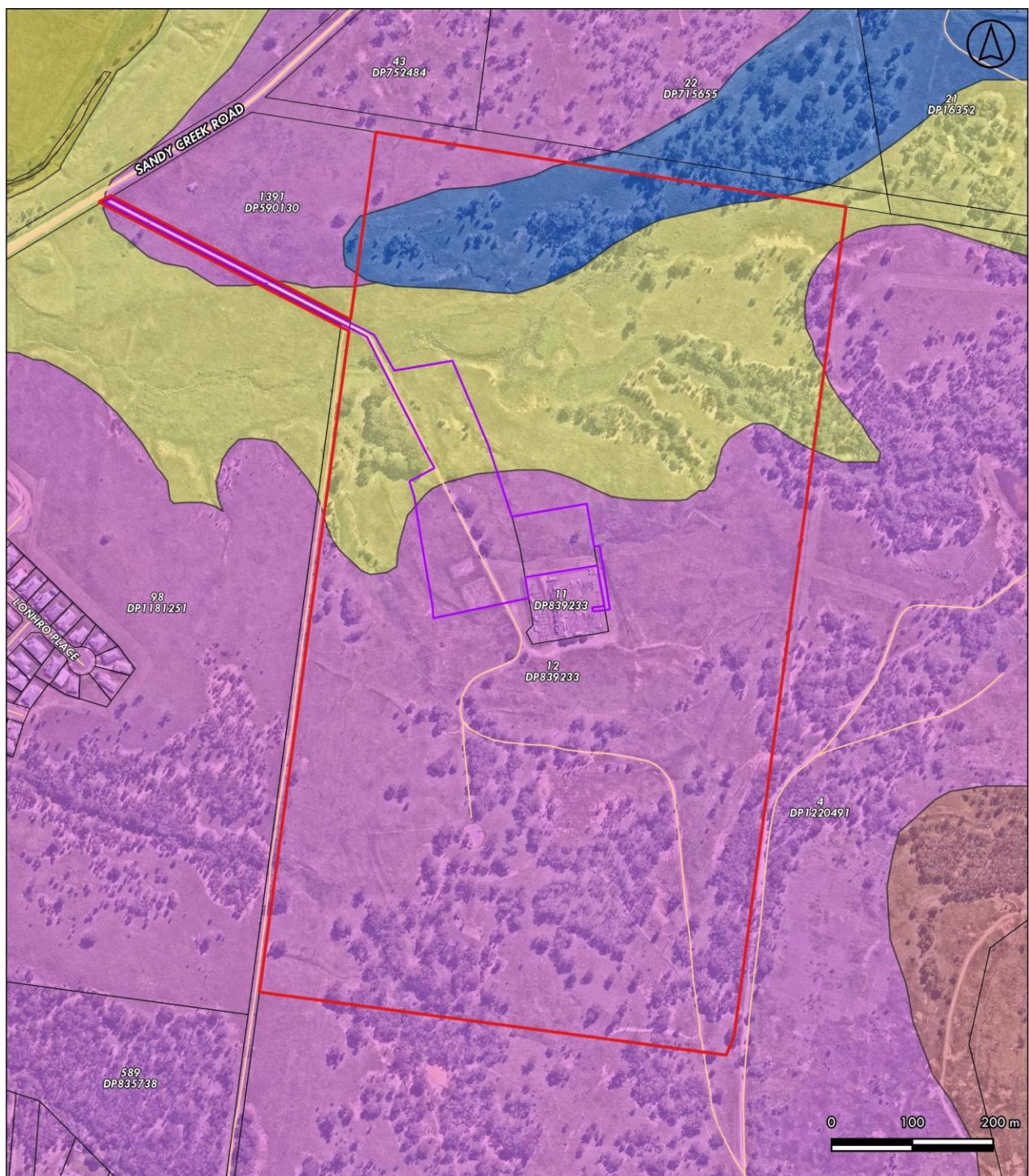


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LEGEND

-  Subject Site
-  Development Area
-  Cadastre
-  Road
-  Mapped Aboriginal Heritage Sites
-  Heritage Items

Figure 8 – Soil landscapes



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LEGEND


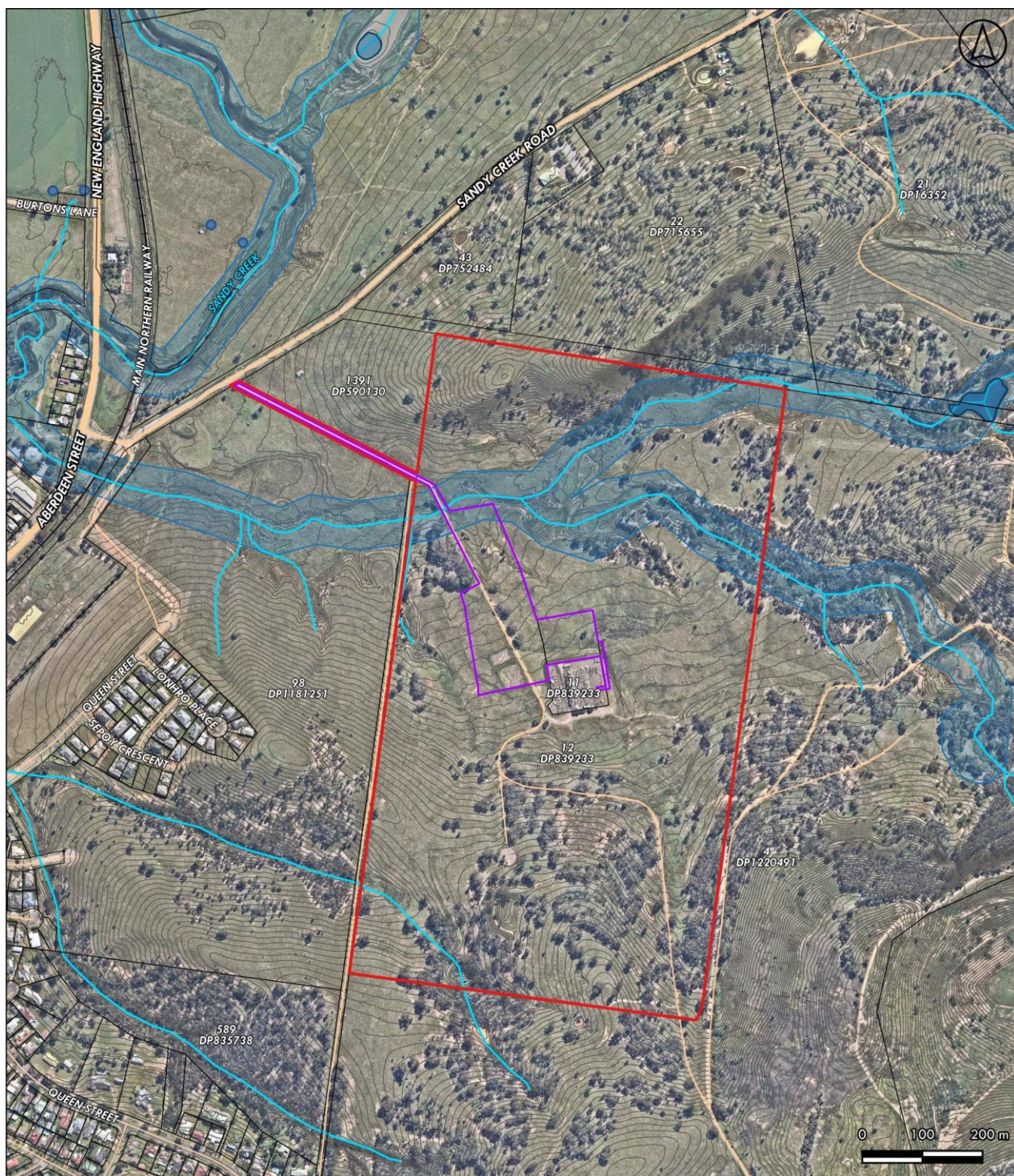
	Subject Site		Disturbed Terrain variant a
	Development Area		Dochra
	Cadastral		Donalds Gully
	Road		Little Grasree Hill

Figure 9 – Hydrology and aquatics



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LEGEND







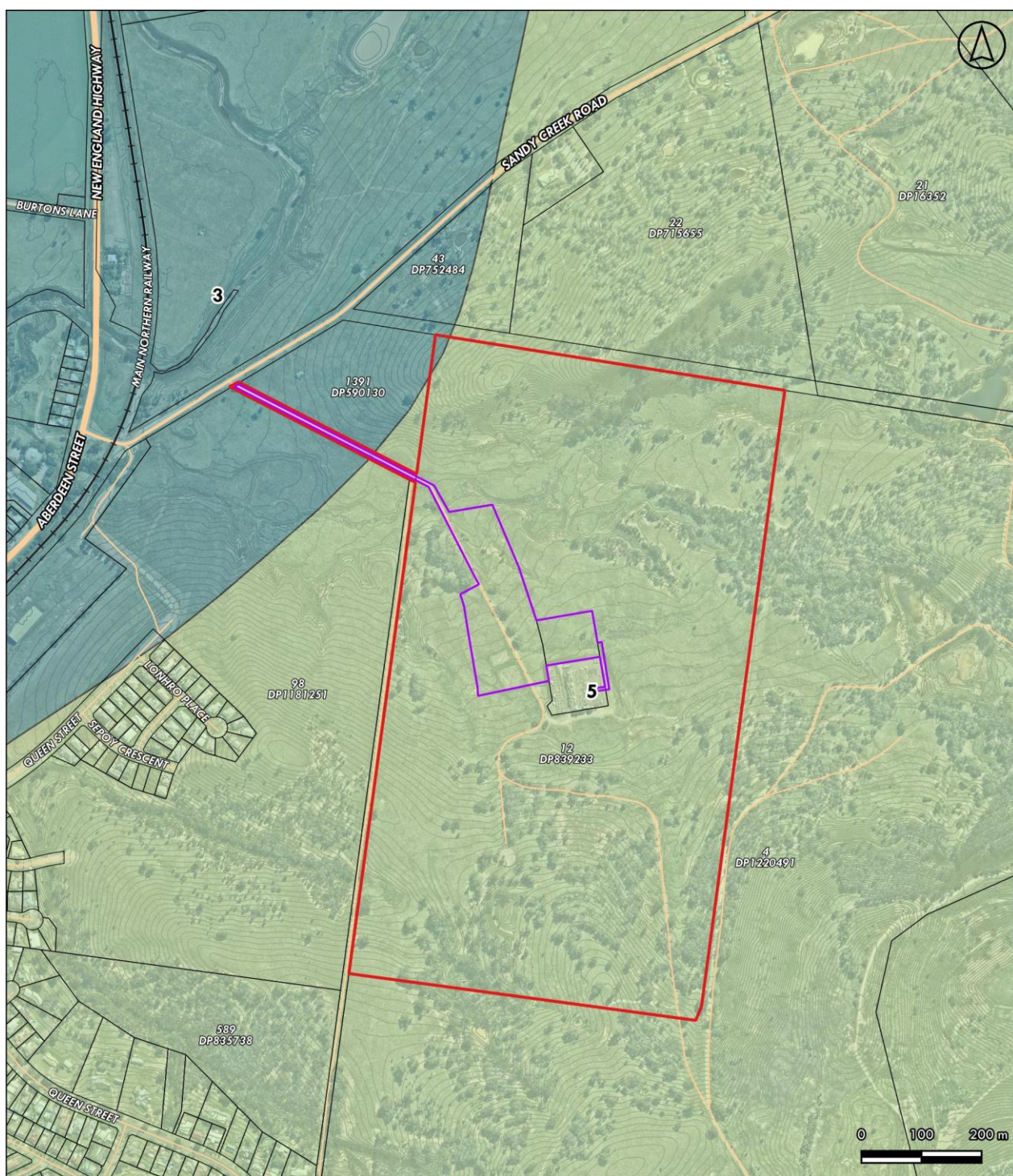
- | | |
|--|--|
|  Subject Site |  Watercourse |
|  Development Area |  Water Body |
|  Cadastre |  Key Fish Habitat |
|  Road |  Groundwater Bore |
|  Railway | |
|  Contours (1m Interval) | |

Figure 10 – Land resources



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LEGEND









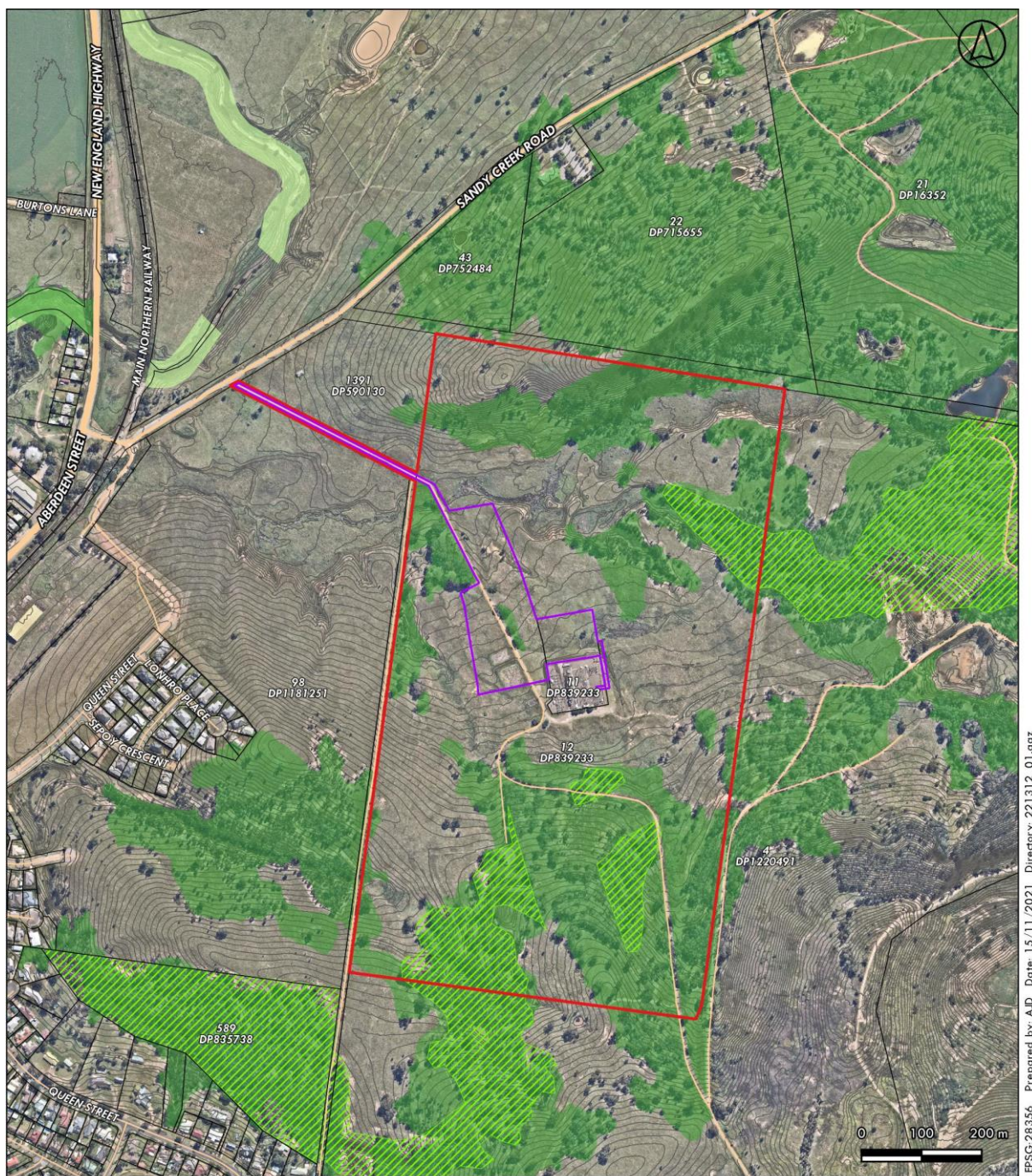
- | | |
|--|--|
|  Subject Site |  Land and Soil Capability 3 |
|  Development Area |  Land and Soil Capability 5 |
|  Cadastre | |
|  Road | |
|  Railway | |
|  Contours (1m Interval) | |

Figure 11 – Vegetation



LEGEND










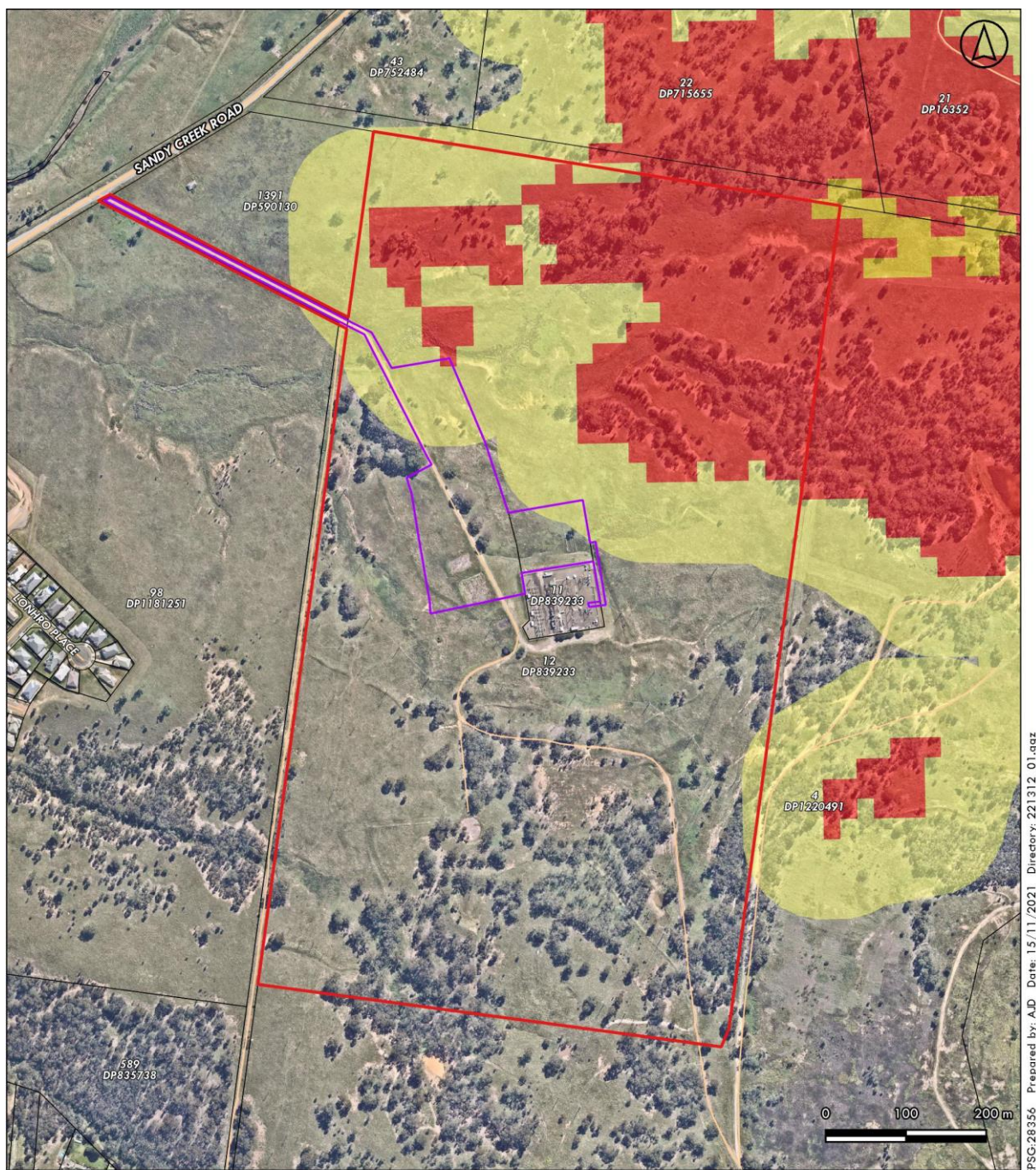
- | | |
|--|---|
|  Subject Site |  Native Plant Community Type (PCT) |
|  Development Area |  Terrestrial Biodiversity |
|  Cadastre |  Biodiversity Values |
|  Road | |
|  Railway | |
|  Contours (1m Interval) | |

Figure 12 – Bushfire



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LEGEND

- | | |
|--|---|
|  Subject Site |  Bush Fire Prone Land |
|  Development Area |  Vegetation Category 1 |
|  Cadastre |  Vegetation Category 2 |
|  Road |  Vegetation Category 3 |
| |  Vegetation Buffer |

3. PROJECT DESCRIPTION

3.1 Project Objectives

The Muswellbrook BESS will be designed to provide grid flexibility services and will support the efficiency of the existing electrical network. The BESS would function to purchase power from the grid while prices are low and sell back while prices are higher. Through regulating the availability of energy, the development will have the capacity to store unutilised energy during low demand and enhance the total supply of energy during high demand. This will benefit the existing electrical grid, improving the efficiency of electrical generation and providing consumers with a more consistent and reliable supply of energy.

The BESS facility will utilise lithium-ion technology batteries installed in prefabricated enclosures similar in size to standard shipping containers. During periods of low demand, power will generally flow from the Ausgrid substation 132kV switchyard to the BESS facility via a new 132kV or 33kV sub-transmission line. The power conversion systems rectify the power into a form that is suitable for storage in the facility's batteries. During periods of high demand, the stored energy in the batteries will generally flow back through these systems to the Ausgrid substation and ultimately the broader grid.

The BESS, through its connection to the substation, would possess the ability to store power and release it to the network at times of peak demand or critical need. It would also have the capacity to charge or discharge when power system services are required to maintain the stability of the broader electricity grid. The BESS strengthens the power network by providing greater flexibility in grid management.

3.2 Proposed Development Overview

The project comprises a BESS and associated infrastructure that will occupy an area of approximately up to 4 ha. The BESS will have a capacity of up to 150 MW and 600 MWh. The BESS will connect to the adjacent Muswellbrook substation via a new 132 kV or 33 kV underground or overhead sub-transmission line and will store energy from the grid.

The key project infrastructure includes:

- containerised lithium-ion type batteries with associated power conversion systems, switchgear and a control building;
- 132 kV or 33 kV underground or overhead sub-transmission line to connect the BESS to the Muswellbrook substation; and
- cabling and collector units, site office, storage area, internal access tracks, on-site parking, security fencing, lighting and temporary construction laydown area.

The proposed BESS, associated infrastructure and development footprint will largely align with, and will be contained within, the development area shown in **Figure 6**. The layout of the BESS and associated infrastructure will be detailed in the Environmental Impact Statement (EIS) for the project.

No external transmission lines or off-site connection works are proposed by this development. The development will include an approximately 160 metre long, 33 kV or 132 kV underground or overhead transmission line to connect to Ausgrid's Muswellbrook Substation and utilise its existing grid connection.

The project would utilise the existing site access from Sandy Creek Road.

The construction period is expected to take up to 12 months. The batteries would be manufactured offsite and delivered ready for installation following completion of site preparation, including levelling the site, and constructing a bench on which to install the BESS. It is anticipated that infrastructure would be delivered to the

site from either the Port of Botany or the Port of Newcastle, with vehicles accessing the site via the routes shown in **Figure 13**.

It is anticipated the BESS would be operational for a period of approximately 20 years after which time the BESS would be removed and the site would be decommissioned, including the removal of all above ground infrastructure and the remediation of the site. It is conceivable that the infrastructure may be upgraded rather than decommissioned and the lifespan extended. The BESS would operate 24 hours a day, seven days a week.

The project is expected to generate up to 75 Full time Equivalent (FTE) jobs during construction and 2-3 FTE jobs during operation.

The area of the BESS would be leased for the duration of the development from Ausgrid, either via a long-term lease managed via a subdivision of the land, or through a lease of premises, subject to the limits in place at the time of commissioned. If subdivision is required to facilitate the leasing arrangements, this would be addressed by the SSD application.

3.3 Proposed Development Details

The primary components associated with the installation of the BESS are as follows:

- Off-site manufacture of the BESS equipment;
- Vegetation clearing to provide a developable site;
- Levelling the development site and constructing a bench on which to install the BESS unit;
- Installation of the BESS;
- Connecting the BESS to the substation via 33 kV or 132kV circuits/sub-transmission line;
- Constructing an earthing system for the BESS within the subject property;
- Ancillary high voltage equipment, such as circuit breakers, switching equipment, filters, transformers and other electrical protection equipment;
- Auxiliary power, protection, indication and control systems;
- Fencing and gates as required to provide security around the BESS facility;
- Outdoor sensor lighting to provide illumination, when needed, at night;
- Storage enclosures for storing equipment;
- Communication room for housing communication equipment;
- HVAC equipment for providing cooling and ventilation;
- Commissioning;

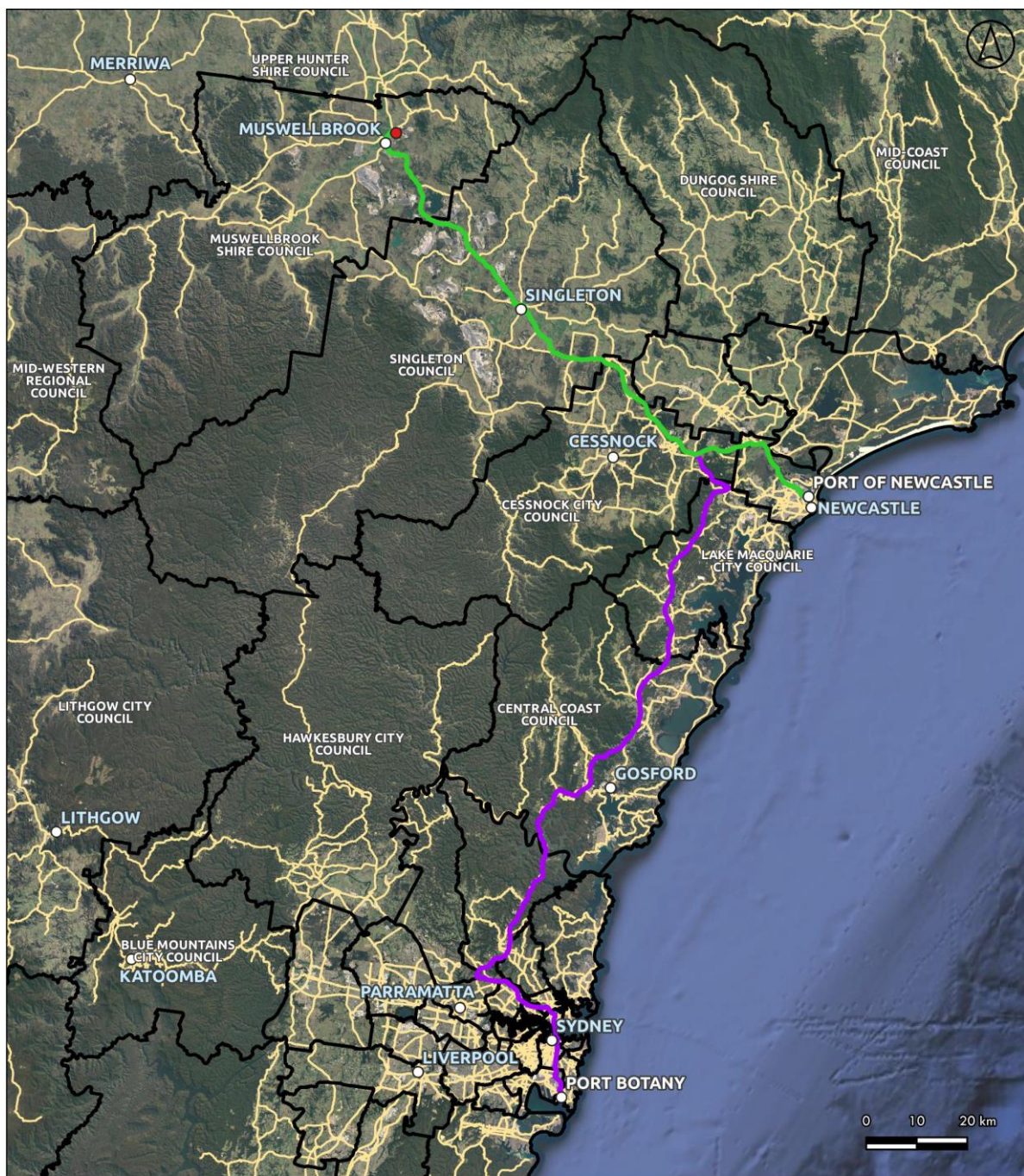
Upon decommissioning of the BESS, the following indicative steps would occur:

- The above ground equipment would un-bolted from the concrete slab and removed by crane onto transporters and taken away from site to an appropriate recycling or waste facility;
- Underground services would be cut back to below ground level and capped;
- The development site would then be landscaped to a safe, clean and stable state;
- A decommissioning arrangement has been established with Ausgrid to provide assurance for the decommissioning components described above.

As noted, the site is expected to remain operational for approximately twenty years although this could be extended through upgrade/replacement of infrastructure subject to technological improvements/innovation. Although the site will be monitored and controlled remotely during operation, some routine maintenance will be periodically performed on-site. On-site maintenance activities will only require limited personnel. Ongoing site operation and maintenance will generally involve:







- Monitoring, testing and maintenance of onsite equipment
- Receipt of goods,
- Removal of waste and;
- Other general site maintenance (e.g., care of groundcover).

Figure 13 – Proposed materials transport route



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LEGEND

-  LGA Boundary
-  Site Locality
-  Locality
-  Road
-  Materials Transport Route Option 1 (From Port of Newcastle)
-  Materials Transport Route Option 2 (From Port Botany)

3.4 Justification for the Preferred Option

Development options considered as part of this Scoping Report and to be considered in greater detail in the EIS are described in **Table 1** below.

Table 1 – Development options

Alternatives:		Description:
Option 1	Base Case, 'Do Nothing'	Option 1 would involve not installing and operating a BESS at the site or elsewhere.
Option 2	Alternative Site	Option 2 would involve installing and operating a BESS at an alternative site.
Option 3	BESS Technology and Provider Alternatives	Option 3 would involve using alternative technology at the site.
Option 4	BESS at 20-24 Sandy Creek Road, in alternative portion of the site	Option 4 would involve developing the BESS within an alternative area of the site
Option 5	BESS at 20-24 Sandy Creek Road, Muswellbrook, 'Preferred Option'	Option 5 would involve the installation and operation of a BESS at the site.

Of the above, Option 4 is the preferred option, and this is discussed in the following sections.

3.4.1 OPTION 1

Option 5 is preferred over Option 1 on the grounds that the latter is:

- Inconsistent with the strategic context set by State and local policy, including:
 - Goal 22 of the NSW 2021 Plan (NSW Government 2011) which seeks to "*promote energy security through a more diverse energy mix, reduce coal dependence, increase energy efficiency and move to lower emission energy sources*";
 - Goal 1 of the *NSW REAP* (NSW Government 2013) which seeks to attract renewable energy investment;
 - Objectives of the Energy Security Safeguard legislation to improve the affordability, reliability and sustainability of energy by addressing the shortfall in firm capacity during times of peak demand;
 - Investment in the preparation of the Hunter REZ in accordance with the *NSW Electricity Strategy and Electricity Infrastructure Roadmap* (DPIE 2020) as a critical region for renewable energy due to strong investor interest and availability of existing infrastructure due to the area's history of supplying electricity for the network;
 - Direction 12 of the *Hunter Regional Plan* (DPE 2016) which seeks to "diversify and grow the energy sector;
 - Planning Priorities 1, 12, 18 and 19 of the *Draft Muswellbrook LSPS* (MSC 2020) which seeks to embrace technology and innovation to achieve positive environmental outcomes for residents whilst providing the necessary infrastructure for the continued growth of the Muswellbrook Shire.
- Fails to enable the regulation of electricity supply which improves its efficiency, consistency and reliability for consumers as it becomes increasingly variable due to the transition from traditional to more sustainable, renewable sources in the region.

3.4.2 OPTION 2

Option 5 is preferred over Option 2 as the latter would result in increased costs and environmental impacts associated with the acquisition of a suitable property (Firm Power has entered into an agreement to lease a portion of the site of the proposed BESS from Ausgrid) and construction of increased lengths of connecting infrastructure (likely to include earthworks and vegetation removal), as compared to the site of the proposed development in which the length of connecting infrastructure is expected to be minimal due to the proximity to the existing Ausgrid substation.

By locating the BESS project adjacent to Ausgrid's substation, the project is also sympathetic to the existing power infrastructure setting and the current use of the land.

3.4.3 OPTION 3

Option 5 is preferred over Option 3 as:

- The former provides the most reliable way, using current technology, to regulate electricity supply in a network which is expected to become increasingly variable due to the transition from traditional to more sustainable, renewable sources in the region; and
- The latter may not be suitable to the site due to its limited area or other reasons, requiring the seeking out and acquisition of an alternative site and construction of connecting infrastructure.

3.4.4 OPTION 4

Option 5 is preferred over Option 4 as:

- the majority of the site is zoned as E3-Environmental, and a BESS is not a permissible use in this zone. The preferred option provides the majority of the development area within the SP2 zoned land, with only the connecting transmission line needing to be located on E3 land.
- the New England Highway bypass of Muswellbrook will traverse the eastern section of the site. The preferred option avoids the proposed bypass.

Noting the above, option 5 (the preferred option) is the only available area within the site for the BESS.

4. STATUTORY CONTEXT

The key statutory requirements for the project are set out in **Table 2**.

Table 2 – Statutory requirements for a project

Matter:	Guidance:	Comment:
Power to grant consent	Identify the legal pathway under which consent is to be sought, why the pathway applies, and who the consent authority is likely to be.	<p>Section 4.5 of the EP&A Act provides that the consent authority is the Independent Planning Commission (if the development is of a kind for which the Commission is declared the consent authority by an environmental planning instrument) or the Minister (if the development is not of that kind).</p> <p>Section 4.36(2) of the EP&A Act provides that a State Environmental Planning Policy may declare any development, or any class</p>

or description of development, to be State significant development.

Section 8(1) of the State and Regional Development SEPP provides that development is declared to be State significant for the purposes of the EP&A Act if:

- the development on the land concerned is, by the operation of an environmental planning instrument, not permissible without development consent under Part 4 of the EP&A Act; and
- The development is specified in Schedule 1 or 2 of the SEPP.

The consent authority for the proposed development is likely to be the Minister:

- On the grounds that the proposed development satisfies:
 - Section 8(1)(a) of the State and Regional Development SEPP on the grounds that it is permitted with consent under Section 34(1)(b) of the Infrastructure SEPP; and
 - Section 8(1)(b) of the State and Regional Development SEPP on the grounds that it is for the purposes of electricity generating works that has a capital investment value of more than \$30 million in accordance with Section 20 of Schedule 1 of the SEPP.
- Unless, in accordance with Section 8A of the State and Regional Development SEPP in which case the consent authority is the Independent Planning Commission:
 - The council of the area in which the development is to be carried out (MSC) has duly made a submission by way of objection under the mandatory requirements for community participation in Schedule 1 of the EP&A Act;
 - At least 50 unique submissions (other than from a council) have duly been made by way of objection under the mandatory requirements for community participation in Schedule 1 to the Act; and

		<ul style="list-style-type: none"> – The development application is made by a person who has disclosed a reportable political donation under section 10.4 to the Act in connection with the development application.
Permissibility	<p>Identify the relevant provisions affecting the permissibility of the project, including any land use zones. If there are inconsistencies in these provisions, identify the inconsistencies and explain which provisions prevail to the extent of any inconsistency.</p> <p>If the project is partly or wholly prohibited, identify any provisions or actions being taken that would allow the project to be considered on its merits (e.g., making a concurrent amendment to the relevant)17.</p>	<p>Electricity generating works are prohibited in the SP2 Infrastructure (Classified Road) zone applying to the site under the relevant local environmental plan, the <i>Muswellbrook Local Environmental Plan</i> (MLEP) 2009.</p> <p>Notwithstanding the above, the development is permitted with consent on the following grounds:</p> <ul style="list-style-type: none"> • Under Section 8 of the Infrastructure SEPP, where there is an inconsistency between the Infrastructure SEPP and another environmental planning instrument, the Infrastructure SEPP prevails (with few exceptions, none of which are relevant to this application); • Section 34(1)(b) of the Infrastructure SEPP provides that electricity generating works may be carried out by any person with consent in a prescribed rural, industrial or special use zone (the SP2 Infrastructure zone is a prescribed rural zone).
Other approvals	<p>Identify any other approvals that are required to carry out the project and why they are required. These approvals should be grouped into the following categories:</p> <ul style="list-style-type: none"> • Consistent approvals: approvals that cannot be refused if the project is approved and must be substantially consistent with the approval • EPBC Act approval, and whether a bilateral agreement applies • Other approvals: approvals that are not expressly integrated into the SSD assessment under the EP&A Act (e.g., water access licenses under the Water Management Act 2000, leases under the National Parks and Wildlife Act 1974). <p>Also identify the approvals that would have been required if the project was not an SSD project.</p>	<p>The following consistent approvals are required:</p> <ul style="list-style-type: none"> • A licence under Section 48 of the <i>Protection of the Environment Operations Act</i> 1997 (the POEO Act) to perform an activity listed under Schedule 1 of the POEO Act, including the general electricity works with capacity to generate more than 30 megawatts of electrical power as specified in Section 17, Schedule 1 of the POEO Act. <p>Commonwealth approvals are not required for the following reasons:</p> <ul style="list-style-type: none"> • A search for potential matters of national environmental significance (MNES) that may trigger the need for referral to the Australian Department of Agriculture, Water and the Environment (DAWE) via the online Protected Matters Search Tool (PMST), conducted with a 10-kilometre

<p>Pre-conditions to exercising the power to grant consent</p>	<p>Identify pre-conditions to exercising the power to grant consent for the project that may be relevant to setting the SEARs. These will include mandatory conditions that must be satisfied before the consent authority may grant consent (e.g., under the Sydney Drinking Water SEPP, a consent authority must be satisfied before granting consent that the carrying out of the proposed development would have a neutral or beneficial effect on water quality).</p>	<p>buffer of the site on 30/08/2021 (refer Appendix B):</p> <ul style="list-style-type: none"> – Did not identify any World Heritage Properties or National Heritage places protected by the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act); – Identified one Wetland of International Importance, being the Hunter Estuary Wetlands classified as a Ramsar Wetland, was identified approximately 50-100 kilometres upstream of the site; – Identified five listed threatened ecological communities, 34 listed threatened species and 14 migratory species with the potential to occur in proximity to the site but are unlikely to occur due to the substantially altered landscape and lack of extant vegetation. • A review of 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 <i>Native Title Act 1993</i> (the Native Title Act).
<p>Mandatory matters for consideration</p>	<p>Identify matters that the consent authority is required to consider in deciding whether to grant consent to any development application for the project that may be relevant to setting the SEARs.</p>	<p>Pursuant to Section 1.7 of the EP&A Act, the <i>Biodiversity Conservation Act 2016</i> (the BC Act) is a mandatory matter for consideration. Section 7.9 of the BC Act provides that any application under Part of the EP&A Act for State significant development must be accompanied by a biodiversity development assessment report (BDAR) unless the Planning Agency Head and Environment Agency Head determine that the development is not likely to have any significant impact on biodiversity values.</p> <p>Pursuant to Section 4.15 of the EP&A Act, the following mandatory matters for consideration apply:</p> <ul style="list-style-type: none"> • Relevant environmental planning instruments, including: <ul style="list-style-type: none"> – <i>State Environmental Planning Policy No 33 – Hazardous and Offensive Development</i>;

- *State Environmental Planning Policy No. 55 Remediation of Land;*
- *State Environmental Planning Policy (Infrastructure) 2007;*
- *State Environmental Planning Policy (State and Regional Development) 2011;*
- *State Environmental Planning Policy (Koala Habitat Protection) 2021*
- *State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017; and*
- *Muswellbrook Local Environmental Plan 2009.*
- The relevant development control plan, being the *Muswellbrook Development Control Plan 2009* (noting that the application of development control plans is excluded from SSD under Section 11 of the State and Regional Development SEPP);
- The likely impacts of the development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality;
- The suitability of the site for the development; and
- The public interest.

5. ENGAGEMENT

5.1 Scoping Stage Engagement

To inform preparation of the scoping report, Firm Power has carried out preliminary engagement with surrounding landowners, community groups and regulatory bodies.

Preliminary engagement strategies have aimed to:

- Build an awareness of the project and proposed development
- Establish communication channels with the local community
- Respond to any questions or concerns the community may have and ensure these are considered during development of the project.

Firm Power has implemented the following forms of engagement:

- Letters and notification issued to landowners surrounding the development, community groups and regulatory bodies.
- A project Infoline and mailbox

- A project website.
- Doorknocking.

Non associated residential receivers close to the site were identified through analysis of mapping utilising GIS software. There are no associated or unassociated residential receivers within 500 metres of the project to the north, east or south. To the west is a small urban suburb in north Muswellbrook, containing approximately 41 receivers. Whilst some of these are greater than 500 metres from the project, project introduction/community engagement letters were sent to all dwellings (41) in the suburb.

Regarding the North View Estate, given these lots are not yet developed or occupied, it has not been possible to engage with landowners regarding this land. It is however acknowledged that these lots will be the subject of future residential development via the consents that exist and as such, detailed analysis of impacts to these lots would be included at EIS preparation stage to ensure that all potential impacts are fully understood.

Details of engagement are outlined in the register provided at **Appendix F** and summarised below in **Table 3**.

The dedicated project website, Infoline and email address will remain active and open to the public throughout the project's operation, and the team will respond to enquiries and questions as they arise.

Table 3 – Engagement summary

Stakeholder Group	Method	Purpose of Engagement and Consideration within EIS Assessment.
Department Planning, Industry and Environment	Scoping meeting on 2 September 2021	<p>Firm Power introduced the project to the Department and sought advice on areas of critical assessment. DPIE staff identified the following expectations:</p> <ul style="list-style-type: none"> • Targeted consultation with receivers within 500 metres; • Ensure the broader area is familiar with the project (Section 5); • Provide details on required leasing/subdivision arrangements (Section 1.1); • Confirm whether EPBC referral required (Section 6.7); • Provide mapping in scoping reports confirming any constraints such as sensitive biodiversity, Aboriginal heritage sites etc (Section 2.3); • Provide details of engagement with Ausgrid, TfNSW, Council, non-associated receivers (Table 3); • Include details of engagement advice to non-associated receivers (Table 3).
AusGrid	Web based portal	<p>Connection enquiry including advice regarding preliminary design of the BESS facility and preliminary response in accordance with chapter 5 of the National Electricity Rules.</p> <p>To confirm there is thermal capacity in the system to facilitate the transfer of power to and from the BESS, preliminary review of system strength, available connection points and determine next steps.</p> <p>Ausgrid confirmed there is sufficient thermal capacity for the BESS to operate at proposed transfer limits under normal operating conditions, no adverse system strength issues</p>

Stakeholder Group	Method	Purpose of Engagement and Consideration within EIS Assessment.
		identified and connection points are available. Projects can progress to detailed response to enquiry.
	<ul style="list-style-type: none"> In Person meetings Phone/VC Emails 	Ongoing discussions with respect to the lease agreement to confirm that an option could be secured by Firm Power to develop on the land and to identify potential need to subdivide Ausgrid confirmed the option had been issued to Firm Power to secure the land to develop the proposed project.
	Web based portal	System planning advice (Ausgrid terminology for investigate works) was sought from Ausgrid to investigate connection options further and to determine preferred arrangement and understand scope of works, cost and program to facilitate the connection. Ausgrid confirmed that upgrades to the substation will be required and preliminary scope determined. This will be further refined through the connection process.
	Web based portal	Detailed response to connection enquiry in accordance with chapter 5 of the National Electricity Rules. The purpose of the engagement was to seek information from Ausgrid to allow appropriate modelling and studies to be performed to allow an application to connect to be lodged. Information expected to be provided as requested and in accordance with the National Electricity rules.
Muswellbrook Shire Council	Via Email	Firm Power has carried out initial engagement with Muswellbrook Shire Council Mayors office and planning team to determine Council's view of the project and identify any issues that would need to be addressed in preparation of the EIS. As a result of the enquiry, a digital meeting was held with Council staff – refer below.
	Digital meeting	Meeting held between Firm Power and Council staff on the 8 October 2021 to determine Council's initial view of the project and identify any issues to be addressed. The following key points were discussed: <ol style="list-style-type: none"> Visual assessment requested and in particular to consider in relation to new bypass. Requested noise assessment. Traffic impact assessment requested. Operational traffic considered to be light, so focus is more on construction traffic. Stormwater assessments needed with a focus on erosion and sediment control. Consideration of community funding. Recommended approach the mine subsidence advisory board.
	Via Email	Council provided information to Firm Power regarding Northview Estate, the approved residential subdivision adjoining

Stakeholder Group	Method	Purpose of Engagement and Consideration within EIS Assessment.
		the site to the west. Council also referred Firm Power to the <i>Muswellbrook Residential and Rural Residential Strategy</i> . Firm Power will consider this development in preparing its EIS.
Subsidence Advisory NSW	Via Email	Engagement with the Subsidence Advisory NSW dated the 9 August 2021 to determine any approval or assessment requirements associated with the project. SA_NSW provided comment on the mapping of the site within the Muswellbrook Mine Subsidence District. Muswellbrook Mine Subsidence District – Guideline 8. No requirements applies to the site. – refer Appendix H .
Regulatory Bodies <ul style="list-style-type: none"> • The Local Aboriginal Land Council; • NSW Rural Fire Service; • Fire and Rescue NSW; • Transport for NSW; • Natural Resource Access Regulator; • Department Primary Industries (Fisheries) • Environment Protection Authority 	Via email	Engagement advice was issued via email to regulatory bodies between the 27 and 29 September, inviting comments to be sent to the project's email address with respect to the project, to inform them of the project and to inform preparation of this scoping report. At the time of writing, no response from these organisations has been received.
Local Community <ul style="list-style-type: none"> • Landcare • Hunter Community Environment Centre • Wilderness Society • Hunter Environmental Institute (HEI) • Hunter Environmental Institute (HEI) 2 cc'd • Sustainability Hub (Operated by Council) 	Via Email	Engagement advice was issued via email to 8 community groups between the 27 and 29 September providing details about the project; to inform them of the project and to inform preparation of this scoping report. At the time of writing, no response from these organisations has been received.
Community and Interested Parties	Dedicated Project website: https://www.firmpower.com.au/muswellbrook	The project website was launched in September 2021. The website provides an overview of the project and Firm Power, detailing the development application process and providing a form allowing visitors encouraging visitors to leave feedback. At the time of writing no feedback or responses have been received via this online form.
Nearby receivers	Notification Letter	A notification letter outlining the project was posted to nearby landholders on 22 September 2021. The purpose of the letter was to introduce the project. The letter outlined the development application process and invited recipients to provide feedback

Stakeholder Group	Method	Purpose of Engagement and Consideration within EIS Assessment.
		<p>regarding the project. Contact details for a dedicated 1800 number, project email address and website were provided. A copy of this notification is provided in Appendix D.</p> <p>At the time of writing this report, no emails or phone calls have been received.</p>
	Doorknocking	<p>On behalf of Firm Power, a Premise staff member travelled to the site on the 27 October 2021 to discuss the project with available surrounding non-associated landowners. A brief outline of the project and likely impacts were discussed. A second information letter, summarising the details of the project, was hand delivered to identified receiver locations during this visit.</p> <p>Of the 41 residential receivers in proximity of the site, Premise was able to speak to 13 of these. Letters were left at those properties where nobody was home.</p> <p>Of the 14 residents spoken to, 12 confirmed no fundamental objections and confirmed they understood the details of the project and how to engage. One receiver made no comment, and one receiver raised a number of questions - discussed in the cell below.</p>
Non-associated receiver	Response to Doorknocking	<p>Concerns/queries:</p> <ol style="list-style-type: none"> 1. Would the project result in a humming sound similar to power stations? 2. Interested to know layout. <p>Response subsequently provided by email:</p> <ol style="list-style-type: none"> 1. <i>As part of the development application for the project, we'll prepare a detailed noise assessment to determine what (if any) noise from the batteries may be audible offsite. Any noise from the batteries would then be minimised and managed to ensure that the project is consistent with the relevant noise guidelines. We'd be happy to keep you informed about the outcomes of our noise assessment as we prepare our development application, and to address any other questions or concerns you have.</i> 2. <i>The batteries would be housed in fully enclosed containers, similar to standard shipping containers. In the coming months we'll complete a range of studies that will feed into the project layout. As we progress the project design, we'd be happy to provide you with more information about what the project will look like.</i>

A record of engagement is provided in **Appendix F**.

Those matters raised will be further addressed through ongoing engagement throughout the EIS process and addressed through detailed analysis in the preparation of the EIS.

5.2 EIS Engagement

Engagement will continue to be undertaken in accordance with the following guidelines:

- *Undertaking Engagement Guidelines for State Significant Projects* (DPIE, 2021);
- *Community Consultative Committee Guidelines State Significant Projects* (DP&E, 2019) – if a Community Consultative Committee is required.

Proposed engagement during preparation of the EIS stage is outlined in **Table 4**.

Table 4 – Proposed EIS consultation

Stakeholder	Purpose	Method
AusGrid	<ul style="list-style-type: none"> To confirm project details, potential subdivision and substation upgrade requirements 	<ul style="list-style-type: none"> Face to face/videoconference Briefing letters/emails
Federal Member for Hunter, Joel Fitzgibbon MP	<ul style="list-style-type: none"> Project details/progress Consultation to inform social impact assessment (SIA) 	<ul style="list-style-type: none"> Face to face/videoconference Briefing letters/emails
State Member for Upper Hunter, Dave Layzell MP;	<ul style="list-style-type: none"> Project details/progress Consultation to inform social impact assessment (SIA) 	<ul style="list-style-type: none"> Face to face/videoconference Briefing letters/emails
Wanaruah Local Aboriginal Land Council	<ul style="list-style-type: none"> Project details/progress Identify cultural values and connection to place 	<ul style="list-style-type: none"> Consultation in accordance with <i>Aboriginal Cultural Heritage Consultation Requirements for Proponents</i> (DECCW, 2010) Newsletters/fact sheets Website feedback form or 1800 number
Department of Planning, Infrastructure and Environment	<ul style="list-style-type: none"> Project details/progress Engagement during EIS preparation Respond to matters arising throughout assessment 	<ul style="list-style-type: none"> Face to face/videoconference Email and phone Briefing letters/emails
Heritage Council of NSW	<ul style="list-style-type: none"> Project details/progress Engagement during EIS preparation Respond to matters arising throughout assessment 	<ul style="list-style-type: none"> Face to face/videoconference Email and phone Briefing letters/emails
Subsidence Advisory NSW	<ul style="list-style-type: none"> Project details/progress Engagement during EIS preparation Respond to matters arising throughout assessment 	<ul style="list-style-type: none"> Face to face/videoconference Email and phone Briefing letters/emails
Rural Fire Service	<ul style="list-style-type: none"> Project details/progress Engagement during EIS preparation Respond to 	<ul style="list-style-type: none"> Face to face/videoconference Email and phone Briefing letters/emails

Stakeholder	Purpose	Method
	matters arising throughout assessment	
Transport for NSW	<ul style="list-style-type: none"> • Project details/progress • Engagement during EIS preparation • Discuss site access requirements and Muswellbrook Bypass • Respond to matters arising throughout assessment 	<ul style="list-style-type: none"> • Face to face/videoconference • Email and phone • Briefing letters/emails
Muswellbrook Shire Council	<ul style="list-style-type: none"> • Project details/progress • Consultation to inform social impact assessment (SIA) • Discuss Northview Estate • Updates on outcomes of assessment reporting 	<ul style="list-style-type: none"> • Face to face/videoconference • Email and phone • Briefing letters/emails
DPIE - Crown Lands	<ul style="list-style-type: none"> • Project details/progress • Engagement during EIS preparation • Discuss site access requirements • Respond to matters arising throughout assessment 	<ul style="list-style-type: none"> • Face to face/videoconference • Email and phone • Briefing letters/emails
Muswellbrook community groups, including Sandy Hollow Progress Association	<ul style="list-style-type: none"> • Project details/progress • Consultation to inform social impact assessment (SIA) • Updates on outcomes of assessment reporting • Opportunities to provide feedback during application preparation • Details of how residual impacts would be mitigated 	<ul style="list-style-type: none"> • Face to face/videoconference • Email and phone • Newsletters and factsheets • Website information/forms • 1800 number
Ongoing engagement with nearby unassociated residential receivers	<ul style="list-style-type: none"> • Project details/progress • Consultation to inform social impact assessment (SIA) • Updates on outcomes of assessment reporting • Opportunities to provide feedback during application preparation • Details of how residual impacts would be mitigated 	<ul style="list-style-type: none"> • Face to face/videoconference • Email and phone • Newsletters and factsheets • Website information/forms • 1800 number

6. PROPOSED ASSESSMENT OF IMPACTS

6.1 Introduction

An initial review of information has been completed to provide a summary of matters requiring assessment at EIS preparation stage and the level of assessment required for each issue. By reference to the DPIE Scoping Report Guidelines (DPIE 2021), a number of factors have been considered through this process, including:

- the scale and nature of the likely impact of the project and the sensitivity of the receiving environment;
- whether the project is likely to generate cumulative impacts with other relevant future projects in the area; and
- the ability to avoid, minimise and/or offset the impacts of the project, to the extent known at the scoping phase.

The following sections provide details on specific assessment areas. A summary table is provided at **Appendix A** categorising these areas as per the Scoping Report Guidelines. The level of assessment identified for each impact is summarised as follows:

- Detailed:
 - Social impacts
- Standard
 - Land Use
 - Heritage
 - Hydrogeology
 - Biodiversity
 - Bushfire
 - Access and traffic
 - Visual impacts
 - Noise and Vibration
 - Air quality
 - Waste
 - Hazard

6.2 Social Impact

The site is located within the MSC LGA which has a population of 16,086 as at 2016. The LGA is highly productive with an unemployment rate of 3.74%, significantly lower than the 2016 NSW average of 4.99%. The largest employer is mining which supports 1,503 jobs, followed by retail, health care and social assistance and agriculture, forestry and fishing which support 557, 527 and 424 jobs respectively.

The town of Muswellbrook accommodates the majority of residents of the LGA with a population of 12,072 people. Muswellbrook has an unemployment rate of 4.32%. Consistent with the broader LGA, the majority of residents work in mining, followed by retail trade, health care and social assistance and accommodation and food services.

A Social Impact Assessment will be provided as part of the EIS in accordance with the *Social Impact Assessment Guidelines for State Significant Precincts 2021* (DPIE 2021). The Social Impact Assessment will be proportionate

with the scale, complexity and likely impacts and benefits of the project. A Social Impact Assessment Scoping Worksheet has been prepared in accordance with the Guideline and is provided in **Appendix I**.

6.3 Land Use

6.3.1 MINING

The site is located within a Mine Subsidence Area - Muswellbrook. In accordance with the Subsidence Advisory NSW (SA NSW) approval, Guideline 8 indicates that no restrictions apply to this site. This is confirmed by initial engagement with SA NSW (refer **Appendix H**) and ongoing engagement would ensure that assessment requirements are confirmed and addressed as part of the EIS.

The site is surrounded by active mining titles, however neither the subject development site nor development area intersect these titles.

6.3.2 OTHER USES

The compatibility of the proposed project with the surrounding land uses, including consideration of the surrounding land uses zones and existing uses would be completed, including a Land Use Conflict Risk Assessment in accordance with the Department of Industry's *Land Use Conflict Risk Assessment Guide*.

In particular, in preparing its EIS, Firm Power will consider:

- Northview Estate, the approved residential subdivision adjoining the site to the west and Council's *Muswellbrook Residential and Rural Residential Strategy*; and
- the New England Highway Muswellbrook Bypass located to the east of the proposed BESS and existing substation.

6.4 Heritage

Whilst the site is not identified as being or adjoining an item of Aboriginal or European heritage significant or within a heritage conservation area under the MLEP:

- Locally significant Muswellbrook Brick Works (MLEP Item No. I112) is located approximately 140 metres to the east of the site, within the Muswellbrook Quarry lands; and
AHIMS Basic Search on 30 August 2021 identified 17 Aboriginal sites within a 1-kilometre buffer of the site (refer to **Figure 7** and **Appendix C**).

Accordingly, an assessment of heritage impacts, and an Aboriginal Cultural Heritage Assessment is to be provided as part of the EIS, identifying potential impacts and necessary management and mitigation measures.

6.5 Hydrogeology

The proposed development is unlikely to impact groundwater due to not requiring extraction of groundwater, 3.9 to 9.8 metre standing water level at the nearest cluster of groundwater boreholes two kilometres to the south-west of the site (located at lower elevation and closer to the Hunter River), minimal anticipated depth of construction and stormwater management measures to be detailed as part of the EIS.

The suitability of the ground conditions for the proposed development and any potential for contamination associated with the history of agricultural use are to be addressed in a Geotechnical Report and Preliminary (Site) Contamination Investigation to be provided as part of the EIS. Management of soil and water impacts during construction would be addressed in the EIS and a Construction Management Plan.

As shown in **Figure 9**, two unnamed tributaries of Sandy Creek occur and merge in the northern portion of the site before crossing the western boundary. Accordingly, a the EIS would include an assessment and proposed management measures to ensure that the proposed BESS has a neutral or beneficial effect on water quality and quantity.

The EIS will also include consideration of water use during construction and operation of the project, including identifying water sources.

6.6 Land Resources

The proposed BESS is to be constructed within Class 5 soil capability land which does not have a history of agricultural use and is reserved for the purposes of a classified road, ensuring that there will not be any loss of valuable agricultural land as a consequence of the proposed development. The development area is well clear of mapped BSAL areas.

6.7 Biodiversity

The project will require a Biodiversity Development Assessment Report (BDAR) assessing impacts to biodiversity in accordance with the NSW *Biodiversity Conservation Act 2016*.

If deemed appropriate, a streamlined assessment-small area module BDAR will be prepared, in accordance with the BAM, to accompany the development assessment application. Under this assessment method targeted surveys will only be performed for species listed as at risk of Serious and irreversible Impact (SAII) under the BAM.

Given the disturbed nature of the development area, Commonwealth referral is not anticipated.

6.8 Bushfire

As shown in **Figure 12**, the site contains vegetation in the north-eastern corner and southern portion of the site identified as Vegetation Category 1, with the remainder of the site identified as Vegetation Category 3. An assessment of bushfire impacts is to be provided as part of the EIS.

6.9 Access and Traffic

As shown in **Figure 3**, the proposed BESS is to be constructed on the western side of the existing substation, ensuring that it will not prevent the construction of the New England Highway Muswellbrook Bypass which, as identified in the *New England Highway Muswellbrook Bypass Options Report* (RMS 2018), is to take an alignment to the east of the substation in all four options considered.

Anticipated vehicular movements generated during the installation phase and subsequent operation phase of the proposed BESS and the capacity of the surrounding road network to accommodate those movements are to be addressed in the Traffic Impact Assessment to be provided as part of the EIS.

Materials are anticipated to be transported to the site from Port Botany or the Port of Newcastle via the route shown in **Figure 13**. The construction vehicle haulage route would be considered further in the Traffic Impact Assessment to be provided as part of the EIS.

6.10 Visual Impact

The proposed development site is located in a relatively well visually shielded location, with topography and vegetation to the west providing a visual barrier to non-related receivers in this direction. It's colocation with the existing substation ensures that views would not be radically altered.

Notwithstanding the above, a Visual Impact Assessment to be provided as part of the EIS. The Visual Impact Assessment will include an assessment of the likely visual and landscape impacts of the project (including glare, reflectivity and night lighting) on surrounding residences, scenic or significant vistas, air traffic and road corridors in the public domain. The assessment will also consider the cumulative visual impact of the proposed BESS with the adjacent substation. Where relevant, it will include mitigation measures to help reduce the project's impacts on visual amenity.

6.11 Noise and Vibration

Given the project's setting, background noise at nearby sensitive receivers is likely to be dominated by noise associated with nearby mining operations, vehicular movements along the New England Highway and train movements along the Main Northern Line.

Noise and vibration impacts are expected to occur during both construction and operation of the project. In relation to construction activities this would include preparatory earthworks, delivery, and assembly of the BESS infrastructure. During operation this would include operation of the BESS and noise from associated vehicles.

The potential noise and vibration impact of the construction and operation BESS on nearby sensitive receivers would be considered in a Noise and Vibration Impact Assessment to be provided as part of the EIS. The Noise and Vibration Impact Assessment will be prepared in accordance with the:

- NSW Interim Construction Noise Guideline (DECC 2009);
- NSW Noise Policy for Industry (EPA 2017);
- NSW Road Noise Policy (DECCW 2011); and
- Assessing Vibration: A Technical Guideline (DECC 2006).

6.12 Air Quality

Air quality impacts arising from dust generation and vehicle emissions during construction are to be assessed as part of the Air Quality Impact Assessment to be provided as part of the EIS and managed in accordance with a Construction Management Plan.

6.13 Waste

The likely waste generation associated with the proposed BESS, to be assessed as part of the Waste Management Plan and managed in accordance with a Construction Management Plan to be provided as part of the EIS, would mainly occur during the construction stage. Waste generated may include green waste from cleared vegetation, construction materials, general waste from site personnel and spoil. Waste generated during the operation of the proposed BESS is expected to be minimal. Most battery components are expected to be readily recyclable at end of life.

6.14 Hazard

Lithium batteries are identified as Class 9 under the *Australian Dangerous Goods Code* (National Transport Commission 2020). Under the *Hazardous and Offensive Development Application Guidelines – Applying SEPP*

33 (Department of Planning 2011) given effect under Section 8 of *State Environmental Planning Policy No 33 – Hazardous and Offensive Development*, Class 9 goods do not exceed the screening thresholds as they “pose little threat to people or property” (Department of Planning 2011, p. 33). Nevertheless, a perception exists that a BESS may alter the EMF within a locality and thereby cause harm to residents and the environment. Accordingly, a Preliminary Hazard Analysis (PHA) is to be provided as part of the EIS. The PHA will consider EMF and fire risks.

6.15 Cumulative Impact

A review of public record information for large scale projects with the potential to generate cumulative impacts within 10 kilometres of the site identifies:

- There are no known existing BESS developments;
- Nearest major project developments at various stages of approval are set out in **Table 5**.

The proposed development is sufficiently separated from the nearest proposed BESS developments and non-BESS SSD developments as to not result in any cumulative impacts. There is the potential for cumulative visual and noise impacts of the project and the Beresfield substation.

Further analysis of the potential for cumulative impacts would be addressed in detail in the EIS in accordance with *Guidelines for State Significant Projects* (DPIE 2021), including the potential for cumulative impacts associated with the adjacent substation.

Table 5 – Nearest major projects within 10 kilometres of the site

Location:	Stage:	Distance (Direction) from Site:
Muswellbrook Landfill	Prepare EIS	290 metres (east)
Richard Gill School	Determined – 2020	3.7 kilometres (south)
Mount Pleasant – Extension of Life of Open Cut Operation	Additional Information Requested	8.8 kilometre (west)
Bowmans Creek Wind Farm	Additional Information Requested	10 kilometres (west)

7. REFERENCES

Table 6 – References

References
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<http://www.environment.nsw.gov.au/heritageapp/heritagesearch.aspx#amapsearch> [Accessed 30 August 2021].



APPENDIX A

SCOPING REPORT SUMMARY TABLE

Level of Assessment	Matter	CIA	Engagement	Relevant Government Plans, Policies and Guidelines	Scoping Report Reference
Detailed	Social Impact	Y	Specific	Social Impact Assessment Guidelines for State Significant Projects (Department of Planning Industry and Environment, 2021) Environmental Planning and Impact Assessment Practice Note: Socio-economic Assessment (Roads and Maritime Services, 2013).	6.2
Standard	Land Use	N	Specific	Surface Development Guideline 5 – Active Mining Areas – Moderate Predicted Subsidence Impact (Subsidence Advisory NSW, 2018) Development Application – Merit Assessment Policy (Subsidence Advisory NSW, 2018) <i>Muswellbrook Residential and Rural Residential Strategy</i> Department of Industry's <i>Land Use Conflict Risk Assessment Guide</i>	6.3
Standard	Heritage	N	Specific	NSW Skeletal Remains: Guidelines for Management of Human Remains (Heritage Office, 1998) Criteria for the Assessment of Excavation Directors (NSW Heritage Council, 2011).	6.4
Standard	Hydrogeology	Y	Specific	Acid Sulphate Soils Assessment Guidelines (Department of Planning, 2008) Managing Land Contamination: Planning Guidelines SEPP 55 – Remediation of Land (Department of Urban Affairs and Planning and Environment Protection Authority, 1998) Managing Urban Stormwater: Soils and Construction Volume 1 (Landcom, 2004) Managing Urban Stormwater: Soils and Construction Volume 2 (Department of Environment and Climate Change, 2008) Approved Methods for the Sampling and Analysis of Water Pollutants in NSW (Department of Environment and Climate Change, 2008) Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC / ARMCANZ, 2000) Using the ANZECC Guidelines and Water Quality Objectives in NSW (Department of Environment and Conservation, 2006)	6.5

				Managing Urban Stormwater: Soils and Construction Volume 1 (Landcom 2004) and Volume 2 (A. Installation of Services; B. Waste Landfills; C. Unsealed Roads; D. Main Roads; E. Mines and Quarries) (DECC 2008) NSW Government's Floodplain Development Manual (2005)	
Standard	Biodiversity	Y	Specific	Refer to Section 6.4 of the Scoping Report.	6.6
Standard	Bushfire	N	Specific	Planning for Bushfire Protection 2019	6.7
Standard	Access and Traffic	Y	Specific	Guide to Traffic Management – Part 3 Traffic Studies and Analysis (Austroads, 2013) Guide to Traffic Generating Developments Version 2.2 (RTA, 2002)	6.8
Standard	Visual Impact	Y	General	Refer to Section 6.7 of the Scoping Report.	6.9
Standard	Noise and Vibration	Y	General	Construction Noise Strategy (Transport for NSW, 2012) Interim Construction Noise Guideline (Department of Environment, Climate Change and Water, 2009) NSW Industrial Noise Policy (Environment Protection Authority, 2000) NSW Road Noise Policy (Environment Protection Authority, 2011) Assessing Vibration: A Technical Guideline (Department of Environment and Conservation, 2006) German Standard DIN 4150-3: Structural Vibration – Effects of Vibration on Structures Environmental Noise Management Assessing Vibration: A Technical Guideline (Department of Environment and Conservation, 2006) Technical Basis for Guidelines to Minimise Annoyance due to Blasting Overpressure and Ground Vibration (Australian and New Zealand Environment Council, 1990).	6.10
Standard	Air Quality	Y	General	The Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (EPA 2016) NSW's Sustainable Design Guidelines (Version 3.0) (Transport for NSW, 2013) Greenhouse Gas Inventory Guide for Construction Projects (Transport for NSW, 2012).	6.11

Standard	Waste	N	General	Waste Classification Guidelines (DECCW, 2009)	6.12
Standard	Hazard	N	General	<p>Hazardous and Offensive Development Application Guidelines: Applying SEPP 33 (DoP 2011)</p> <p>International Standard (ISO / IEC 31010) Risk Management – Risk Assessment Technique</p> <p>Australian Code for the Transport of Dangerous Goods by Road and Rail (7th edition) (National Transport Commission, 2007)</p> <p>Storage and Handling of Dangerous Goods Code of Practice (WorkCover, 2005).</p> <p>Hazardous Industry Planning Advisory Paper No. 6 – Guideline for Hazard Analysis (DoP, 2011) and Multi-Level Risk Assessment (DoP, 2011)</p>	6.13



APPENDIX B

PROTECTED MATTERS SEARCH TOOL (PMST) RESULT

Summary

Matters of National Environmental Significance

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

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance:	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	5
Listed Threatened Species:	34
Listed Migratory Species:	14

Other Matters Protected by the EPBC Act

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

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

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

Commonwealth Land:	7
Commonwealth Heritage Places:	1
Listed Marine Species:	20
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None

Extra Information

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

State and Territory Reserves:	None
Regional Forest Agreements:	1
Invasive Species:	32
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar)		[Resource Information]
Name	Proximity	
Hunter estuary wetlands	50 - 100km upstream	

Listed Threatened Ecological Communities [Resource Information]

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

Name	Status	Type of Presence
Central Hunter Valley eucalypt forest and woodland	Critically Endangered	Community likely to occur within area
Hunter Valley Weeping Myall (Acacia pendula) Woodland	Critically Endangered	Community may occur within area
Lowland Rainforest of Subtropical Australia	Critically Endangered	Community likely to occur within area
River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria	Critically Endangered	Community may occur within area
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community likely to occur within area

Listed Threatened Species [Resource Information]

Name	Status	Type of Presence
Birds		
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Foraging, feeding or related behaviour likely to occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Erythrorhynchus radiatus Red Goshawk [942]	Vulnerable	Species or species habitat likely to occur within area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat likely to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area

Name	Status	Type of Presence
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Polytelis swainsonii Superb Parrot [738]	Vulnerable	Species or species habitat may occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Frogs		
Heleioporus australiacus Giant Burrowing Frog [1973]	Vulnerable	Species or species habitat may occur within area
Litoria aurea Green and Golden Bell Frog [1870]	Vulnerable	Species or species habitat may occur within area
Litoria booroolongensis Booroolong Frog [1844]	Endangered	Species or species habitat may occur within area
Mammals		
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat known to occur within area
Dasyurus maculatus maculatus (SE mainland population) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat known to occur within area
Nyctophilus corbeni Corben's Long-eared Bat, South-eastern Long-eared Bat [83395]	Vulnerable	Species or species habitat likely to occur within area
Petauroides volans Greater Glider [254]	Vulnerable	Species or species habitat may occur within area
Petrogale penicillata Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat likely to occur within area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT) Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Vulnerable	Species or species habitat known to occur within area
Pseudomys novaehollandiae New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat likely to occur within area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Plants		
Androcalva procumbens [87153]	Vulnerable	Species or species habitat likely to occur within area
Cynanchum elegans White-flowered Wax Plant [12533]	Endangered	Species or species habitat may occur within area
Dichanthium setosum bluegrass [14159]	Vulnerable	Species or species habitat likely to occur within area
Eucalyptus glaucina Slaty Red Gum [5670]	Vulnerable	Species or species

Name	Status	Type of Presence
Euphrasia arguta [4325]	Critically Endangered	habitat known to occur within area Species or species habitat may occur within area
Pomaderris brunnea Rufous Pomaderris, Brown Pomaderris [16845]	Vulnerable	Species or species habitat may occur within area
Prasophyllum sp. Wybong (C.Phelps ORG 5269) a leek-orchid [81964]	Critically Endangered	Species or species habitat may occur within area
Pterostylis gibbosa Illawarra Greenhood, Rufa Greenhood, Pouched Greenhood [4562]	Endangered	Species or species habitat may occur within area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat may occur within area
Tylophora linearis [55231]	Endangered	Species or species habitat may occur within area

Reptiles

Aprasia parapulchella Pink-tailed Worm-lizard, Pink-tailed Legless Lizard [1665]	Vulnerable	Species or species habitat likely to occur within area
Delma impar Striped Legless Lizard, Striped Snake-lizard [1649]	Vulnerable	Species or species habitat known to occur within area

Listed Migratory Species

[Resource Information]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area

Migratory Terrestrial Species

Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat likely to occur within area

Migratory Wetlands Species

Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species

Name	Threatened	Type of Presence
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	habitat may occur within area Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Commonwealth Land [\[Resource Information \]](#)

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

Name
Commonwealth Land - Commonwealth Land - Australian Postal Commission Commonwealth Land - Australian Telecommunications Commission Commonwealth Land - Commonwealth Bank of Australia Commonwealth Land - Commonwealth Trading Bank of Australia Commonwealth Land - Defence Housing Authority Defence - MUSWELLBROOK GRES DEPOT

Commonwealth Heritage Places [\[Resource Information \]](#)

Name	State	Status
Historic Muswellbrook Post Office	NSW	Listed place

Listed Marine Species [\[Resource Information \]](#)

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Birds Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within

Name	Threatened	Type of Presence area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Chrysococcyx osculans Black-eared Cuckoo [705]		Species or species habitat likely to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat likely to occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat likely to occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat likely to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat may occur within area

Extra Information

Regional Forest Agreements

[[Resource Information](#)]

Note that all areas with completed RFAs have been included.

Name	State
North East NSW RFA	New South Wales

Invasive Species

[[Resource Information](#)]

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resources Audit, 2001.

Name	Status	Type of Presence
Birds		
Acridotheres tristis Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
Alauda arvensis Skylark [656]		Species or species habitat likely to occur within area
Carduelis carduelis European Goldfinch [403]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Turdus merula Common Blackbird, Eurasian Blackbird [596]		Species or species habitat likely to occur within area
Frogs		
Rhinella marina Cane Toad [83218]		Species or species habitat likely to occur within area
Mammals		
Bos taurus Domestic Cattle [16]		Species or species habitat likely to occur within area
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Feral deer Feral deer species in Australia [85733]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Lepus capensis Brown Hare [127]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus norvegicus Brown Rat, Norway Rat [83]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Asparagus plumosus Climbing Asparagus-fern [48993]		Species or species habitat likely to occur within area
Chrysanthemoides monilifera Bitou Bush, Boneseed [18983]		Species or species habitat likely to occur within area
Genista sp. X Genista monspessulana Broom [67538]		Species or species habitat may occur within area
Lantana camara Lantana, Common Lantana, Kamara Lantana, Large-leaf Lantana, Pink Flowered Lantana, Red Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage [10892] Lycium ferocissimum African Boxthorn, Boxthorn [19235]		Species or species habitat likely to occur within area
Opuntia spp. Prickly Pears [82753]		Species or species habitat likely to occur within area
Pinus radiata Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]		Species or species habitat may occur within area
Rubus fruticosus aggregate Blackberry, European Blackberry [68406]		Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]		Species or species habitat likely to occur within area
Salvinia molesta Salvinia, Giant Salvinia, Aquarium Watermoss, Kariba Weed [13665]		Species or species habitat likely to occur within area
Senecio madagascariensis Fireweed, Madagascar Ragwort, Madagascar Groundsel [2624]		Species or species habitat likely to occur

Name	Status	Type of Presence
Tamarix aphylla Athel Pine, Athel Tree, Tamarisk, Athel Tamarisk, Athel Tamarix, Desert Tamarisk, Flowering Cypress, Salt Cedar [16018]		within area Species or species habitat likely to occur within area

Caveat

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

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

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

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

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

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

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

- migratory and
- marine

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

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

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

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

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

Coordinates

-32.24543 150.91136

Acknowledgements

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

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

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

Please feel free to provide feedback via the [Contact Us](#) page.



APPENDIX C

AHIMS SEARCH RESULT



AHIMS Web Services (AWS)

Search Result

Your Ref/PO Number : Muswellbrook BESS

Client Service ID : 617992

Premise Australia Pty Ltd

Date: 30 August 2021

154 Peisley Street

Orange New South Wales 2800

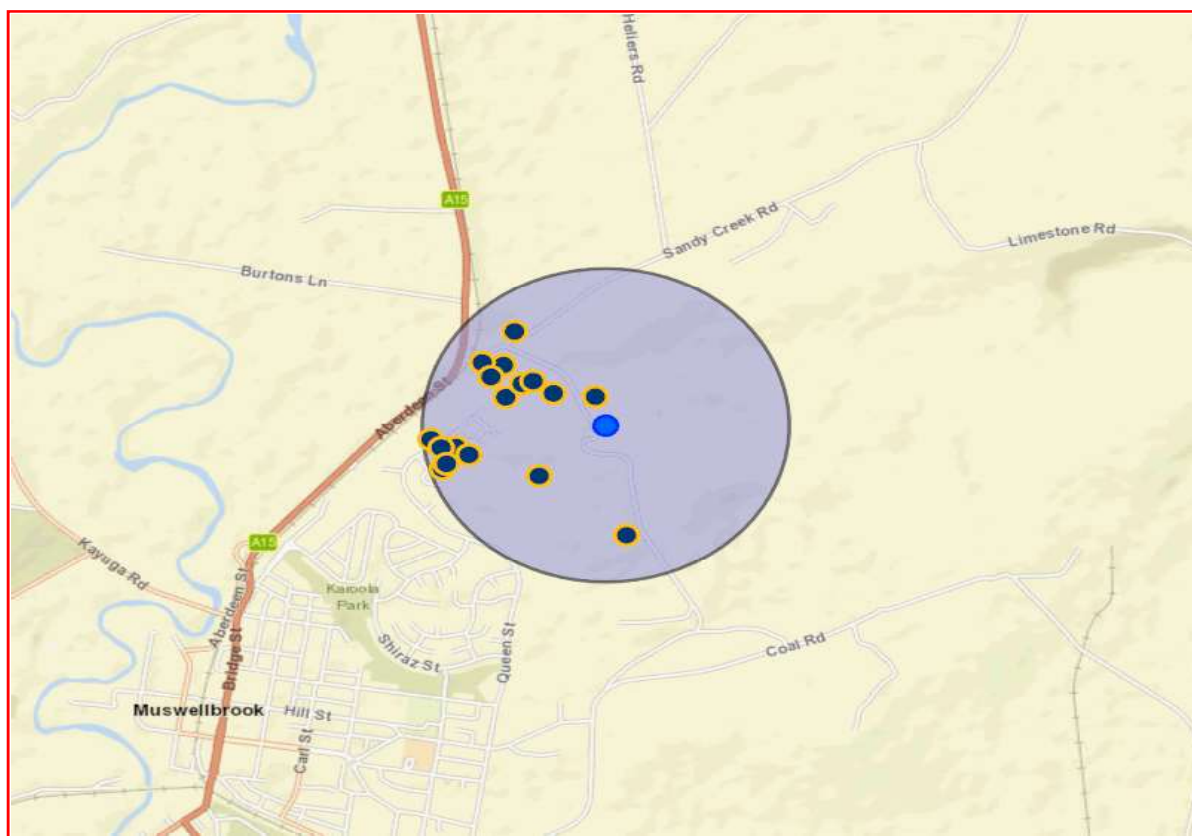
Attention: Mark Raikhman

Email: mark.raikhman@premise.com.au

Dear Sir or Madam:

**AHIMS Web Service search for the following area at Address : 20-24 SANDY CREEK ROAD
MUSWELLBROOK 2333 with a Buffer of 1000 meters, conducted by Mark Raikhman on 30 August 2021.**

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



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

17	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) (<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 to 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.



APPENDIX D

COMMUNITY ENGAGEMENT LETTERS

Wednesday, September 22, 2021

Dear Resident,

A BATTERY ENERGY STORAGE SYSTEM PROPOSAL FOR MUSWELLBROOK

We are writing to tell you about a proposal for a Battery Energy Storage System (BESS) in your local area that is being developed by Firm Power.

Firm Power is an Australian owned grid flexibility company dedicated to delivering solutions that provide stability to a clean energy driven power system. Firm Power is committed to ensuring that energy supply and demand can be dynamically balanced, creating a more flexible electricity grid and allowing for continued renewable energy integration and power price reduction. Firm Power aim to ensure that their projects benefit the community, the environment and the economy.

Firm Power is proposing to build a Battery Energy Storage System BESS in Muswellbrook, on approximately 1.5 hectares of land located at 20-24 Sandy Creek Road adjacent to the existing Ausgrid Muswellbrook Substation. The proposed BESS System includes a 100-megawatt (MW) stand-alone battery that will be used to store and provide power to the local energy grid.

The proposal is in the early stages and we want to work closely with the community as we develop this important project. As we progress through each stage of local and state government approval processes, we will provide more detailed information about the project and invite you to ask questions and provide feedback on the proposal.

We will soon be making a request to the Department of Planning, Industry and Environment for the Secretary's Environmental Assessment Requirements (SEARs), which will specify what approvals are required for this proposal. The Department will publish the SEARs on their website once they have reviewed our request.

When the SEARs have been received, we will hold information sessions for the local community where you will be able to talk to members of our team, ask questions and provide your feedback.

In the meantime, you can contact us on 1800 749 338, by email at muswellbrook@firmpower.com.au or visit our website at <https://www.firmpower.com.au/muswellbrook>.

We understand the importance of keeping the local community informed and we look forward to talking to you more about this exciting project.

Kind Regards,

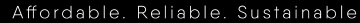





Nick Rose
GENERAL MANAGER

Suite 6, Level 6, 201 Kent St Sydney NSW 2000

W www.firmpower.com.au

E info@firmpower.com.au



 BESS Development Site
 Proposed Bypass Route
 Proposed Bypass Route
 Proposed Bypass Route
 Proposed Bypass Route
 Proposed Bypass Route

Wednesday, October 27, 2021

Dear Resident,

A BATTERY ENERGY STORAGE SYSTEM PROPOSAL FOR MUSWELLBROOK

We last wrote to you on 22 September 2021 about the above proposed project.

Firm Power is planning to build a Battery Energy Storage System BESS in Muswellbrook, on approximately 2.5 hectares of land located at 20-24 Sandy Creek Road adjacent to the existing Ausgrid Muswellbrook Substation. Following a review of project constraints and in consultation with Ausgrid, the initial capacity of the BESS system has changed from 100 megawatt (MW) to 150 MW. The BESS will be used to store and provide power to the local energy grid. The proposed facility now has a BESS investigation area approximately 1.3 hectares larger than the original footprint.

A representative of Firm Power visited today to discuss the project with you; sorry we missed you.

We visited to make sure that you received our first letter and to confirm that you understand how to get in touch with us about the project.

Since we last wrote to you, we have met with the Department Planning, Industry and Environment have agreed that the project is a State Significant Project and that we can proceed to prepare a scoping report.

We are targeting issuing the scoping report to the Department in early November. The scoping report supports a request for the Secretary's Environmental Assessment Requirements (SEARs), which will specify what approvals are required for this proposal. The Department will publish the SEARs on their website once they have reviewed our request.

When the SEARs have been received, we will hold information sessions for the local community where you will be able to talk to members of our team, ask questions and provide your feedback.

In the meantime, if you have any questions or wish to provide feedback, please do not hesitate to contact us. You can contact us on 1800 749 338, by email at muswellbrook@firmpower.com.au or visit our website at <https://www.firmpower.com.au/muswellbrook>.

We understand the importance of keeping the local community informed and we look forward to talking to you more about this exciting project.

Kind Regards,

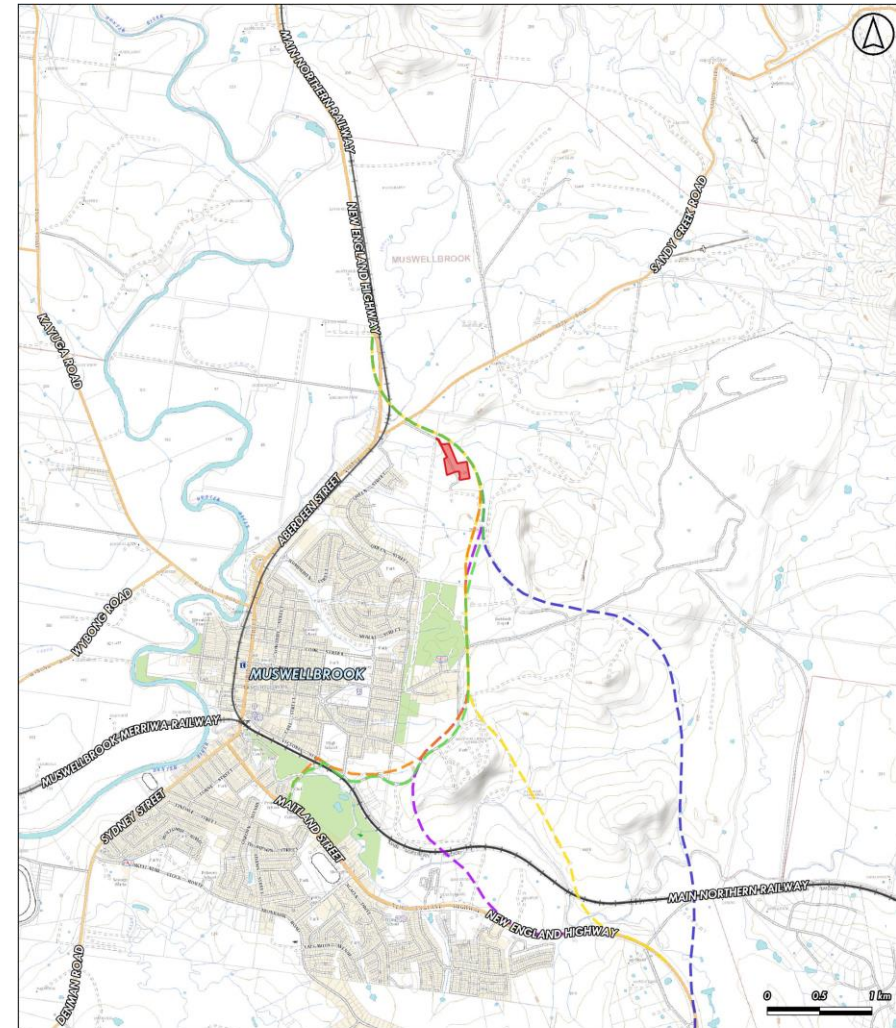
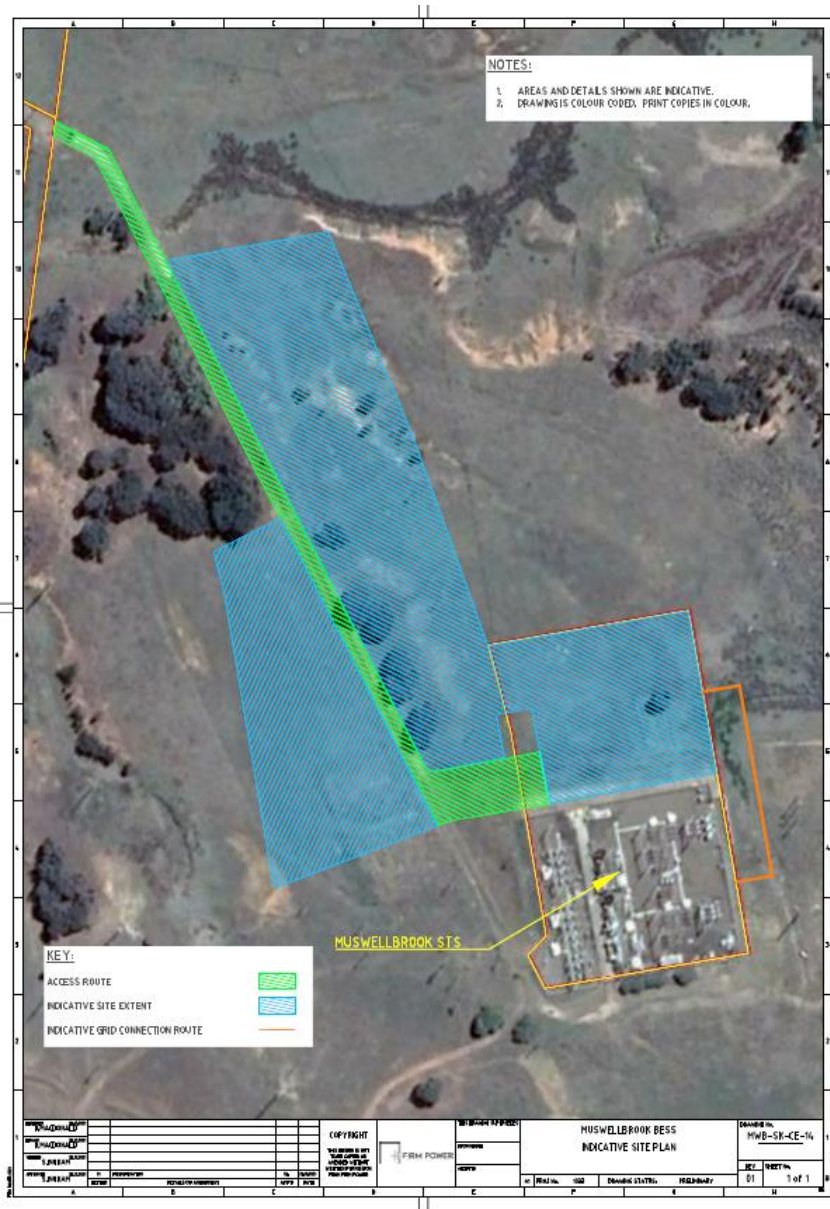


Nick Rose
GENERAL MANAGER

Suite 6, Level 6, 201 Kent St Sydney NSW 2000

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E info@firmpower.com.au



- LEGEND**
- BESS Development Site
 - Proposed Bypass Route
 - Proposed Bypass Route
 - Proposed Bypass Route
 - Proposed Bypass Route
 - Proposed Bypass Route



APPENDIX E

REGULATORY BODY AND COMMUNITY GROUP ENGAGEMENT LETTER

Friday, September 24, 2021

To whom it may concern,

A BATTERY ENERGY STORAGE SYSTEM PROPOSAL FOR MUSWELLBROOK

We are writing to tell you about a proposal for a Battery Energy Storage System (BESS) in your local area that is being developed by Firm Power.

Firm Power is an Australian owned grid flexibility company dedicated to delivering solutions that provide stability to a clean energy driven power system. Firm Power is committed to ensuring that energy supply and demand can be dynamically balanced, creating a more flexible electricity grid and allowing for continued renewable energy integration and power price reduction. Firm Power aim to ensure that their projects benefit the community, the environment and the economy.

Firm Power is proposing to build a Battery Energy Storage System BESS in Muswellbrook, on approximately 1.5 hectares of land located at 20-24 Sandy Creek Road adjacent to the existing Ausgrid Muswellbrook Substation. The proposed BESS System includes a 100-megawatt (MW) stand-alone battery that will be used to store and provide power to the local energy grid. The indicative extent of the development is located to the North of the existing Ausgrid Muswellbrook Substation.

The proposal is in the early stages and we want to work closely with you as we develop this important project.

We will soon be making a request to the Department of Planning, Industry and Environment for the Secretary's Environmental Assessment Requirements (SEARs), which will specify what approvals are required for this proposal. The Department will publish the SEARs on their website once they have reviewed our request.

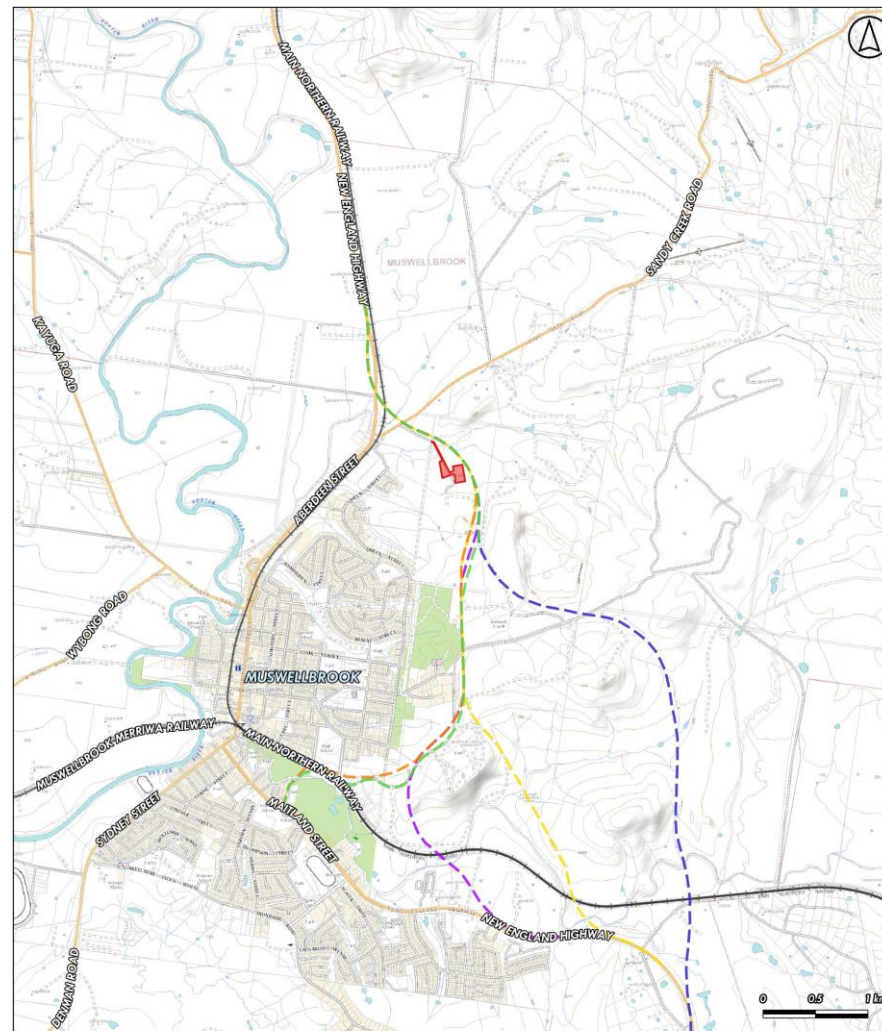
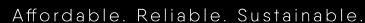
When the SEARs have been received, further engagement with key stakeholders will occur.

If you have any comments regarding this project, please respond in writing to muswellbrook@firmpower.com.au.

Kind Regards,



Nick Rose
GENERAL MANAGER



 BESS Development Site
 Proposed Bypass Route
 Proposed Bypass Route
 Proposed Bypass Route
 Proposed Bypass Route
 Proposed Bypass Route

Friday, September 24, 2021

To whom it may concern,

A BATTERY ENERGY STORAGE SYSTEM PROPOSAL FOR MUSWELLBROOK

We are writing to tell you about a proposal for a Battery Energy Storage System (BESS) in your local area that is being developed by Firm Power.

Firm Power is an Australian owned grid flexibility company dedicated to delivering solutions that provide stability to a clean energy driven power system. Firm Power is committed to ensuring that energy supply and demand can be dynamically balanced, creating a more flexible electricity grid and allowing for continued renewable energy integration and power price reduction. Firm Power aim to ensure that their projects benefit the community, the environment and the economy.

Firm Power is proposing to build a Battery Energy Storage System BESS in Muswellbrook, on approximately 1.5 hectares of land located at 20-24 Sandy Creek Road adjacent to the existing Ausgrid Muswellbrook Substation. The proposed BESS System includes a 100-megawatt (MW) stand-alone battery that will be used to store and provide power to the local energy grid.

A review of the DPIE Water Management (General) Regulation 2018-hydroline spatial data has identified that the proposed development is within proximity to tributaries of Sandy Creek. Sandy Creek is located to the north-east and flows generally south towards the Hunter Rive the northern side of Awaba Road. Tributaries within proximity are located to the north of the development and flow eastwards to connect to Sandy Creek.

The indicative extent of the development is located to the North of the existing Ausgrid Muswellbrook Substation. Although the project is state significant development (SSD) and therefore not subject to requirements of a CAA, it should be noted that development is not anticipated to result in any significant impacts to surface or ground water.

The proposal is in the early stages and we want to work closely with NRAR as we develop this important project.

We will soon be making a request to the Department of Planning, Industry and Environment for the Secretary's Environmental Assessment Requirements (SEARs), which will specify what approvals are required for this proposal. The Department will publish the SEARs on their website once they have reviewed our request.

When the SEARs have been received, further engagement with key stakeholders will occur.

If you have any comments regarding this project, please respond in writing to muswellbrook@firmpower.com.au.

Kind Regards,

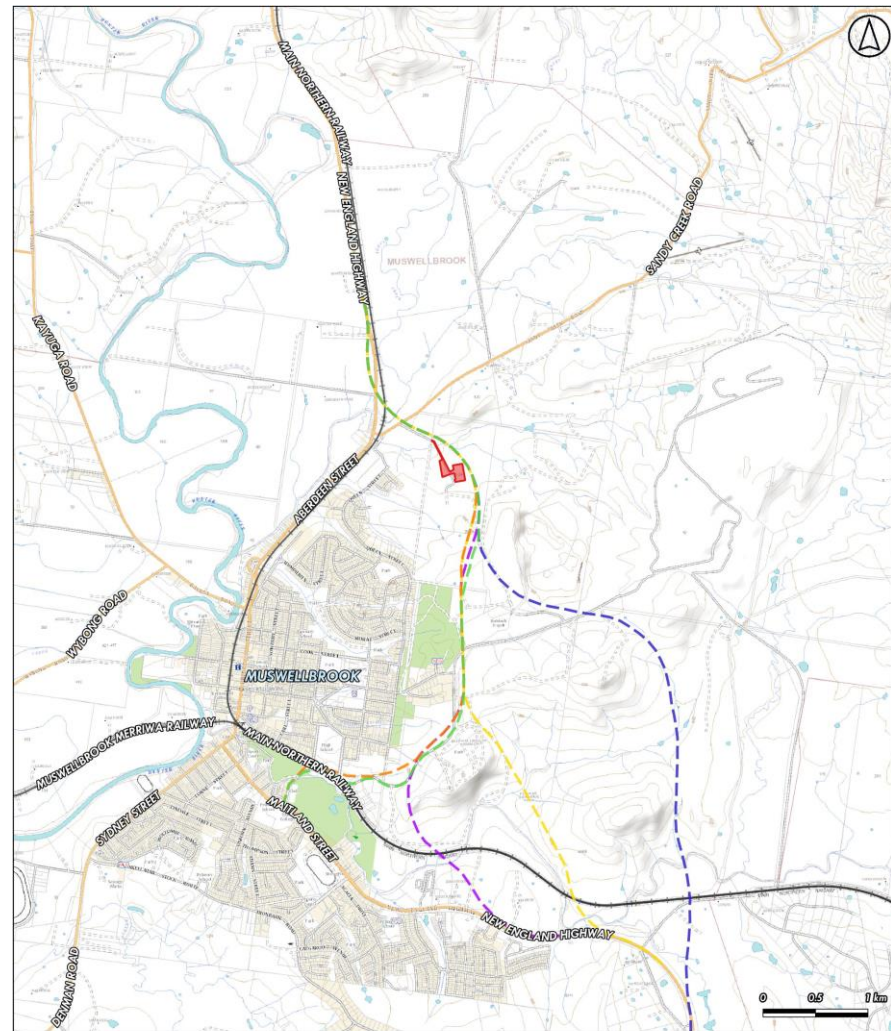


Nick Rose
GENERAL MANAGER

Suite 6, Level 6, 201 Kent St Sydney NSW 2000

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E info@firmpower.com.au





APPENDIX F

ENGAGEMENT REGISTER

Community Groups and Regulators

Name	Type	Email	Reason For Engagment	Send Date	Format
Head Office NSW Aboriginal Land Council	NSW ALC	workplace@alc.org.au	Within LALC area	27/09/2021	Email
Wanaruah Local Aboriginal Land Council	LALC	admin@wanaruahlandcouncil.com.au	Within LALC area	27/09/2021	Email
RFS NSW (General Enquiries)	RFS	webmaster@rfs.nsw.gov.au	Proximity to bushfire prone land.	27/09/2021	Email
RFS NSW (Planning and Environment Services Service)	RFS	customerservice.centre@rfs.nsw.gov.au	Proximity to bushfire prone land.	27/09/2021	Email
Fire and Rescue NSW (General enquiries)	Fire and Rescue NSW	info@fire.nsw.gov.au	Proximity to bushfire prone land.	27/09/2021	Email
Fire and Rescue NSW Advised Department	Fire and Rescue NSW	firesafety@fire.nsw.gov.au	Proximity to bushfire prone land.	27/09/2021	Email
Transport for NSW (Development Dept.)	Regulator	development.sydney@transport.nsw.gov.au	Potential to impact transport Network.	27/09/2021	Email
Natural Resource Access Regulator (NRAR)	Regulator	landuse.enquiries@dpie.nsw.gov.au	Proximity to waterfront land.	28/09/2021	Email
DPI (Fisheries) (General Enquiries)	Regulator	information-advisory@dpi.nsw.gov.au	Proximity of mapped key fish habitat.	27/09/2021	Email
DPI (Fisheries) 2 (Port Stephens Fisheries Institute)	Regulator	(called 24/09,27/09 and 28/09)	Proximity of mapped key fish habitat.	-	-
Environmental Protection Authority (EPA) NSW	Regulator	info@epa.nsw.gov.au	Due Diligence. No real requirements. BESS projects do not constitute licensed works.	27/09/2021	Email
Landcare groups	Community	hunterregionlandcare@gmail.com	Local Group with interest in environment	27/09/2021	Email
Hunter Community Environment Centre	Community	coordinator@hcec.org.au	Local Community Identified via Nature Conservation Council	27/09/2021	Email
Wilderness Society	Community	info@wilderness.org.au	Local Community Identified via Nature Conservation Council	27/09/2021	Email
Hunter Environmental Institute (HEI)	Community	hunterenviroinstitute@gmail.com	Regional Group with interest in environment	29/09/2021	Email
Hunter Environmental Institute (HEI) 2 cc'd	Community	huntercentralcoast@environment.nsw.gov.au	Regional Group with interest in environment	29/09/2021	Email
Sustainability Hub (Operated by Council)	Community	sustainability@muswellbrook.nsw.gov.au	Council operated community centre for those with an interest in environment	29/09/2021	Email

Local non-associated landowners							
Receptor	Type	Direction	Distance from Site (m)	Address	Locality	Send Date	Format
1	Dwelling	West	220	2/18 LONHRO PLACE	MUSWELLBROOK	22/09/2021	Post
2	Dwelling	West	240	1/18 LONHRO PLACE	MUSWELLBROOK	22/09/2021	Post
3	Dwelling	West	240	13 LONHRO PLACE	MUSWELLBROOK	22/09/2021	Post
4	Dwelling	West	250	16 LONHRO PLACE	MUSWELLBROOK	22/09/2021	Post
5	Dwelling	West	280	1/9 LONHRO PLACE	MUSWELLBROOK	22/09/2021	Post
6	Dwelling	West	290	2/9 LONHRO PLACE	MUSWELLBROOK	22/09/2021	Post
7	Dwelling	West	280	14 LONHRO PLACE	MUSWELLBROOK	22/09/2021	Post
8	Dwelling	West	310	7 LONHRO PLACE	MUSWELLBROOK	22/09/2021	Post
9	Dwelling	West	300	12 LONHRO PLACE	MUSWELLBROOK	22/09/2021	Post
10	Dwelling	West	330	7 JEUNE STREET	MUSWELLBROOK	22/09/2021	Post
11	Dwelling	West	320	10 LONHRO PLACE	MUSWELLBROOK	22/09/2021	Post
12	Dwelling	West	330	8 LONHRO PLACE	MUSWELLBROOK	22/09/2021	Post
13	Dwelling	West	350	1/15 SEPOY CRESCENT	MUSWELLBROOK	22/09/2021	Post
14	Dwelling	West	350	2/15 SEPOY CRESCENT	MUSWELLBROOK	22/09/2021	Post
15	Dwelling	West	340	5 JEUNE STREET	MUSWELLBROOK	22/09/2021	Post
16	Dwelling	West	350	2/3 JEUNE STREET	MUSWELLBROOK	22/09/2021	Post
17	Dwelling	West	360	1/3 JEUNE STREET	MUSWELLBROOK	22/09/2021	Post
18	Dwelling	West	370	8 SEPOY CRESCENT	MUSWELLBROOK	22/09/2021	Post
19	Dwelling	West	350	6 LONHRO PLACE	MUSWELLBROOK	22/09/2021	Post
20	Dwelling	West	370	10 JEUNE STREET	MUSWELLBROOK	22/09/2021	Post
21	Dwelling	West	380	8 JEUNE STREET	MUSWELLBROOK	22/09/2021	Post
22	Dwelling	West	390	6 JEUNE STREET	MUSWELLBROOK	22/09/2021	Post
23	Dwelling	West	400	4 JEUNE STREET	MUSWELLBROOK	22/09/2021	Post
24	Dwelling	West	410	9 SEPOY CRESCENT	MUSWELLBROOK	22/09/2021	Post
25	Dwelling	West	420	6 SEPOY CRESCENT	MUSWELLBROOK	22/09/2021	Post
26	Dwelling	West	420	7 SEPOY CRESCENT	MUSWELLBROOK	22/09/2021	Post
27	Dwelling	West	430	7 SEPOY CRESCENT	MUSWELLBROOK	22/09/2021	Post
28	Dwelling	West	430	4 SEPOY CRESCENT	MUSWELLBROOK	22/09/2021	Post
29	Dwelling	West	460	3 SEPOY CRESCENT	MUSWELLBROOK	22/09/2021	Post
30	Dwelling	West	390	2 LONHRO PLACE	MUSWELLBROOK	22/09/2021	Post
31	Dwelling	West	400	163 QUEEN STREET	MUSWELLBROOK	22/09/2021	Post
32	Dwelling	West	410	161 QUEEN STREET	MUSWELLBROOK	22/09/2021	Post
33	Dwelling	West	430	159 QUEEN STREET	MUSWELLBROOK	22/09/2021	Post
34	Dwelling	West	440	157 QUEEN STREET	MUSWELLBROOK	22/09/2021	Post
35	Dwelling	West	450	155 QUEEN STREET	MUSWELLBROOK	22/09/2021	Post
36	Dwelling	West	460	153 QUEEN STREET	MUSWELLBROOK	22/09/2021	Post
37	Dwelling	West	500	149 QUEEN STREET	MUSWELLBROOK	22/09/2021	Post
38	Dwelling	West	380	165 QUEEN STREET	MUSWELLBROOK	22/09/2021	Post
39	Dwelling	West	510	147 QUEEN STREET	MUSWELLBROOK	22/09/2021	Post



APPENDIX G

COUNCIL CORRESPONDENCE

David Walker

To: Dave Walker
Subject: FW: Adjoining Residential Approval
Attachments: Engagement_Letter_Muswellbrook_DoorKnock_Final.pdf

From: Elle Donnelley <elle@firmpower.com.au>
Date: Wednesday, 10 November 2021 at 5:18 pm
To: Dave Walker <david.walker@premise.com.au>
Subject: FW: Adjoining Residential Approval

Please add this info to consultation appendices

From: nick@firmpower.com.au <nick@firmpower.com.au>
Date: Wednesday, 3 November 2021 at 5:14 pm
To: Hamish.McTaggart@muswellbrook.nsw.gov.au <Hamish.McTaggart@muswellbrook.nsw.gov.au>
Cc: 'Marcus Keller' <marcus@firmpower.com.au>, 'Simon Ingram' <simon@firmpower.com.au>, 'Elle Donnelley' <elle@firmpower.com.au>
Subject: RE: Adjoining Residential Approval

Hi Hamish,

By way of update on the project we have managed to negotiate additional land with Ausgrid in our quest to increase the size of the battery at Muswellbrook. We are now preparing our scoping report for a 150MW BESS (previously 100MW) and intend to lodge next week.

We conducted a door knock of the area last week to inform the neighbours and I thought it would be useful to share the attached with you so that you can view the new areas we are proposing to utilise.

If you have any questions or concerns arising from this change please don't hesitate to make contact.

Regards,
Nick

Nick Rose
General Manager
Firm Power Pty Ltd

M: +61 (0) 418 259 692
E: nick@firmpower.com.au
W: www.firmpower.com.au

From: Marcus Keller <marcus@firmpower.com.au>
Sent: Friday, 8 October 2021 2:21 PM
To: Simon Ingram <simon@firmpower.com.au>; Nick Rose <nick@firmpower.com.au>
Subject: Fwd: Adjoining Residential Approval

FYI from Hamish @ Muswellbrook Shire.

MK

----- Forwarded message -----

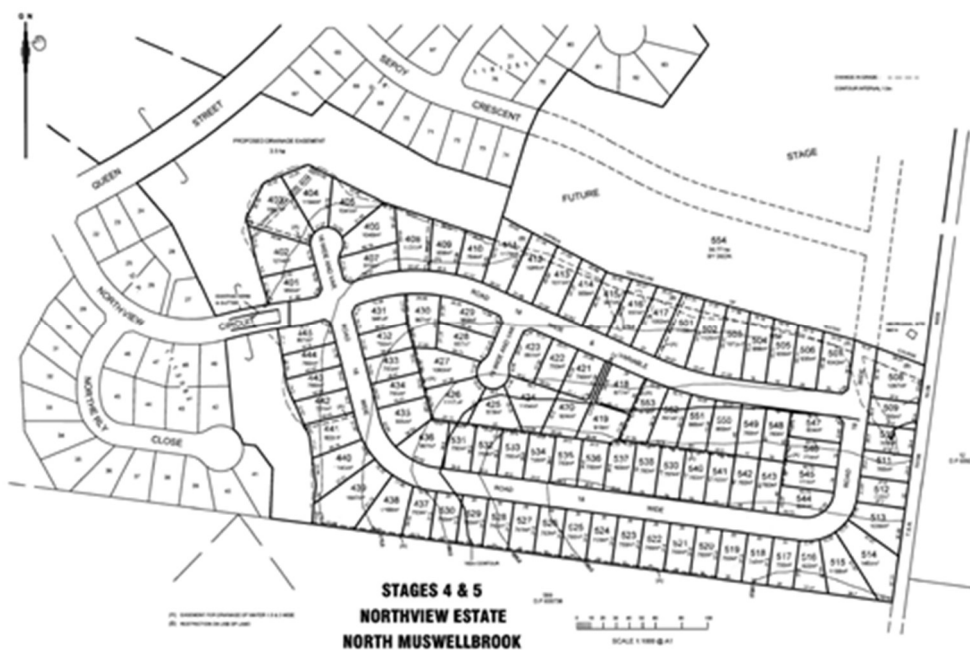
From: **Hamish McTaggart** <Hamish.McTaggart@muswellbrook.nsw.gov.au>

Date: Fri, Oct 8, 2021 at 2:08 PM
Subject: Adjoining Residential Approval
To: Marcus Keller <marcus@firmpower.com.au>

Hi Marcus,

I have attached an image of the adjoining approved residential development.

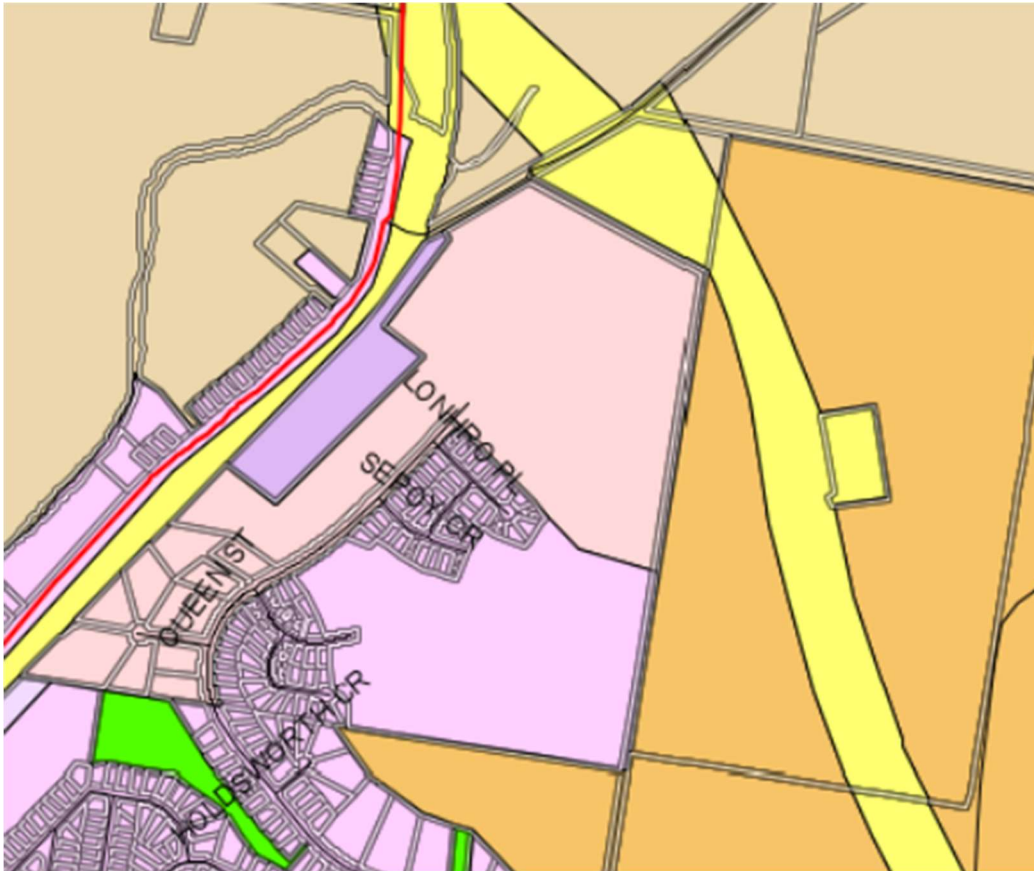
I had my bearings of at the meeting when I mentioned the subdivision comes of Sepoy Crescent actually comes of Northview Circuit to the south before returning to Sepoy Crescent in a future stage.



The Muswellbrook Residential and Rural Residential Strategy I referenced can be found from our website at <https://www.muswellbrook.nsw.gov.au/component/edocman/muswellbrook-residential-and-rural-residential-strategy-february-2014-adopted-by-council-on-10-march-2014>

From the my quick review of the strategy it seems the only additional land it promotes for rezoning to the north of Muswellbrook is to the north of the site.

As you are probably aware there is a sizeable area west of the site zoned a mixture of R1 General Residential and R5 Large Lot Residential which I have included an image of below. I am sure you will factor in these future development areas when considering visual impacts, landscaping and screening.



Regards,

Hamish McTaggart | Development Coordinator



T: 02 6549 3860 | **E:** Hamish.McTaggart@muswellbrook.nsw.gov.au | **W:** www.muswellbrook.nsw.gov.au

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Hi, Nick,

If it possible to get an overview of the project that would appreciated.

Regards,
Matt



Muswellbrook Shire Council | Matthew Lysaught | Manager Works, Property & Building Services
T: 02 6549 3730 | **M:** 0409 589 423 | **E:** matthew.lysaught@muswellbrook.nsw.gov.au |
www.muswellbrook.nsw.gov.au

Note

**The Muswellbrook Council Administration Centre has moved to
Campbell's Corner 60-82 Bridge Street Muswellbrook NSW 2333**

I respectfully acknowledge the local Aboriginal people who are the Traditional Owners and Custodians of the land on which I work.

From: nick@firmpower.com.au <nick@firmpower.com.au>
Sent: Tuesday, 10 August 2021 1:36 PM
To: Matthew Lysaught <Matthew.Lysaught@muswellbrook.nsw.gov.au>
Subject: Muswellbrook Big Battery

Hi Matthew,

I'm reaching out to introduce you to a large scale battery project Firm Power are developing in the Muswellbrook Council area. We are in the early stages of our development but would welcome the opportunity to introduce you to the project and keep you informed of our approach.

Due to the size of the project we are following a State Significant Development pathway via DPIE, but as a key stakeholder we would like to keep Muswellbrook Council abreast of our plans.

If this is of interest please don't hesitate to contact me.

I look forward to making contact.

Regards,
Nick

Nick Rose
General Manager
Firm Power Pty Ltd

M: +61 (0) 418 259 692
E: nick@firmpower.com.au
W: www.firmpower.com.au

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Muswellbrook Shire Council ABN 86 864 180 944

From: nick@firmpower.com.au
Sent: Tuesday, 10 August 2021 1:36 PM
To: rod.scholes@muswellbrook.nsw.gov.au
Subject: Muswellbrook Big Battery

Hi Rod,

I'm reaching out to see if you would be interested to hear some more about a large scale battery project Firm Power are developing in Muswellbrook.

I can see from your profile that you have a sustainability bent so I thought you would like to know what we are planning before we progress down the development pathway.

Happy to provide a bit of background information here before we discuss.

- The site address is 20 Sandy Creek Road, Muswellbrook
- The project site is adjacent to the Ausgrid substation (the attached site plan shows the positioning)
- The battery plans to be 100MW in size with a capital value of approx. \$100m
- Due to the size of the project we are venturing down the State Significant Development planning pathway

We are in early stages of developing the project but are soon to lodge our scoping report with DPIE.

Let me know if you would like to discuss further?

Regards,
Nick

Nick Rose
General Manager
Firm Power Pty Ltd

M: +61 (0) 418 259 692
E: nick@firmpower.com.au
W: www.firmpower.com.au



APPENDIX H

SUBSIDENCE ADVISORY NSW ENGAGEMENT

Hi David, see advice below:

Lots 11 and 12 DP839233, 20-24 Sandy Creek Road, Muswellbrook - **EOTH21-00240**

Muswellbrook Mine Subsidence District – Guideline 8. No requirements.



Kind Regards,

Paul Gray | Senior Building Assessment Officer

Subsidence Advisory NSW

Better Regulation Division | Department of Customer Service

P: 4908 4300

E: subsidenceadvisory@customerservice.nsw.gov.au | www.subsidenceadvisory.nsw.gov.au



Please consider the environment before printing this email

From: subsidenceadvisory <subsidenceadvisory@customerservice.nsw.gov.au>

Sent: Friday, 6 August 2021 2:55 PM

To: Paul Gray

Cc: subsidenceadvisory <subsidenceadvisory@customerservice.nsw.gov.au>

Subject: FW: [#221313] Pre-lodgement advice - 3 x SSD battery energy storage system projects

Hi Paul,

Please see the below email and the attached. I have created enquiries and assigned to you, details below.

Lots 11 and 12 DP839233, 20-24 Sandy Creek Road, Muswellbrook - **EOTH21-00240**

[REDACTED]

Please Cc Advisory in your response and we will save it against each enquiry.

Regards,
Soma

From: David Walker <David.Walker@premise.com.au>

Sent: Friday, 6 August 2021 9:17 AM

To: subsidenceadvisory <subsidenceadvisory@customerservice.nsw.gov.au>

Subject: [#221313] Pre-lodgement advice - 3 x SSD battery energy storage system projects

Good morning

Premise acts for Firm Power who are in the process of commencing the process of seeking approval for three proposed battery energy storage systems, to be located at the following locations:

1. Muswellbrook BESS – 50 MW/100 MWh – Lots 11 and 12 DP839233, 20-24 Sandy Creek Road, Muswellbrook

[REDACTED]

We note that:

1. The Muswellbrook site is located within the Muswellbrook Mine Subsidence District

[REDACTED]

The three applications will each be lodged with Dept Planning, Industry and Environment as State Significant Development and will be supported by preparation of individual site specific EIS's.

Prior to preparing EIS's for site, the applicant will seek the Secretary's Environmental Assessment Requirements and engage with DPIE via a pre scoping meeting.

The purpose of this email is to be confirm the requirements of Subsidence Advisory NSW in the making of the applications.

Please confirm whether specific information with respect to potential impacts around subsidence are required to be provided in the preparation of the initial SEARs request and scoping report.

Please contact the undersigned with any questions.

Kind regards



DAVID WALKER
Town Planning Discipline Lead

T 02 6393 5000 | **M** 0437 621 057
E David.Walker@premise.com.au
A 154 Peisley St, Orange NSW 2800



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APPENDIX I

SOCIAL IMPACT SCOPING WORKSHEET

Social Impact Assessment (SIA) Worksheet																		Project name: Apsley Battery Energy Storage System			Date: Nov-21		
CATEGORIES OF SOCIAL IMPACTS	POTENTIAL IMPACTS ON PEOPLE		PREVIOUS INVESTIGATION OF IMPACT		CUMULATIVE IMPACTS		ELEMENTS OF IMPACTS - Based on preliminary investigation					ASSESSMENT LEVEL FOR EACH IMPACT				PROJECT REFINEMENT	MITIGATION / ENHANCEMENT MEASURES						
what social impact categories could be affected by the project activities	What impacts are likely, and what concerns/aspirations have people expressed about the impact? Summarise how each relevant stakeholder group might experience the impact. NB. Where there are multiple stakeholder groups affected differently by an impact, or more than one impact from the activity, please add an additional row.		Has this impact previously been investigated (on this or other project/s)?	If "yes - this project," briefly describe the previous investigation. If "yes - other project," identify the other project and investigation	Will this impact combine with others from this project (think about when and where), and/or with impacts from other projects (cumulative)?	If yes, identify which other impacts and/or projects	Will the project activity (without mitigation or enhancement) cause a material social impact in terms of its: <small>You can also consider the various magnitudes of these characteristics</small>					Level of assessment for each social impact	What methods and data sources will be used to investigate this impact?			Has the project been refined in response to preliminary impact evaluation or stakeholder feedback?	What mitigation / enhancement measures are being considered?						
		Is the impact expected to be positive or negative					extent i.e. number of people potentially affected?	duration of expected impacts? (i.e. construction vs operational phase)	Intensity of expected impacts i.e. scale or degree of change?	sensitivity or vulnerability of people potentially affected?	level of concern/interest of people potentially affected?		Secondary data	Primary Data - Consultation	Primary Data - Research								
surroundings	Increased noise to receivers	negative	Yes - other project	Broken Hill and Hume BESS projects	No		Yes	Yes	Yes	Yes	Unknown	Detailed	Required	Broad engagement	Targeted engagement	No	Management through appropriate on site controls during construction						
surroundings	Increased noise to receivers	negative	Yes - other project	Broken Hill and Hume BESS projects	No		Unknown	Unknown	Unknown	Unknown	Unknown	Detailed	Required	Broad engagement	Targeted engagement	No	Adopt standard measures (working within standard hours etc). Conduct noise impact assessment and adopt suitable mitigation/management measures.						
surroundings	Changes to the landscape and visual amenity	negative	Yes - other project	Broken Hill and Hume BESS projects	No		No	Yes	Unknown	Unknown	Yes	Detailed	Required	Broad engagement	Targeted engagement	Yes	Visibility of site and context of receiving environment considered in site selection. Visual impacts to be assessed in detail in assessment and the need for, or extent of, visual mitigation measures identified						
health and wellbeing	Chnages in air quality during construction	negative	Yes - other project	Broken Hill and Hume BESS projects	No		Yes	Yes	Yes	Yes	Unknown	Standard	Required	Broad engagement	Targeted engagement	No	To be determined during assessment						
access	Increased traffic during construction causing short term disruption	negative	Yes - other project	Broken Hill and Hume BESS projects	Unknown		No	No	No	No	Unknown	Standard	Required	Limited	Not required	No	Management through appropriate on site controls during construction						
access	Increased traffic during operation causing disruption	negative	Yes - other project	Broken Hill and Hume BESS projects	No		No	No	No	No	Unknown	Standard	Required	Limited	Not required	No	Management through appropriate on site controls during construction						
health and wellbeing	Changes to landscape and visual amenity	Negative	Yes - other project	Broken Hill and Hume BESS projects	No		Yes	Yes	Yes	Yes	Unknown	Detailed	Required	Broad engagement	Targeted engagement	No	Project refinement as required to avoid impact where possible						
culture	Potential for impacts to unknown items or sites of Aboriginal heritage	negative	Yes - other project	Broken Hill and Hume BESS projects	No		Yes	Yes	Yes	Yes	Unknown	Detailed	Required	Broad engagement	Targeted engagement	No	Project refinement as required to avoid impact where possible						
way of life	Reduction in power prices in the locality	Positive	Yes - other project	Broken Hill and Hume BESS projects	No		Yes	Yes	Yes	Yes	Unknown	Detailed	Required	Broad engagement	Targeted engagement	No	None required						
livelihoods	Increased employment opportunities during construction phase	Positive	Yes - other project	Broken Hill and Hume BESS projects	No		Yes	Yes	Yes	Yes	Unknown	Detailed	Required	Broad engagement	Targeted engagement	No	Buy/use local resources where possible						
livelihoods	Increased employment opportunities during operational phase	Positive	Yes - other project	Broken Hill and Hume BESS projects	No		Yes	Yes	Yes	Yes	Unknown	Detailed	Required	Broad engagement	Targeted engagement	No	Buy/use local resources where possible						
way of life	Concern about introduction of project into locality and nature of changes	negative	Yes - other project	Broken Hill and Hume BESS projects	No		Yes	Yes	Yes	Yes	Unknown	Detailed	Required	Broad engagement	Targeted engagement	No	To be determined during assessment						



Premise

premise.com.au