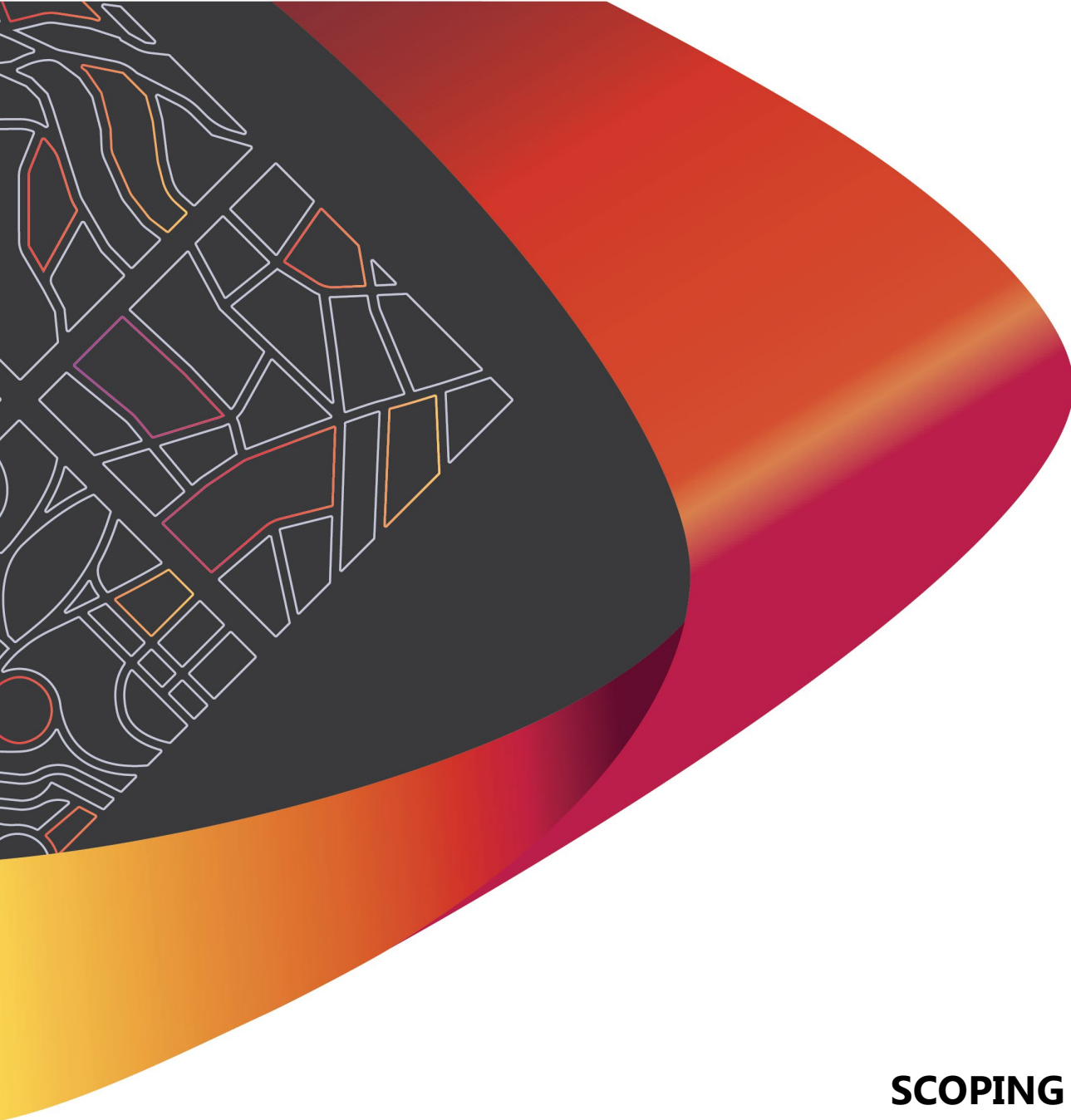




SCOPING REPORT

Pinecrest Battery Energy Storage System

Banpu Energy Australia Pty Ltd

Job No: P002187 R01

Rev: C

28 April 2025



Premise

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ABBREVIATIONS

Abbreviation	Abbreviated term
AHIMS	Aboriginal Heritage Information Management System
BESS	Battery Energy Storage System
DA	Development application
DHPI	Department of Housing, Planning and Infrastructure
EDC	Estimated cost of development
EIS	Environmental Impact Statement
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EP&A Regulations	<i>Environmental Planning and Assessment Regulation 2021</i>
ha	Hectares
Infrastructure SEPP	<i>State Environmental Planning Policy (Transport and Infrastructure) 2021</i>
km	Kilometres
kV	Kilovolt
LEP	<i>Lithgow Local Environmental Plan 2014</i>
LGA	Local Government Area
m	Metres
MW	Megawatt
MWh	Megawatt-hour
MVPS	Medium Voltage Power Station
PMST	Protected Matters Search Tool
REAP	Renewable Energy Action Plan

REZ	Renewable Energy Zone
RNE	Register of the National Estate
SEARs	Secretary's Environmental Assessment Requirements
SEPP	State Environmental Planning Policy
SHI	State Heritage Inventory
SHR	State Heritage Register
SSD	State Significant development
SSDA	State Significant Development Application
Systems SEPP	<i>State Environmental Planning Policy (Planning Systems) 2021</i>

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1. INTRODUCTION

1.1 Overview

Banpu Energy Australia Pty Ltd (Banpu; the Applicant) are proposing to develop an up to 500 Megawatt (MW), 1,000 Megawatt hour (MWh) (2 hour duration) Battery Energy Storage System (BESS) at 257 Brays Lane, Lidsdale NSW 2970, to be known as the 'Pinecrest BESS'.

The indicative BESS, including ancillary infrastructure, would cover an area of 14.5 hectares (ha), and be located on Lots 16, 164 and 174 DP751651, Lot 2 DP567915 and Lots 4, 6 and 7 DP1244030 (refer Figure 2). The project area totals an area of 262 ha and includes Lot 1 DP120399, Lot 37 DP658181, Lot 2 DP567915, Lot 2 DP596248, Lot 1 DP406694, Lot 4 DP1088207, Lot 101 DP1137972, Lots 16, 164, 174, 232, 351, 375, 385, and 400 DP751651, and Lots 1 to 10 DP1244030. Access to the project area would be provided from Castlereagh Highway, via either Brays Lane or Karawatha Drive. Subject to agreement with Transgrid, the Pinecrest BESS would connect to the network via cut-in to either of the adjacent 132 kilovolt (kV) or 330 kV transmission lines.

The Pinecrest BESS is situated within the City of Lithgow Local Government Area (LGA) and is not situated within a Renewable Energy Zone (REZ). Pinecrest BESS will include the following:

- > Installation of enclosed batteries, power conversion systems including associated transformers, underground power and fibre optic cabling interconnecting the equipment, and grid connection equipment;
- > Site office, storage area/enclosure, internal access tracks, on-site parking, security fencing, CCTV, and temporary construction laydown area;
- > An underground or overhead transmission line of up to approximately 150 m length to connect the BESS to the 132 kV or 330 kV transmission lines located to the west;
- > Construction or upgrade of the site access from Brays Lane or Karawatha Drive.

A conceptual layout of the indicative BESS and ancillary infrastructure has been provided in **Figure 6**.

This scoping report has been prepared by Premise Australia Pty Ltd (Premise) to support a request to the Department of Housing, Planning and Infrastructure (DHPI) for the Secretary's Environmental Assessment Requirements (SEARs). The SEARs will inform preparation of an Environmental Impact Statement (EIS) submitted under Part 4 of the *Environmental Planning and Assessment Act 1979* (the EP&A Act). A Scoping Summary Table is provided in **Appendix A**.

The project is a State Significant development (SSD) as declared by Section 2.6(1)(b) and under Section 20, Schedule 1 of the *State Environmental Planning Policy (Planning Systems) 2021* (Systems SEPP). The applicable consent authority for the proposal is either the Independent Planning Commission or the NSW Minister for Planning (or the Minister's delegate).

A core objective of the scoping report is to ensure a complete understanding of site sensitivities and to prioritise a strategy of avoid, minimise, and offset. Strategies for key impact areas in this respect are as follows:

Table 1 – Impact minimisation strategy

Key impact areas	Avoid	Minimise	Offset
Access	Prioritise the use of existing road infrastructure, subject to agreement with the roads authorities	Where impacts cannot be avoided, negotiate with regulators to ensure that designs minimise impact where possible	Any residual impacts (such as to native vegetation associated with road works) would be assessed via the project Biodiversity Development Assessment Report (BDAR) and residual liability would be discharged prior to works commencing.
Amenity, built environment and land use	The positioning of the facility has been carefully conceived to avoid impacts to nearby non-associated receivers.	Residual impacts would be identified through detailed assessment and measures taken to avoid and minimise these.	Where impacts cannot be avoided or minimised to an acceptable extent, agreements with neighbours would be negotiated to offset residual impacts.
Biodiversity	Prioritise development of lands that have been cleared of native vegetation	Where impacts cannot be avoided, negotiate with regulators to ensure that designs minimise impact where possible	Any residual impacts (such as to native vegetation associated with road works) would be assessed via the project BDAR and residual liability would be discharged prior to works commencing.
Economic	Economic impacts are largely positive.	Harm is minimised through ensuring the adoption of best practise principles in construction and operation.	No residual impacts are predicted.
Hazard and risks	Avoidance and minimisation of the risks of hazard would be delivered through a strong understanding of project risks, through specialist investigations, and adoption of key recommendations.		No residual impacts are predicted.
Aboriginal heritage	Known sites of Aboriginal significance will be avoided. Sufficient investigations will be	Where avoidance cannot be achieved, impacts would be minimised through discussion with	Any unavoidable impacts (not expected) would be assessed and agreed with RAPs and Heritage NSW in

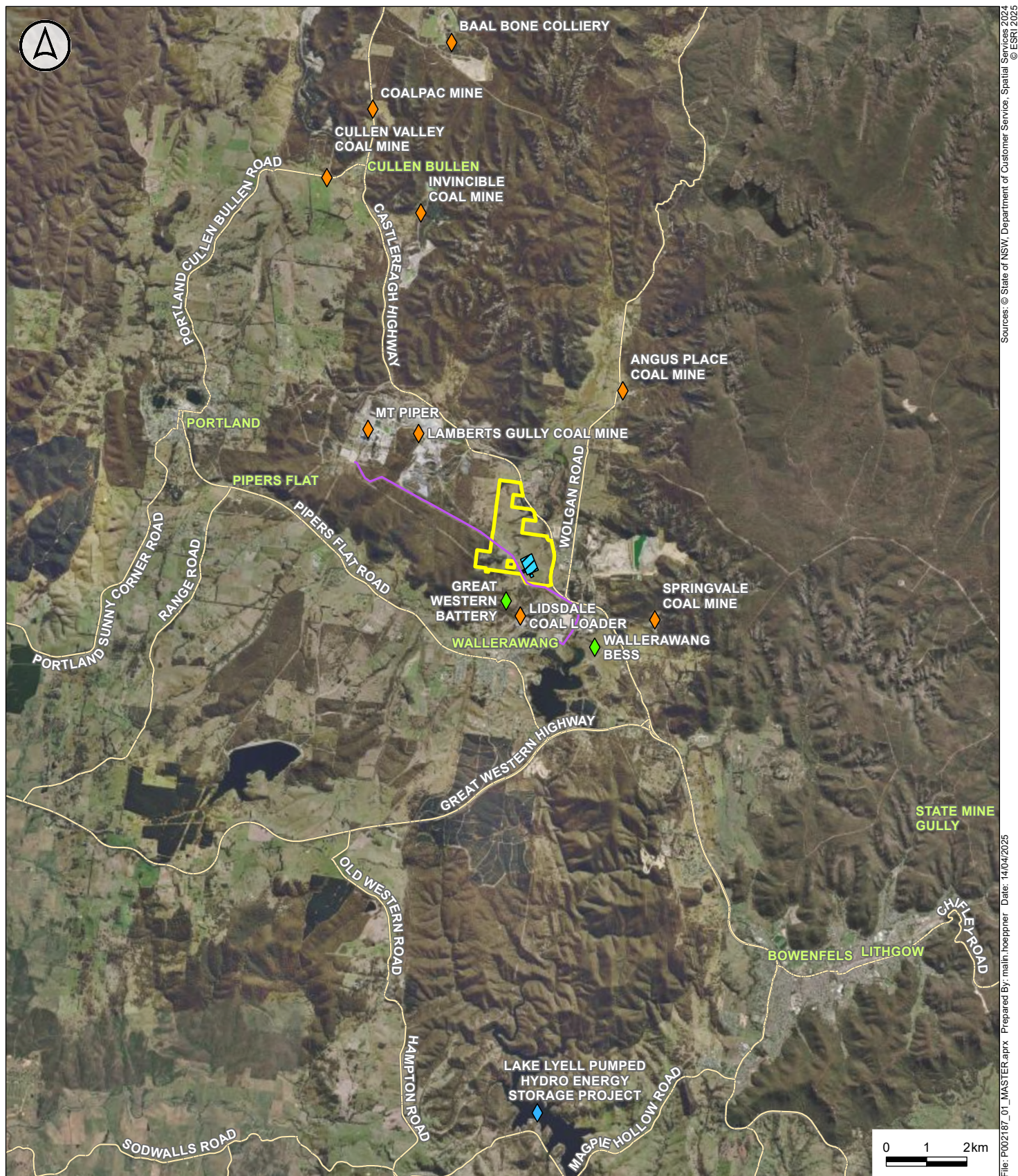
Key impact areas	Avoid	Minimise	Offset
	completed to identify any previously unidentified sites and these would also be avoided where possible.	Registered Aboriginal Parties (RAPs) to agree to acceptable methods of minimisation. This will be delivered through the project Aboriginal Cultural Heritage Assessment (ACHA).	advance and documented in the project ACHA.
Historic heritage	Site selection has avoided/minimised direct impacts through ensuring adequate separation to sites of historic heritage importance.		No residual impacts are predicted.
Social impact	A clear understanding of potential social impacts would be determined through effective, proactive, and genuine engagement with community stakeholders. Once these issues are clearly understood, strategies will be adopted via the project EIS to ensure avoidance and minimisation.		To the extent that residual impacts are identified, impacts would be offset by the overarching positive benefit associated with the delivery of the project, to meet the State and Federal goals around decarbonisation of the energy industry.
Water	Impacts to surface water are avoided through ensuring appropriate offsets between project infrastructure and mapped waterways.	Harm minimisation would be delivered through adoption of best practise principles outlined in adopted DPE Water riparian corridor guidelines	Offsetting, if required, would be completed in accordance with the average rule outlined in the DPE Water riparian corridor guidelines
Air quality	Impacts to air quality would be avoided/minimised through adopting standard mitigation measures, to be outlined in a project CEMP.		No residual impacts requiring offsetting are predicted.

Key features of the project are summarised in **Table 2**. The regional context of the development is reflected in **Figure 1** and the local context is reflected in **Figure 2**. Site constraints are reflected in **Figure 4**.

Table 2 – Project summary

Project element	Summary of the project
Development size	> The indicative BESS and ancillary infrastructure will comprise an area of 14.5 ha. > The project area comprises a total area of 262 ha.
Details of project area	Lot 1 DP120399, Lot 37 DP658181, Lot 2 DP567915, Lot 2 DP596248, Lot 1 DP406694, Lot 4 DP1088207, Lot 101 DP1137972, Lots 16, 164, 174, 232, 351, 375, 385, and 400 DP751651, and Lots 1 to 10 DP1244030
Battery storage capacity and duration	Up to 500 MW, 1000 MWh (2 hour duration)
Project lifespan	Up to 25 years, with the possibility of upgrades to extend the operational life
Infrastructure	> An up to 500 MW, 1,000 MWh (2 hour duration) BESS; > Underground cabling connecting BESS and MVPS; > A 330/132kV substation; > An underground or overhead transmission line of up to approximately 150 metres long connecting the BESS substation to the 330kV or 132kV overhead transmission line; > Temporary construction compound including material laydown areas, site offices, vehicle parking, and amenities; > Construction or upgrade of a property access from Castlereagh Highway via either Brays Lane or Karawatha Drive; and > Chain-link/barbed-wire security fence up to 1.8 metres in height.
Site access options	> Option 1: Castlereagh Highway via Karawatha Drive > Option 2: Castlereagh Highway via Brays Lane
Access route	It is anticipated that project infrastructure would be delivered from either Port of Newcastle or Port of Botany and transported to the site via roads approved for heavy vehicle use.
Construction	> Construction is expected to commence in late-2026 and occur over an 18 month period, including a peak period of 9 months. > Construction would occur during standard construction hours. However, it is anticipated that some activities that are inaudible and would not result in amenity impacts to surrounding receivers, may be required to occur outside of standard hours in accordance with an Out-of-Hours Construction Protocol.

Project element	Summary of the project
Operations and maintenance	The project would be operated remotely with occasional maintenance activities generally be undertaken by up to five (5) personnel.
Decommissioning and rehabilitation	> The land where the indicative BESS and ancillary infrastructure would be located would be progressively rehabilitated during the decommissioning period, including removal of the temporary construction facilities. Temporary construction facilities include temporary buildings installed on site to provide for workers associated with decommissioning. > At the end of operational life, components above ground and below ground (with depth subject to agreement with landowner) would be removed and land rehabilitated to pre-development conditions.
Workforce	Up to 250 construction jobs, and 5 ongoing roles.
Hours of operation	24 hours, 7 days a week.



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Premise
BANPU ENERGY AUSTRALIA
Pinecrest BESS

Figure 1
Regional Context

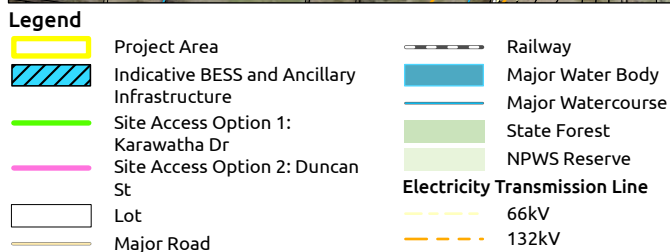


Figure 2
 Local Context

1.2 Applicant

Banpu is a subsidiary of Banpu Public Company Ltd. Banpu Public Company Ltd is one of Asia's largest energy companies. Banpu has had a presence in Australia for many years and has focused on expanding business into renewable energy and decarbonisation projects.

Banpu owns and operates Beryl and Manildra solar farms and contributes renewable energy to Australian businesses such as Sydney Metro and Energy Australia.

Banpu's head office is located at Level 8, 1 Market Street, Sydney NSW. Their ABN is 95 637 226 825.

1.3 Planning framework

The proposed BESS is defined as electricity generating works under the *Lithgow Local Environmental Plan 2014* (LEP) as it is:

a building or place used for the purpose of—

(a) making or generating electricity, or

(b) electricity storage.

The proposed BESS development is SSD, pursuant to Section 20, Schedule 1 of the Systems SEPP, as it is for the purposes of electricity generating works with an estimated cost of development (EDC) of more than \$30 million, and it is permitted with consent.

Generally, as the proposed development contains a BESS with a capacity of greater than 30 MW, it would constitute designated development by reference to Section 7 of Schedule 3 of the *Environmental Planning and Assessment Regulation 2021* (EP&A Regulations). However, Section 4.10(2) of the EP&A Act provides that SSD is not designated development. In any event, the requirement in relation to the designated development is to prepare an EIS in support of the Development Application (DA). This is also a requirement of the SSD process, and thus there is no demonstrable difference in the approach.

The project area is zoned RU1 Primary Production, while the site access options are located on land zoned SP2 Infrastructure (Roads and Traffic Facility), pursuant to the LEP. Electricity generating works are not permitted with consent on RU1 or SP2 land pursuant to the LEP. However, Section 2.36 of the *State Environmental Planning Policy (Transport and Infrastructure) 2021* (Infrastructure SEPP) permits electricity generating works within prescribed non-residential zones, including the RU1 and SP2 zones. The Infrastructure SEPP prevails to the extent of any inconsistency with another environmental planning instrument, including the LEP. Thus, the project is permitted with consent. The Minister has the power via Section 4.38(3) of the EP&A Act to permit aspects of an SSD project despite it being prohibited.

1.4 Report structure

Consistent with the requirements of the *State Significant Development Guidelines – Preparing a Scoping Report* (DPIE 2022), the report is structured as follows:

- > **Section 1** introduces the project, its location, the development details, and the planning framework.
- > **Section 2** details the development's strategic context.

- > **Section 3** provides a description of the proposed development.
- > **Section 4** provides the statutory context.
- > **Section 5** provides details of community engagement completed during the scoping phase.
- > **Section 6** provides a summary of the proposed level of assessment of project impacts in the project EIS.

2. STRATEGIC CONTEXT

2.1 Policy

2.1.1 AUSTRALIA'S LONG TERM EMISSIONS REDUCTION PLAN

Australia's Long Term Emissions Reduction Plan (Australian Government, 2021) (LTERP) sets out how Australia will achieve the goal of net zero emissions by 2050. One key principle of the plan is to lower the costs of low emissions technology. This involves prioritising technologies that will achieve this. One of the identified priority technologies is "energy storage for firming". The proposed Pinecrest BESS will provide for energy storage, thereby contributing to grid stability and providing clean and cheap electricity. The proposed Pinecrest BESS is considered consistent with the priorities of the plan as it will provide opportunity for energy storage within the regional context.

2.1.2 NSW 2021 PLAN AND RENEWABLE ENERGY ACTION PLAN

NSW 2021: A Plan to Make NSW Number One (NSW Government, 2011) (NSW 2021 Plan) 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 NSW 2021 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."

Since release of the NSW 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 Pinecrest 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 Climate Change Policy Framework* (NSW Government, 2016) (Framework). This Framework is committed to effective action on climate change, outlining long term objectives to achieve net-zero emissions by 2050 and to make NSW more resilient to a changing climate. The achievement of net zero emissions by 2050 is reliant on the transition towards more sustainable and renewable forms of electrical production.

The Pinecrest BESS supports this objective by improving the reliability and stability of the electrical grid. BESS systems balance electrical demand and supply, and support responsive management of the electricity network, particularly during periods of peak generation and use. Increased variability within the grid is expected as the network transitions to increasingly renewable means of generation. The proposed Pinecrest BESS is consequently consistent with the objective of the Framework.

2.1.3 NSW NET ZERO PLAN

Since release of the 2021 Plan, the NSW Government has overseen the development of the NSW Net Zero Plan. The objective of the plan is to achieve net zero emissions by 2050 by creating new jobs, cutting household costs and attracting investment. Net Zero Plan Stage 1: 2020-2030. The Net Zero Plan identifies four (4) priority areas for action to achieve this objective which include:

1. Drive uptake of proven emissions reduction technologies that grow the economy, create new jobs or reduce the cost of living
2. Empower consumers and businesses to make sustainable choices
3. Invest in the next wave of emissions reduction innovation to ensure economic prosperity from decarbonisation beyond 2030
4. Ensure the NSW Government leads by example

The proposed Pinecrest BESS is consistent with the state-led priorities, particularly Priority 1 and Priority 4, by creating new jobs and supporting the growing renewable energy market. Large scale battery systems are a new proven technology that is contributing to the stability and reliability of the Australian electrical network. The battery systems have been developed to support the increased number of renewable energy sources that are emerging across Australia to support the objective to achieve net zero emissions.

2.1.4 NSW ELECTRICITY STRATEGY

The NSW Electricity Strategy 2019 (NSW Government, 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 the following four important principles:

- *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 Pinecrest BESS 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

2.1.5 NSW ELECTRICITY INFRASTRUCTURE ROADMAP

The former Department of Planning, Industry and Environment (DPIE) released the NSW Electricity Infrastructure Roadmap (DPIE, 2020a) in November 2020. Key actions from the Roadmap include:

- > Renewable Energy Zones (REZs);
- > Transmissions development scheme;
- > Electricity Infrastructure Investment Safeguard;
- > Pumped Hydro Recoverable Grants Program; and
- > Internationally competitive NSW industries.

Five (5) REZs are at various stages of development including in the Central West-Orana, New England, South-West, Hunter-Central Coast, and Illawarra, selected based on the availability of resources and existing connecting infrastructure. The Pinecrest BESS is not located within a REZ.

2.1.6 ENERGY SECURITY SAFEGUARD

The Energy Security Safeguard (NSW Government, 2020) 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 Pinecrest BESS 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.

2.1.7 RENEWABLE ENERGY POLICY FRAMEWORK

The Renewable Energy Policy Framework (Policy Framework) was published by Department of Planning, Housing and Infrastructure (DPHI) in November 2024 to help achieve the transition to renewable energy, support legislated net zero targets by 2050 and secure an affordable supply of electricity for NSW. While the Policy Framework generally relates to solar energy, wind energy, hydrogen and transmission projects, it also accounts for both associated and stand-alone BESS projects, highlighting the need for two gigawatts of long-duration energy storage. The Policy Framework is relevant to stand-alone BESS projects in terms of benefit sharing to the local neighbourhoods and local community, and private agreements with landowners and adjacent landowners. The Policy Framework will provide guidance for future benefit sharing agreements with Lithgow City Council (LCC) and private agreements with landowners.

2.1.8 CENTRAL WEST AND ORANA REGIONAL PLAN 2041

Central West and Orana Regional Plan 2041 (DPE, 2022) sets out the strategic framework for the region and aims to protect and enhance the regions assets and plan for a sustainable future. Objective 2 of the regional plan is to support the states transition to net zero emissions by 2050. The plan also identifies the aspiration of transforming Lithgow into a clean energy and logistics hub.

The proposed Pinecrest BESS aligns with the objectives of the plan as it will provide essential energy storage infrastructure. The Pinecrest BESS will positively contribute to the stability of the electricity network and reduce the regions reliance on fossil fuels.

2.1.9 LITHGOW 2040 LOCAL STRATEGIC PLANNING STATEMENT

The Lithgow 2040 Local Strategic Planning Statement (LSPS) (LCC, 2020) provides a strategic direction of how LCC manage local needs and issues now and in the future. The LSPS identifies the protection of economic values of rural areas through management of land use conflicts to be Planning Priority 8. The priority acknowledges that there is potential for renewable energy investment on agricultural land within the Lithgow LGA. Actions identified include a review of the Lithgow LEP to support renewable energy projects away from sensitive land uses such as residential accommodation. The proposed Pinecrest BESS will provide economic investment into agricultural land while physically separated from residential development by the Castlereagh Highway and topographical features.

Additionally, while renewable energy projects are not specifically discussed, it is considered that the development will contribute to Planning Priority 9 which aims to attract investment and grow local jobs. The proposed Pinecrest BESS will generate up to 250 construction jobs and 5 operational jobs that will aim to utilise local resources.

2.1.10 LITHGOW EMERGING ECONOMY PROJECT

The Lithgow Emerging Economy Project (LEEP) is a LCC driven project which aims to help Lithgow plan and identify opportunities for Lithgow's economic diversification and growth as the Australian energy section transitions to net zero. The LEEP Transition Action Plan identifies a proposed outcome for Lithgow to "become a global example of successful transition to a renewables-led, new energy economy"(LCC, 2023). To achieve this, the plan seeks to leverage off the existing high voltage transmission infrastructure in the area and provide greater grid support through the development of batteries. The plan identifies that priority areas for reuse for batteries include existing land along the 330 kV transmission line. These priority areas include the project area.

The Pinecrest BESS is consistent with the aim of the LEEP, and aligns with the growth approach identified in the LEEP Transition Action Plan, with the BESS located within a priority area for reuse.

2.2 Local context

The Pinecrest BESS is located within the Lithgow LGA and is approximately 1.5 kilometres north of the township of Wallerawang and 12 kilometres to the southeast of city of Lithgow. The Lithgow LGA is located on the western edge of the Blue Mountains and is situated between Bathurst LGA and Blue Mountains LGA. The Pinecrest BESS is not located within a REZ. The regional context of the site is depicted in **Figure 1**.

The Castlereagh Highway runs north-south along the eastern boundary of the project area, towards Mudgee to the north and the Great Western Highway to the south.

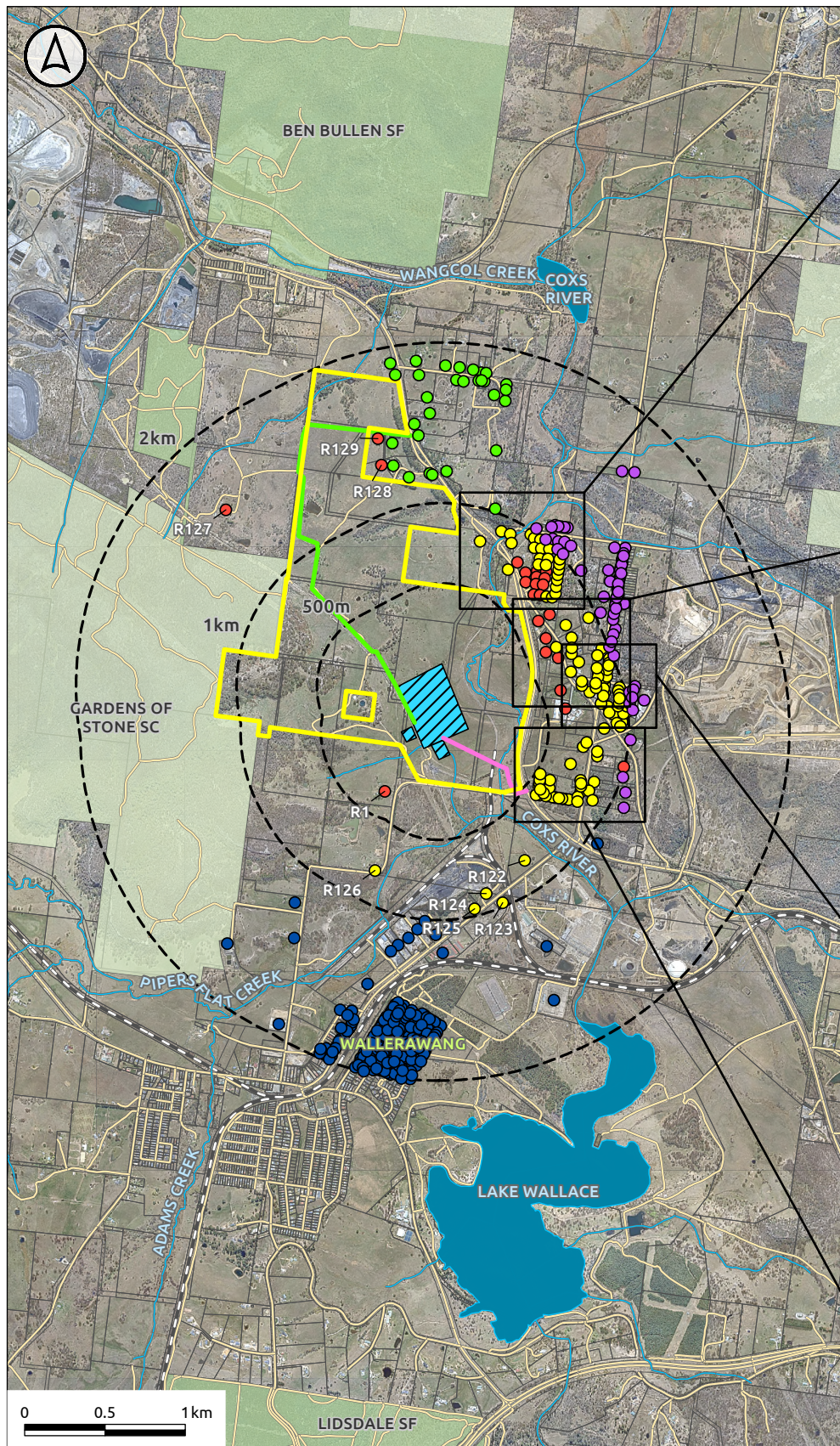
The Coxs River also runs north-south east of the Pinecrest BESS and adjacent to the highway road. The Coxs River is a perennial river which is part of the Hawkesbury-Nepean catchment.

The Pinecrest BESS is located on the edge of the township of Wallerawang in a locality that, while zoned RU 1 Primary Production, features a large amount of infrastructure, particularly related to mining activities. The Wallerawang area has a long association with mining activities and the site itself includes mining infrastructure including the Lidsdale Coal Loader as well as high voltage transmission lines.

Due to the proximity to the residential areas of Wallerawang, there are approximately 401 receivers within 2 km of the Pinecrest BESS however the majority of these are greater than 1km from the proposed BESS location and would have limited to no visibility of the project. There is one receiver within 500m of the proposed BESS noting that this is on land held in the same ownership as the proposed BESS and is therefore expected to be classed an associated receiver. Between 500m and 1km of the proposed BESS, there are approximately 125 non-associated receivers with the remainder (275) located between 1-2km from the proposed BESS. 46 of these receivers are non-residential.

Receiver locations are depicted in **Figure 3**.



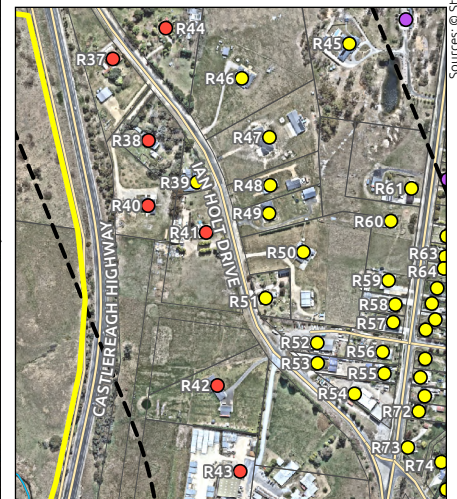
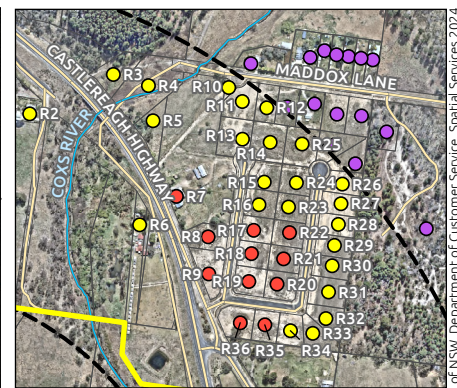


- Legend**
- Project Area
 - Indicative BESS and Ancillary Infrastructure
 - Buffers around Indicative BESS and Ancillary Infrastructure
 - Access Options**
 - Indicative Site Access Option 1: Karawatha Dr
 - Indicative Site Access Option 2: Brays Ln

- Lot
- Road
- Railway
- Major Water Body
- Major Watercourse
- State Forest
- NPWS Reserve

Receivers

- Receivers with potential visibility to development
- Receivers with no visibility to development within 1km
- Cluster 1
- Cluster 2
- Cluster 3



2.3 Site description

The proposed BESS and ancillary infrastructure would be located on land identified as 257 Brays Lane, Lidsdale and consisting of Lots 16, 164 and 174 DP751651, Lot 2 DP567915 and Lots 4, 6 and 7 DP1244030. The indicative BESS and ancillary infrastructure covers an area of approximately 14.5 ha. The project area has an area of approximately 262 ha and includes Lot 1 DP120399, Lot 37 DP658181, Lot 2 DP567915, Lot 2 DP596248, Lot 1 DP406694, Lot 4 DP1088207, Lot 101 DP1137972, Lots 16, 164, 174, 232, 351, 375, 385, and 400 DP751651, and Lots 1 to 10 DP1244030 (see **Figure 2**).

The proposed Pinecrest BESS would connect to the network via a cut-in to the adjacent 132 kV or 330 kV transmission line.

The project area is generally cleared of substantial vegetation and is understood to have been used historically for agricultural purposes, although noting the existence of mining infrastructure and electricity transmission infrastructure on the land. The project area was previously identified as the site of the Pinecrest Solar Farm which was withdrawn prior to SEARs being granted. The Pinecrest Solar Farm is no longer under development.

The indicative location of the BESS and ancillary infrastructure slopes downwards to the east towards Coss River (refer **Figure 5**), however there is significant variation in slope over the entirety of the project area. This factor will be considered when selecting and designing site access to construct and operate the BESS.

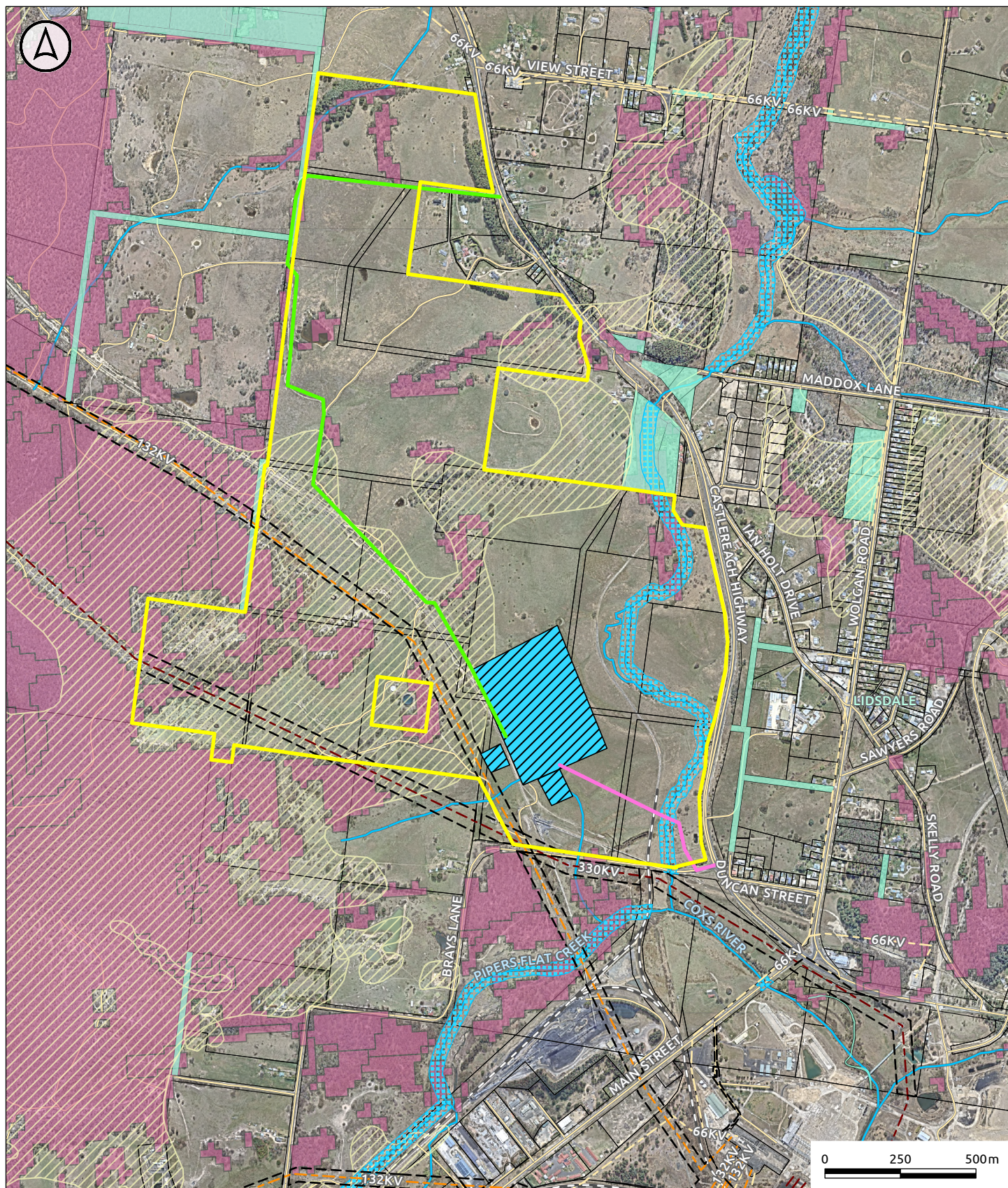
The project area is mapped as bushfire prone land within both vegetation categories 1 and 3.

Existing 132 kV and 330 kV transmission lines are located to the west of the indicative BESS and ancillary infrastructure.

The closest major project is the approved but not constructed Great Western Battery located within 1km to the south west of the location of the Pinecrest BESS. Consent for the Great Western Battery was granted in 2023, with construction expected to commence 2024 (as per the EIS). As this date has passed, it is unclear when construction might commence and thus there is the potential for cumulative impacts should the two projects be in the construction phase at the same time.

The indicative location of the BESS and ancillary infrastructure is predominantly mapped class 5 (severe limitations) land and soil capability, with the remainder of the project area is mapped as either Class 4 (moderate to severe limitations), class 5 (severe limitations) and class 8 (extreme limitations).

Key environmental constraints are depicted in **Figure 4**.

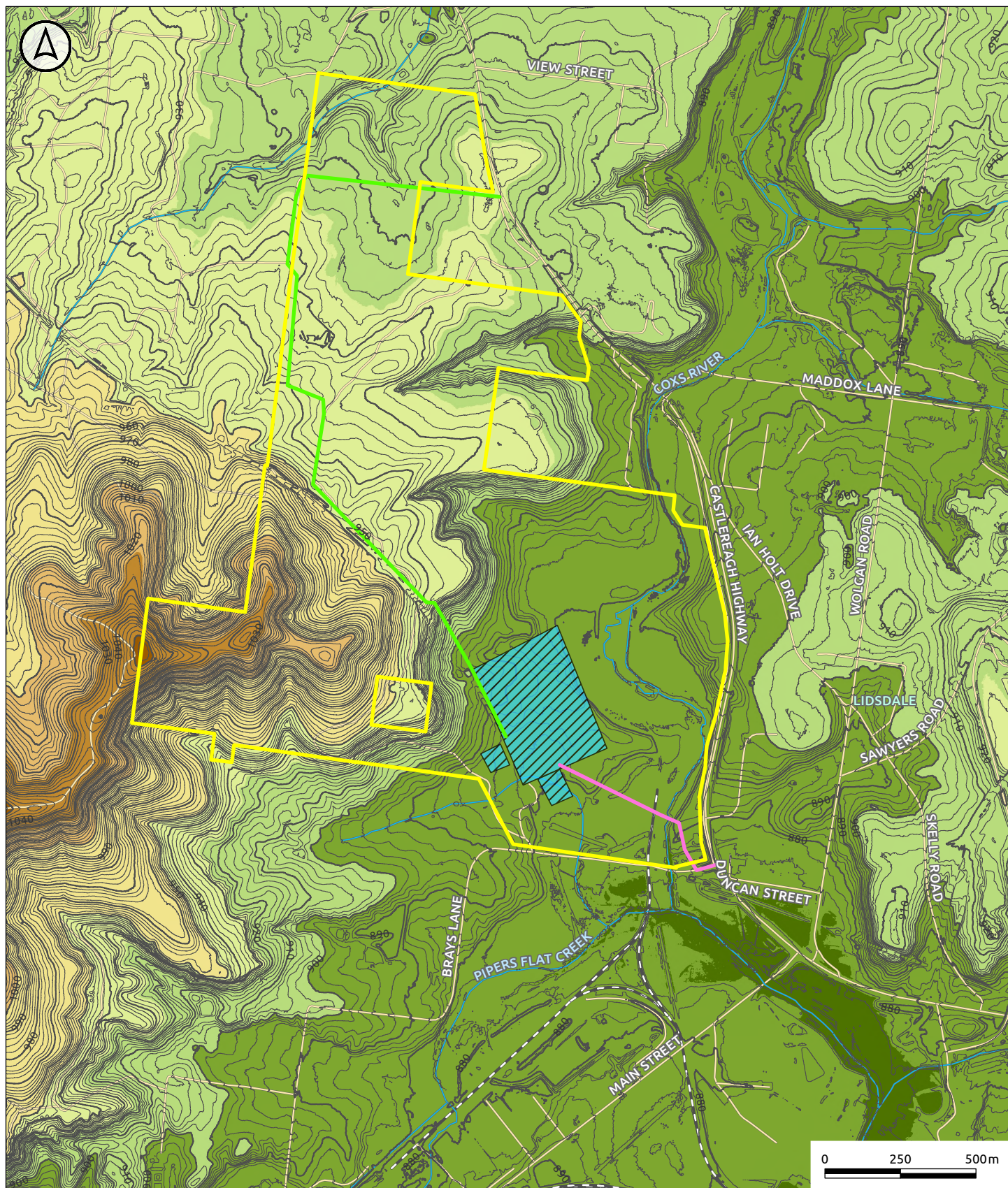


- Legend**
- Project Area
 - Indicative BESS and Ancillary Infrastructure
 - Indicative Site Access Option 1: Karawatha Dr
 - Indicative Site Access Option 2: Brays Ln
 - Lot
 - Road
 - Railway
 - Easement
 - Watercourse
 - Electricity Transmission Line
 - 66kV
 - 132kV
 - 330kV
 - Sensitive Land Areas

- Terrestrial Biodiversity**
- Biodiversity
 - Biodiversity Values
 - Biodiverse riparian land
 - Crown Land

Premise
BANPU ENERGY AUSTRALIA
 Pinecrest BESS

Figure 4
Site Constraints



Legend

- Project Area
- Indicative Site Access Option 1: Karawatha Dr
- Indicative Site Access Option 2: Brays Ln
- Indicative BESS and Ancillary Infrastructure
- Lot
- Road

- Railway
- Major Watercourse
- Natural Contours (10m Interval)
- Natural Contours (2m Interval)
- Elevation (m)
 - < 875
 - 875-900
 - 900 - 925

- 925 - 950
- 950 - 1,000
- 1,000 - 1,025
- 1,025 - 1,050
- >1,050


Premise
BANPU ENERGY AUSTRALIA
Pinecrest BESS

Figure 5
Topography

3. PROJECT DESCRIPTION

3.1 Proposed development overview

The proposed Pinecrest BESS will be located on land identified in **Figure 6**. The project area comprises Lot 1 DP120399, Lot 37 DP658181, Lot 2 DP567915, Lot 2 DP596248, Lot 1 DP406694, Lot 4 DP1088207, Lot 101 DP1137972, Lots 16, 164, 174, 232, 351, 375, 385, and 400 DP751651, and Lots 1 to 10 DP1244030. The indicative BESS and ancillary infrastructure would be located across Lots 16, 164 and 174 DP751651, Lot 2 DP567915 and Lots 4, 6 and 7 DP1244030. The Pinecrest BESS would connect to the network via a cut in to either the existing 132 kV or 330 kV transmission lines between the Mount Piper Substation to the north and Wallerawang Substation to the south.

A BESS is a type of energy storage system which makes use of batteries to store and then distribute energy in the form of electricity. The batteries are charged through the storage of excess energy created in nearby wind or solar farms or, through grid connections.

The proposed development includes an up to 500 MW, 1000 MWh BESS (2 hour duration), as well as on site energy storage containers, MVPS containers, and a connection station including control rooms. The indicative BESS and ancillary infrastructure will cover an area of 14.5 ha, while the project area comprises a total area of 262 ha.

For the construction and subsequent operation, access will be constructed from Castlereagh Highway via either Karawatha Drive or Brays Lane as shown in **Figure 6**. A security fence will be constructed around the BESS and ancillary infrastructure along with, potentially, vegetation screening outside of the fence to screen the BESS from nearby receivers (only if required as a result of the visual assessment).

The Pinecrest BESS will comprise the following key components:

- > Enclosed batteries;
- > Power conversion systems including associated transformers;
- > Underground power and fibre optic cabling interconnecting the equipment;
- > Grid connection equipment including switchgear, protection and control equipment, metering, reactive power equipment, filtering equipment, auxiliary transformers and enclosures/buildings for housing equipment;
- > An underground or overhead transmission line of up to approximately 150 m length to connect the BESS to the 132 kV or 330 kV transmission lines located to the west;
- > Earthing and lightning protection systems;
- > Site office, storage area/enclosure, internal access tracks, on-site parking, security fencing, CCTV, and temporary construction laydown area;
- > Switching station; and
- > Construction or upgrade of a site access from either Karawatha Drive or Brays Lane.

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

- > Site investigations, vegetation clearing, levelling, access way construction, drainage system installation and installation of foundations/supports to install equipment on;
- > Transport to site and installation of equipment;

- > Testing and commissioning of the equipment;
- > Operation and maintenance.

3.1.1 BATTERY TECHNOLOGY

The Pinecrest BESS battery technology type and layout will undergo further refinement in the course of the Environmental Impact Statement (EIS). Given the rapid evolution of battery chemistry and associated technology options, coupled with declining costs, there is a growing emphasis on exploration and pursuit of these advancements. Examples of battery types that may be used are explored further in **Table 3**.

Table 3 – Possible battery types

Battery chemistry	Overview
Lithium-ion	Lithium-ion chemistries are diverse. Nickel-Manganese-Cobalt and Iron Phosphate formulations are commonly used within BESS facilities
Lithium-ion polymer battery	Alternative being investigated as certain formulations are quoted to achieve greater safety (e.g., reduction or elimination of thermal runaway), increased energy density, material stability within a greater operating envelope, and an enhancement in overall performance.
Sodium-ion battery	Alternative option given its environmental abundance, non-flammable nature, and reduced susceptibility to temperature changes relative to Lithium-ion batteries

3.2 Project phases

3.2.1 CONSTRUCTION

The construction period is estimated to be 18 months and is expected to commence in late-2026. Duration of peak construction period is approximately 9 months.

Construction or upgrading activities would occur during standard construction hours (7 am to 6 pm Monday to Friday, 8 am to 1 pm Saturdays, and at no time on Sundays and NSW public holidays.)

Some construction and upgrading activities that are inaudible and would not result in amenity impacts to surrounding receivers may be undertaken outside of standard hours in accordance with construction noise protocol.

A security fence will be installed around the boundary of the BESS and ancillary infrastructure and access tracks will be constructed. Construction will require the use of water trucks, graders, flatbed trucks, skid steers, front end loaders, roller compactors, trenchers, backhoes, gravel trucks and aerial lifts.

Batteries required for the development would be manufactured offsite and delivered for installation following completion of concrete footing installation. Deliveries of other equipment will be made via flatbed trucks on the approved route and via the approved site entrances. Three nominated route options have been identified in **Figure 9** and these will be subject to further analysis in the EIS.

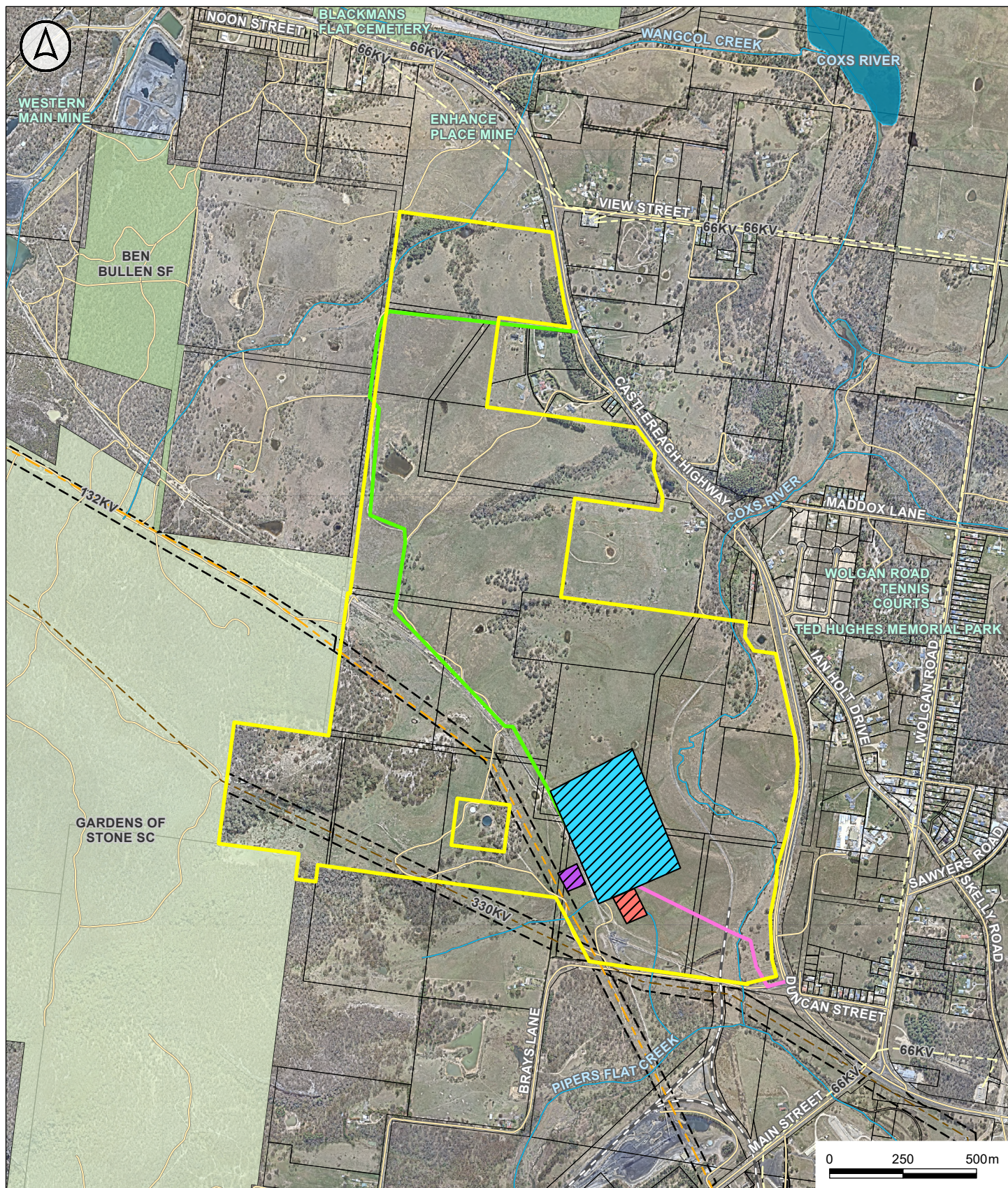
Seven key construction stages (stages 3, 4, 5, 6 overlap during the 9 month peak construction period):

1. Establishment, drainage, roads and fencing.
2. Footing installation.
3. Delivery and installation of cabling.
4. Steel platform installation.
5. MVPS & BESS delivery and installation, including electrical installation.
6. Control room, transformer and switchgear delivery and installation.
7. Commissioning and demobilisation.

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 constructable site.
- > Installation of security fencing and gates to secure the BESS and ancillary infrastructure.
- > Levelling the land as needed.
- > Installation of concrete footings and/or steel platforms on which to install the BESS, MVPS containers and switching station.
- > Delivery and installation of BESS.
- > Underground cabling and construction of earthing system.
- > Auxiliary power protection, indication and control systems.
- > Lighting inside BESS and MVPS containers to provide illumination for operation and/or maintenance, when needed, at night.
- > Control rooms and connection station.
- > Ancillary high voltage equipment, such as circuit breakers, switching equipment, filters, transformers, and other electrical protection equipment.
- > Connection of the BESS to existing transmission network.
- > Testing and commissioning.

The project is expected to generate up to 250 jobs during construction.



Legend

- Project Area
- Indicative Site Access Option 1: Karawatha Dr
- Indicative Site Access Option 2: Brays Ln
- Proposed BESS area
- Potential Switchyard Option 1
- Potential Switchyard Option 2

- Lot
- Road
- Railway
- Major Water Body
- Major Watercourse
- State Forest
- NPWS Reserve

Electricity Transmission Line

- 66kV
- 132kV
- 330kV



BANPU ENERGY AUSTRALIA
Pinecrest BESS

Figure 6
Conceptual Site Layout

3.2.2 OPERATION

It is anticipated that the BESS would be operational for a period of approximately 25 years, operating 24 hours a day, seven days a week. Banpu, via its parent company, Banpu Public Company Ltd, owns the land.

Once operational the Pinecrest BESS will be operated primarily remotely, with staff attending site to undertake routine work including:

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

The above activities are expected to generate up to 5 jobs during operation, associated with operation, maintenance, and vegetation management.

The remainder of the project area could continue to be used for an agricultural purpose. This would assist to control fuel loads surrounding the development and maximise economic output from the subject land.

3.2.3 DECOMMISSIONING

It is anticipated that the Pinecrest BESS would be operational for a period of approximately 25 years after which it would be decommissioned. The switching station may remain on site after decommissioning subject to a decision by the electricity authority. Upon decommissioning, the following indicative steps would occur:

- > BESS and ancillary infrastructure would be unbolted from concrete slabs and removed by crane onto transporters. All site infrastructure would be taken away for resale or to an appropriate recycling or waste facility;
- > Underground services would be cut back to below ground level and capped, with the agreement of landowners; and
- > The land on which the BESS and ancillary infrastructure were located on would then be landscaped to a safe, clean, and stable state enabling it to return to use for agricultural or other permissible purposes.

It is possible that the BESS and ancillary infrastructure may be upgraded rather than decommissioned and the lifespan extended, subject to necessary approvals and agreements with landowners.

3.3 Cumulative impacts

Cumulative impacts, as defined by the *Cumulative impact assessment guideline* (DPIE, 2022) (the 'CIA guideline'), are a result of incremental, sustained, and combined effects of human action and natural variations over time and can be both positive and negative.

The development of any project has the potential to lead to an accumulation of impacts, either associated with the nature of construction or operation activities occurring on site, or in conjunction with other projects being developed in the locality or region.

Cumulative impact assessment levels for each assessment matter, as defined by the CIA guideline, are reproduced in **Table 4**.

Table 4 – Cumulative Impact Assessment Level Definitions

Assessment level	Description (refer to Appendix B of the CIA Guidelines (DPIE 2022))
Detailed assessment (D)	The project may result in significant impacts on the matter, including cumulative impacts. Detailed assessment is characterised by: > Potential overlap in impacts between a future project (e.g. Project A) and the proposed project > Potential for significant cumulative impacts as a result of the overlap, requiring detailed technical studies to assess the impacts > Sufficient data is available on the future project to allow a detailed assessment of cumulative impacts with the proposed project for the relevant matter Uncertainties exist with respect to data, mitigation, assessment methods and criteria
Standard assessment (s)	The project is unlikely to result in significant impacts on the matter, including cumulative impacts. Standard assessments are characterised by: > Impacts are well understood > Impacts are relatively easy to predict using standard methods > Impacts are capable of being mitigated to comply with relevant standards or performance measures The assessment is unlikely to involve any significant uncertainties or require any detailed cumulative impact assessment.
Not applicable (N/A)	No potential overlap in impacts between a future project (e.g. Project A) and the proposed project that would warrant any consideration in the cumulative impact assessment.

There is the potential for cumulative impacts as a consequence of the development of other projects in proximity of the Pinecrest BESS. The EIS will consider potential cumulative impacts in relation to other renewable energy projects, construction projects, industrial and employment generating projects within the locality. Other projects in the locality with the potential to contribute to cumulative impacts are discussed in the following sections and identified in Figure 1 and **Figure 7**.

3.3.1 RENEWABLE ENERGY PROJECTS

An initial review of renewable energy SSD projects in close proximity to the Pinecrest BESS, registered via the Major Projects Portal, has identified the following projects:

- > Lake Lyell Pumped Hydro Energy Storage
- > Great Western Battery
- > Wallerawang BESS

- > Sunny Corner Wind Farm
- > Ben Bullen Wind Farm
- > Mt Piper Battery Energy Storage System

These projects have been considered in **Table 5**.

3.3.2 OTHER PROJECTS

Other, non-renewable, projects with the potential to result in cumulative impacts (including existing mining developments) include:

- > Great Western Highway Blackheath to Little Hartley
- > Springvale Coal Mine
- > Lidsdale Coal Loader
- > Angus Place Coal Mine
- > Lamberts Gully Coal Mine
- > Mt Piper Power Station
- > Mount Piper to Wallerawang Transmission
- > Invincible Coal Mine
- > Cullen Valley Coal Mine
- > Coalpac Mine
- > Baal Bone Coal Mine
- > Airly Coal Mine

These projects have been considered in **Table 5**.

Table 5 – Projects with potential for cumulative impacts

Project	Proximity to the project	Status	Potential construction start date	Potential cumulative impacts
Lake Lyell Pumped Hydro Energy Storage	11 km	Prepare EIS	2025	> Social > Economic
Great Western Highway Blackheath to Little Hartley	23 km	Response to Submissions	Commencement unknown (expected 2024 to 2031)	> Traffic > Social > Economic
Springvale Coal Mine	1.5 km	Operational	N/A	> Noise > Social
Lidsdale Coal Loader	1 km	Operational	N/A	> Noise > Visual
Great Western Battery	1 km	Approved	Commencement unknown (expected 2023)	> Traffic > Noise > Visual

Project	Proximity to the project	Status	Potential construction start date	Potential cumulative impacts
				> Biodiversity > Social > Economic > Hazards > Heritage
Wallerawang BESS	2 km	Approved	Late 2025	> Traffic > Noise > Visual > Biodiversity > Social > Economic
Angus Place Coal Mine	5 km	Operational	N/A	> Noise > Social
Lamberts Gully Coal Mine	3 km	Operational	N/A	> Noise > Visual > Social
Mt Piper Power Station	4 km	Operational	N/A	> Noise > Visual > Social
Mt Piper Battery Energy Storage System	4 km	Approved	Mid 2026	> Traffic > Visual > Social > Economic
Sunny Corner Wind Farm	16 km	Prepare SEARs	2030	> Traffic
Mount Piper to Wallerawang Transmission	On site	Prepare EIS	Late 2025	> Traffic > Noise > Visual > Biodiversity > Social > Economic > Hazards > Heritage
Invincible Coal Mine	10 km	Operational	N/A	> Social

Project	Proximity to the project	Status	Potential construction start date	Potential cumulative impacts
Cullen Valley Coal Mine	11 km	Operational	N/A	> Social
Coalpac Mine	12 km	Operational	N/A	> Social
Baal Bone Coal Mine	20 km	Operational	N/A	> Social
Ben Bullen Wind Farm	21 km	Prepare EIS	2028	> Traffic > Social > Economic
Airly Coal Mine	31 km	Operational	N/A	> Social

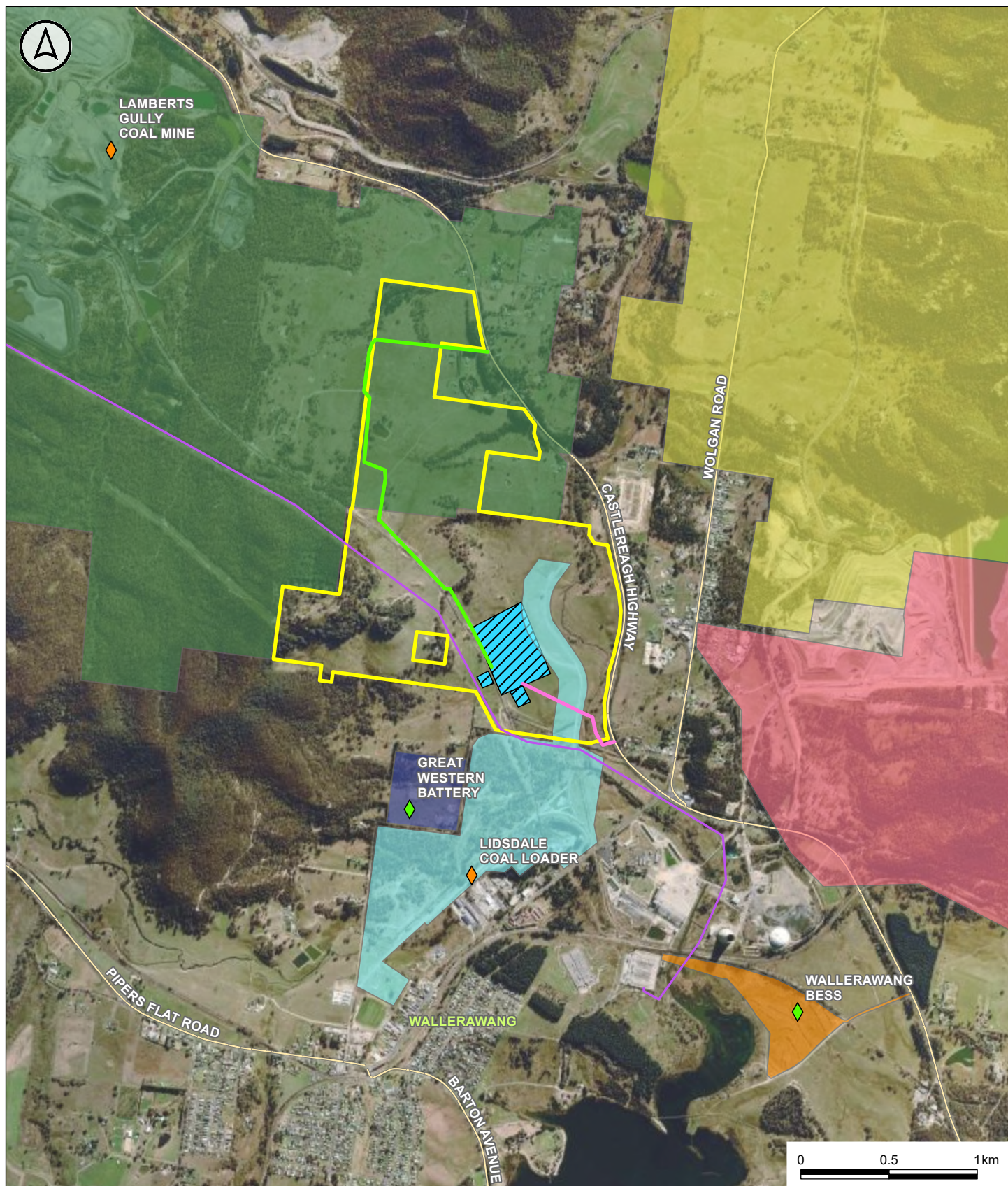
As identified in **Table 6**, the Pinecrest BESS has the potential to interact with surrounding projects and generate cumulative impacts during construction and operation. The Pinecrest BESS EIS would provide dedicated consideration of the potential for cumulative impacts, prepared in accordance with the CIA Guideline, with particular focus on impact assessment areas where cumulative impacts are likely. Additional details of nearby major projects with the potential to interact with the proposed development will be evaluated as necessary during the preparation of the EIS phase through consultation with stakeholders and reviews of relevant local environmental plans, the DPHI's Major Projects database, and local council development application registers. Management and mitigation measures would be provided as appropriate for each assessment matter with the potential to result in cumulative impact. To assist the consideration of cumulative impacts and appropriate mitigation measures in the EIS, summarises potential cumulative impacts associated with construction and operational phases.

Table 6 – Cumulative impact considerations

Potential Impact	Considerations	Scale of impact	Duration	Potential mitigation measures
Construction				
Traffic	Potential cumulative impacts that shall be investigated in further detail include timing of OSOM vehicles travelling to the site from the port and traffic generation of simultaneous construction periods.	Moderate	Short term	Minimise the potential for compounding traffic impacts through coordination with the construction activities of nearby developments and avoiding concurrent construction activities where possible. Review transport routes in consultation with nearby projects to avoid the concentration of impact on local road networks where possible
Noise	Potential for cumulative construction and road traffic noise impacts on surrounding receivers.	Moderate	Short term	Minimise the potential for compounding noise and vibration impacts through coordination with the construction activities of nearby developments and avoiding concurrent construction activities where possible.
Visual	Changes to landscape character and amenity due to placement of construction fencing and machinery, including cranes.	Minor	Short term	Minimise the potential for visual impacts through strategic placement of site infrastructure and use of screening, as required
Biodiversity	Due to proximity to the Great Western Battery, there could be common biodiversity factors across the sites that require consideration.	Moderate	Short term	Minimise and avoid vegetation clearing where possible. A Biodiversity Development Assessment Report will be prepared at EIS stage which considers potential for cumulative impacts.
Social	With reference to the SIA scoping worksheet in Appendix F , the Pinecrest BESS has potential to have both cumulative positive and negative impacts of access, however, is also expected to have positive impacts on communities and livelihoods. Cumulative	High	Short term	Continue to engage and keep the community informed through the construction phase. A Social Impact Assessment shall be prepared at EIS stage to identify and address any adverse cumulative social impacts.

Potential Impact	Considerations	Scale of impact	Duration	Potential mitigation measures
	access impacts could involve impacts on the quality of the road network during construction, and a temporary increase in demand for local accommodation during construction.			
Economic	The Pinecrest BESS may have potential cumulative impacts on the economic development of the area. These impacts may relate to employment generation, influx of spending at local businesses, availability of short term accommodation.	Moderate	Short term	These potential impacts would be considered in at EIS stage.
Heritage	As no on-site Aboriginal heritage surveys have been undertaken at this stage it is unknown whether there could be cumulative impacts on Aboriginal heritage.	Unknown	Short-term	An Aboriginal Cultural Heritage Assessment Report shall be prepared at EIS stage to identify and manage cumulative impacts.
Operational				
Noise	Potential for cumulative operational noise impacts on surrounding receivers.	Moderate	Long term	Consideration of placement of BESS components on site, or installation of noise walls to ensure compliance with the relevant criteria.
Visual	Changes to the regional landscape character and visual amenity from large scale energy projects.	Minor	Long term	Consideration of external finishes and landscaping.
Social	Social impacts of multiple large scale projects impacting amenity of surrounding area.	Minor	Long term	Continue to engage and keep the community informed through the operation phase. Community benefit sharing.
Economic	The Pinecrest BESS will create ongoing operational employment opportunities.	Minor	Long term	N/A

Potential Impact	Considerations	Scale of impact	Duration	Potential mitigation measures
Hazards	Due to proximity to the Great Western Battery, there is potential for cumulative bushfire and hazard risks or impacts associated with the Pinecrest BESS.	Moderate	Long term	Consideration of asset protection zones, placement of BESS components on site, and storage of materials on site. Suitable mitigation measures would be identified in a preliminary hazard analysis and a bushfire assessment report which would be prepared at EIS stage.



Legend

- Project Area
- Indicative BESS and Ancillary Infrastructure

Access Options

- Site Access Option 1: Karawatha Dr
- Site Access Option 2: Duncan St
- Major Road

Major Projects

- ◆ Approved, Renewable
- ◆ Operational, Non-Renewable
- Mount Piper to Wallerawang Transmission
- Angus Place Colliery Holding
- Great Western BESS
- Lidsdale Siding Coal Loader

- Springvale Colliery Holding
- Wallerawang BESS
- Western Main Colliery



BANPU ENERGY AUSTRALIA
Pinecrest BESS

Figure 7
Major Projects

3.4 Consideration of alternatives

Development options considered as part of this Scoping Report and to be considered in greater detail in the EIS are described in **Table 7** below.

Table 7 – Development options

Alternatives:		Description:
Option 1	Base Case, 'Do Nothing'	Option 1 would involve not installing and operating a BESS at the 257 Brays Lane 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 257 Brays Lane.
Option 4	BESS at Brays Lane, Lidsdale, 'preferred option'	Option 4 would involve the installation and operation of a BESS at the 257 Brays Lane.

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

3.4.1 OPTION 1

Option 4 is preferred over Option 1. Proceeding with Option 1 would be inconsistent with the strategic context set by State and local policy, including:

- > Goal 22 of the NSW 2021 Plan, 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, which seeks to attract renewable energy investment;
- > Objectives of the Safeguard legislation to improve the affordability, reliability and sustainability of energy by addressing the shortfall in firm capacity during times of peak demand;
- > Objective 15 of the Regional Plan, which seeks to provide capacity to reduce the Region's reliance on fossil fuels, reduce emissions, and use of renewable energy;
- > Planning Priority 9 of the LSPS, which seeks to attract investment and employment growth in the Lithgow LGA.

Option 1 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. It would also result in a lack of investment or job creation in the Lithgow LGA.

3.4.2 OPTION 2

Option 4 is preferred over Option 2 as the latter would result in increased costs and environmental impacts associated with the acquisition of a suitable property, given the proximity of the Pinecrest BESS to the Mount Piper and Wallerawang Substations, and construction of increased lengths of connecting infrastructure (likely to include earthworks and vegetation removal), as compared to the indicative location of the BESS and ancillary infrastructure. The location of the BESS and ancillary infrastructure

between two high voltage substations, and proximity to existing transmission lines minimises the required connecting infrastructure.

3.4.3 OPTION 3

Option 4 is preferred over Option 3 as Option 4 is a reliable method, 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. Option 3 may not be suitable due to its limited area or other reasons, requiring the seeking out and acquisition of an alternative site and construction of connecting infrastructure.

4. STATUTORY CONTEXT

The key statutory requirements for the project are set out in **Table 8**.

Table 8 – Statutory considerations

Matter	Comment
Power to grant consent	Section 4.5 of the EP&A Act provides that the consent authority is the Independent Planning Commission or the Minister based on the development type. Section 4.36(2) of the EP&A Act provides that a State Environmental Planning Policy may declare any development, or any class or description of development, to be State significant development. The proposed development is for the purposes of electricity generating works that has an estimated development cost (EDC) of more than \$30 million and is therefore declared to be State significant in accordance with Section 20 of Schedule 1 of the Planning Systems SEPP. On this basis the consent authority for the proposed development is likely to be the Minister. However, it is noted that if any of the following occurs the consent authority will become the Independent Planning Commission in accordance with Section 2.7(1) of the Systems SEPP: > The council of the area in which the development is to be carried out (LCC) 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; or > 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	Electricity generating works are prohibited in the RU1 Primary production zone which applies to the subject land. Notwithstanding, the development is permitted with consent on the following grounds: > The proposed development satisfies Section 2.6(1)(a) of the Systems SEPP as electricity generating works are permitted with consent within prescribed rural zones under Section 2.36(1)(b) of the Infrastructure SEPP. Under Section 2.35 of the Infrastructure SEPP, prescribed rural zones include the RU1 Primary Production zone which applies to the land under the Lithgow LEP 2014.

Matter	Comment
Other approvals	Commonwealth approvals may be required for the following reasons:
Ore-existing conditions to exercising the power to grant consent	> A search for potential matters of national environmental significance (MNES) that may trigger the need for referral to the Australian Department of Climate Change, Energy, the Environment and Water (DCCEEW) via the online Protected Matters Search Tool (PMST) - (results shown in Appendix B): • Identified no World Heritage Properties or National Heritage Places protected by the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act). • Identified three (3) threatened ecological communities with the potential to occur in or within proximity to the Pinecrest BESS. • Identified forty-nine (49) threatened species which may be present in or within proximity to the Pinecrest BESS. • Identified eight (8) migratory bird species which may be present in or within proximity to the Pinecrest BESS. • Identified nineteen (19) listed marine species which may be present in or within proximity to the Pinecrest BESS. It is expected that the Pinecrest BESS will be self-referred to Australian DCCEEW, as a matter of precaution in case there are MNES on the site. > A review of the National Native Title Tribunal's Native Title Register and Native Title Vision online database identified that the Pinecrest BESS is located within an active Native Title Claim area (NC2018/002) referred to as 'Warrabinga-Wirajuri #7" (refer Section 6.9.2). No site specific native title claims were observed nor were any Indigenous Land Use Agreements applying to the land under the <i>Commonwealth Native Title Act 1993</i> (the Native Title Act).
Mandatory matters for consideration	Pursuant to Section 4.15 of the EP&A Act, the following mandatory matters for consideration apply: > Relevant environmental planning instruments, including: • <i>State Environmental Planning Policy (Resilience and Hazards) 2021</i> (the Hazards SEPP): > Chapter 3 Hazardous and offensive development; and > Chapter 4 Remediation of land. • <i>State Environmental Planning Policy (Transport and Infrastructure) 2021</i> (the Infrastructure SEPP): > Chapter 2 Infrastructure. • <i>State Environmental Planning Policy (Planning Systems) 2021</i> (the Systems SEPP):

Matter	Comment
	> Chapter 2 State and regional development. • <i>State Environmental Planning Policy (Biodiversity and Conservation) 2021</i> (the Biodiversity SEPP): > Chapter 3 Koala habitat protection 2020 > Chapter 6 Water catchments • Lithgow LEP 2014. > The relevant Development Control Plan (DCP) (the Lithgow DCP 2021). It should be noted that the application of a DCP is excluded from SSD under Section 2.10 of the Systems SEPP. > The likely impacts of the development including environmental impacts on natural and built environments and social and economic impacts in the locality. > The suitability of the site for the development. > The public interest.

4.1 State Environmental Planning Policies

4.1.1 STATE ENVIRONMENTAL PLANNING POLICY (RESILIENCE AND HAZARDS) 2021

The Hazards SEPP comprises several chapters including *Chapter 3 Hazardous and Offensive Development* and *Chapter 4 Remediation of Land*, which both potentially apply to this project. These chapters have been addressed below.

4.1.1.1 Chapter 3 Hazardous and offensive development

Section 3.7 of the Hazards SEPP requires the consideration of current circulars or guidelines prepared by the Department of Planning in determining whether a development is:

- > hazardous storage establishment, hazardous industry, or other potentially hazardous industry; or
- > offensive storage establishment, offensive industry, or other potentially offensive industry.

The current and most recent guidelines prepared by the Department of Planning, the *Hazardous and Offensive Development Application Guidelines – Applying SEPP 33* (Applying SEPP 33 Guideline; Department of Planning 2011), includes the screening tests to be used to determine whether a development is potentially hazardous development. If the screening tests indicate that a development is potentially hazardous development, a preliminary hazard analysis (PHA) is required to be provided as part of the DA. The type of screening test to be used is dependent upon the class, as categorised under the Australian Dangerous Goods Code (ADG; National Transport Commission 2020) of dangerous goods proposed to be accommodated on-site.

The dangerous good associated with BESS are lithium batteries which are a class 9 dangerous good under the ADG Code. Class 9 goods do not exceed the screening thresholds under the guidelines under the Applying SEPP 33 Guideline as they “pose little threat to people or property” (Department of Planning 2011, p. 33).

Notwithstanding, a Preliminary Hazard Analysis (PHA) would be prepared to support the project EIS to consider risks associated with the batteries consistent with the expected advice of the project SEARs.

4.1.1.2 Chapter 4 Remediation of Land

Section 4.6(1) of the Hazards SEPP states that a consent authority must not consent to the carrying out of development unless it has considered whether the land is contaminated. If the land is contaminated, the consent authority must not consent to the carrying out of development unless it is suitable for the proposed use in its contaminated state or will be suitably remediated before the land is used for that purpose.

A search of the NSW EPA Contaminated land record was completed for contaminated land within the Lithgow LGA on 31 January 2025. Four sites are noted within the LGA, with the closest site identified at 110 Skelly Road, Lidsdale. The site is located approximately 950 metres from the Pinecrest BESS and is known as the Kerosene Vale Ash Repository.

The site has historically been utilised for agricultural purposes, including grazing activities, and industrial activities including facilitating the Lidsdale Coal Loader.

Based on the above, the project EIS will contain consideration of contamination within the EIS and provide necessary mitigation measures or further analysis should potential contamination be identified on site.

4.1.2 STATE ENVIRONMENTAL PLANNING POLICY (TRANSPORT AND INFRASTRUCTURE) 2021

The Infrastructure SEPP comprises several chapters, including *Chapter 2 Infrastructure*.

4.1.2.1 Chapter 2 Infrastructure

Development for the purposes of electricity generating works is prohibited in the RU1 zone under the Lithgow LEP 2014. However, Section 2.36(1)(b) of the Infrastructure SEPP permits electricity generating works in prescribed rural zones, including the RU1 zone. The Pinecrest BESS is therefore permitted with consent via the Infrastructure SEPP.

Section 2.42 of the Infrastructure SEPP states that development consent must not be granted for a state or regionally significant development for the purposes of electricity generating works, where the project is located in close proximity to a regional city. Regional cities include Albury, Armidale, Bathurst, Dubbo, Griffith, Orange, Tamworth, Wagga Wagga, Goulburn and Mudgee. As per the Regional Cities Map contained within the Infrastructure SEPP, there are no regional cities in close proximity to the proposed Pinecrest BESS.

4.1.3 STATE ENVIRONMENTAL PLANNING POLICY (PLANNING SYSTEMS) 2021

The Systems SEPP comprises several chapters, including *Chapter 2 State and regional development*.

Section 2.6 of the Systems SEPP declares that development is SSD for the purposes of the Act if the development is specified in Schedule 1 or 2.

Section 20 of Schedule 1 confirms that electricity generating works and heat or co-generation projects with an estimated development cost (EDC) of more than \$30 million (or more than \$10 million where

located on an environmentally sensitive area of state significance) is an SSD project. As the project EDC exceeds \$30 million, the Pinecrest BESS project is SSD.

4.1.4 STATE ENVIRONMENTAL PLANNING POLICY (BIODIVERSITY AND CONSERVATION) 2021

The Biodiversity SEPP comprises several chapters, including koala habitat protection and water catchments, which are discussed below:

4.1.4.1.1 Chapter 3 Koala habitat protection 2020

Under Section 3.3(1) of the Biodiversity SEPP, the SEPP applies to land within the RU1 Primary Production, RU2 Rural Landscape and RU3 Forestry and equivalent zones in an LGA not marked with a '*' in Schedule 2 of the SEPP. A three-step process applies where the SEPP applies and the development site has an area of more than one (1) hectare.

The Pinecrest BESS is located within the RU1 zone and therefore, Chapter 3 applies. The preliminary biodiversity assessment did not identify likely koala habitat on site however more detailed analysis would be completed in relation to the Biodiversity Development Assessment Report (BDAR) and provided as part of the EIS to address any potential impacts to koala habitat.

4.1.4.1.2 Chapter 4 Koala habitat protection 2021

Under Section 4.4(1) of the Biodiversity SEPP, the Chapter applies to the LGAs listed in Schedule 2 of the SEPP, unless the site is located within the RU1 Primary Production, RU2 Rural Landscape or RU3 Forestry zone in an LGA that isn't marked with a '*' in Schedule 1. City of Lithgow is not marked with a '*' and the development site is located within the RU1 zone. Chapter 4 therefore does not apply.

4.1.4.1.3 Chapter 6 Water catchments

Under Section 6.1(a) of the Biodiversity SEPP, the SEPP applies to land within the Sydney Drinking Water Catchment. The Pinecrest BESS is located within the Sydney Drinking Water Catchment and therefore, Chapter 6 applies.

Sydney Drinking Water Catchment is identified as a regulated catchment and therefore, the following sections of *Part 6.2 Development in regulated catchments* apply:

- > Under Section 6.6(2), development consent must not be granted to development on land within the Sydney Drinking Water Catchment unless the consent authority is satisfied that the development ensures the quality of water entering a natural waterbody is as close to a neutral or beneficial effect, and that the impact on water flow in a natural water body will be minimised.
- > Under Section 6.7(2), development consent must not be granted within the Sydney Drinking Water Catchment unless the consent authority is satisfied that:
 - Adverse impacts on terrestrial, aquatic or migratory animals or vegetation is kept to the minimum necessary to carry out the development;
 - there are no adverse impacts on aquatic reserves;
 - a controlled activity approval under the *Water Management Act 2000* has been obtained if required; and
 - erosion of land abutting a natural waterbody or sedimentation of a natural waterbody is minimised.

- > Under Section 6.8(2), development consent must not be granted on flood liable land within the Sydney Drinking Water Catchment unless the consent authority is satisfied that in the event of a flood that the development will not result in the release of pollutants that would adversely impact on water quality, or have adverse impacts on the natural recession of floodwaters.

Under Section 6.11, the consent authority is required to proposed land uses abutting a natural waterbody, and conflicts between land uses *Part 6.5 Sydney Drinking Water Catchment* also includes additional provisions under Section 6.61 requiring that development consent must not be granted within the Sydney Drinking Water Catchment unless the consent authority is satisfied that the carrying out of the development will have a neutral or beneficial effect on water quality.

Further assessment of potential water quality impacts, erosion impacts, biodiversity impacts, and flood impacts will be undertaken and provided as part of the EIS. It is also expected that a Land Use Conflict Risk Assessment (LUCRA) would be required by the SEARs to consider any potential land use conflicts.

4.2 Other Environmental Planning Policies

4.2.1 LITHGOW LOCAL ENVIRONMENTAL PLAN 2014

The project area is zoned RU1 Primary Production , while the site access options are located on land zoned SP2 Infrastructure (Roads and Traffic Facility), under the LEP (see **Figure 8**). Electricity generating works are prohibited in the RU1 and SP2 zones via the LEP.

However, electricity generating works are permissible under Section 2.36(1) Division 4 of the Infrastructure SEPP. The Infrastructure SEPP prevails over any inconsistency with an LEP due to Section 2.7 of the Infrastructure SEPP. Section 2.36(1) of the Infrastructure SEPP provides that development for the purpose of electricity generating works may be carried out with consent, on land in a prescribed non-residential zone, such as the RU1 and SP2 land use zones. Therefore, the proposed development is permissible with development consent under the Infrastructure SEPP.

The objectives of RU1 Primary Production zone under the LEP are:

- *To encourage sustainable primary industry production by maintaining and enhancing the natural resource base.*
- *To encourage diversity in primary industry enterprises and systems appropriate for the area.*
- *To minimise the fragmentation and alienation of resource lands.*
- *To minimise conflict between land uses within this zone and land uses within adjoining zones.*
- *To minimise the environmental and visual impact of development on the rural landscape.*
- *To provide for recreational and tourist development and activities of an appropriate type and scale that do not detract from the economic resource, environmental or conservation value of the land.*
- *To maintain or improve the water quality of receiving water catchments.*

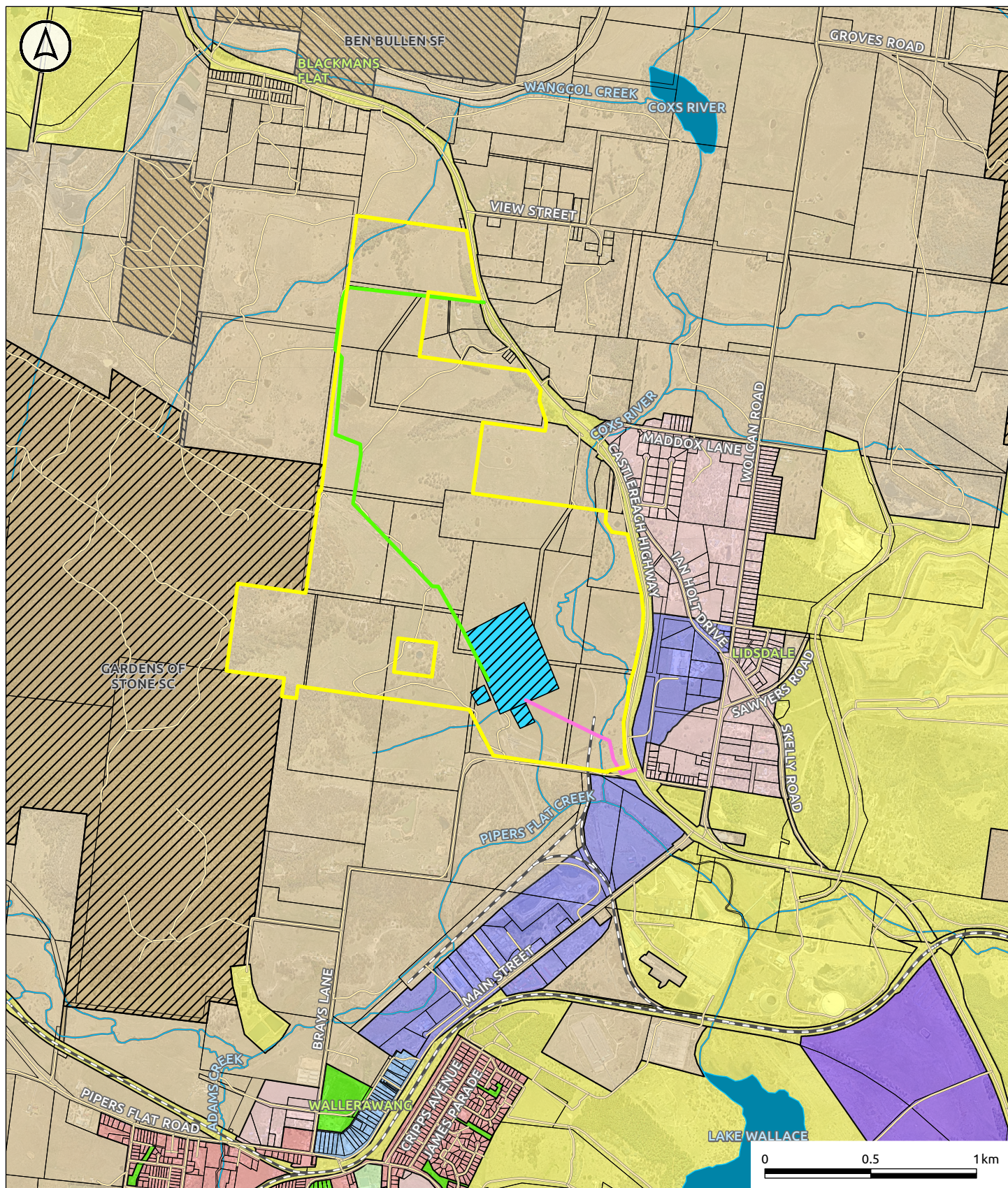
The objectives of SP2 Roads and Traffic Facility under the LEP are:

- *To provide for infrastructure and related uses.*
- *To prevent development that is not compatible with or that may detract from the provision of infrastructure.*

- *To maintain or improve the water quality of receiving water catchments.*

The Pinecrest BESS is not inconsistent with the objectives of the RU1 zone on the basis that it provides for development that would not result in conflict with other land uses within the zone, will be supported by appropriately scoped assessments to consider all impacts, and will ensure that residual impacts that cannot be avoided are appropriately mitigated. The Pinecrest BESS will generate employment opportunities within the Lithgow LGA and will allow for the continued use of the site for agricultural purposes in conjunction with the electricity generating works.

The Pinecrest BESS is not inconsistent with the objectives of the SP2 zone, as any associated works within the SP2 would be related to site access and required road upgrades, providing for required infrastructure to service the land.



Legend

	Project Area		Major Water Body
	Indicative BESS and Ancillary Infrastructure		Major Watercourse
	Indicative Site Access Option 1: Karawatha Dr		State Forest
	Indicative Site Access Option 2: Brays Ln		NPWS Reserve
	Lot	Land Zoning (LZN)	
	Road		E1 - Local Centre
			E4 - General Industrial

	E5 - Heavy Industrial
	R2 - Low Density Residential
	R5 - Large Lot Residential
	RE1 - Public Recreation
	RE2 - Private Recreation
	RU1 - Primary Production
	RU2 - Rural Landscape
	RU3 - Forestry
	SP2 - Infrastructure



BANPU ENERGY AUSTRALIA
Pinecrest BESS

Figure 8
Land Zoning

5. ENGAGEMENT

The following sub-sections describe the engagement activities that have already been carried out for the Pinecrest BESS. Banpu, bd infrastructure and Premise coordinated the carrying out of community and stakeholder engagement during the scoping phase of the project. Early community engagement aimed to provide opportunities for the community to understand the Pinecrest BESS and to provide feedback about impacts and benefits that could be fed into project development and assessment. Community concerns will be considered by Banpu through the design process and will be further assessed in the EIS.

5.1 Engagement to Date

5.1.1 DEPARTMENT OF PLANNING, HOUSING AND INFRASTRUCTURE

Banpu and Premise completed a pre-scoping meeting with DPHI on 2 December 2024 to introduce the project and obtain preliminary feedback. Key matters that were raised in this meeting included the following:

- > Consideration of cumulative impacts for all surrounding major projects;
- > Careful consideration of community engagement, particularly in relation to engagement fatigue;
- > Consideration of noise and visual impacts on surrounding receivers

This input from DPHI has contributed to shaping the initial assessment criteria, as well as the next steps in the investigative phases.

5.1.2 LITHGOW CITY COUNCIL

Banpu provided a briefing to LCC planning staff on 27 November 2024. Initial feedback was generally positive, with LCC identifying that the Pinecrest BESS is in line with LCC's Lithgow Emerging Economies Project (LEEP).

Further engagement with the elected councillors occurred on 17 March 2025 to present the Pinecrest BESS, while a further meeting between elected councillors and developers (both Banpu and other developers in the area) occurred on 3 April 2025.

LCC have not made any specific comments in relation to the Pinecrest BESS, however there was concern about cumulative impacts, particularly in relation to workforce accommodation. Consideration of workforce accommodation has been discussed in **Section 3.3**.

A follow up meeting between elected councillors and developers is planned for early May to continue the discussion of workers accommodation.

5.1.3 TRANSGRID

An online discussion between Banpu and Transgrid's connections team occurred on 30 October 2024 to discuss the viability of connecting the Pinecrest BESS to the Transgrid network. The feedback confirms that the Transgrid connection team is reasonably positive that the Pinecrest BESS can be connected, either on the 132 kV or the 330kV network.

A further update was provided to Transgrid via email on 21 January 2025, with no further feedback received.

5.1.4 COMMUNITY

The 'community' encompasses a wide range of individuals and groups who are either interested in or impacted by a State significant project. This includes local residents, community groups, Aboriginal and Torres Strait Islander communities, culturally diverse groups, peak bodies, and businesses. A desktop analysis and preliminary visual assessment was undertaken to identify the affected community.

A summary of consultation activities carried out with identified community is included in **Table 9**.

Table 9 – Summary of community consultation activities

Engagement activity	Target stakeholders	Activity and stakeholders reached
Newsletter Letterbox drop	> Surrounding landowners and occupiers	A newsletter was distributed to 826 properties during the week of 6 January 2025. It provided information to local communities and residents and gave notice of upcoming consultation.
Website update	> All interested stakeholders	The webpage acted as a central repository of information relating to the project, including publicly available documents and communications materials prepared by the proponent. The website went live the week of 6 January 2025. www.pinecrestbess.com.au
Newspaper/online Advertisement	> Surrounding landowners and occupiers > All interested stakeholders > Immediate landowners and occupiers > Surrounding business owners and occupiers, Aboriginal stakeholders, local community groups and government agencies.	An advertisement was run in the Lithgow Mercury and its online version across two weeks from 24 January to 7 February 2025.
Phone calls and meetings	> Immediate landowners and occupiers	Centennial Coal (a subsidiary company of Banpu Energy Australia) conducted one-on-one phone calls and meetings starting the week beginning 13 January 2025 for residents of Karawatha Drive to introduce the project and establish lines of communication. This activity also included the current licensee of the site.

Engagement activity	Target stakeholders	Activity and stakeholders reached
		Further phone calls and emails occurred in April 2025 attempting contact with neighbouring owners on Brays Lane. [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED]
Council briefing	> Lithgow City Council	An in person briefing with LCC occurred on 27 November 2024. The briefing provided targeted and tailored information to LCC and gathered feedback on community values and expectations. Further engagement is planned with elected councillors on the 7th of April.
Email notification	> Surrounding business owners and occupiers, Aboriginal stakeholders, local community groups and government agencies.	Email correspondence on 21 January to local State and Federal Members, Andrew Gee MP, and Paul Toole MP introducing the project and provided an offer of a briefing. Email introducing the project and highlighting upcoming consultation opportunities and providing an offer of a briefing sent between 24 January and 7 February to: Bathurst Aboriginal Land Council Bathurst Wiradyuri and Aboriginal Community Elders Group Gundungurra Tribal Council Aboriginal Corporation Mingaan Aboriginal Corporation North-East Wiradjuri Corporation Wiradyuri Council of Elders Wellington Valley Wiradjuri Aboriginal Corporation Springvale Western Region Community Consultative Committee Central Tablelands Local Land Services

Engagement activity	Target stakeholders	Activity and stakeholders reached
		• Lithgow District Chamber of Commerce • CWA Wallerawang-Lidsdale Branch • Central Tablelands Regional Landcare network
Online Community information session	> Immediate and surrounding local landowners and occupiers > All interested stakeholders > Surrounding business owners and occupiers, Aboriginal stakeholders, local community groups and government agencies.	The online information session was held via zoom on Tuesday 11 February at 6pm. It provided a brief overview of the proponent and the proposed project. 1 person attended the session
In person Community drop-in sessions	> Immediate and surrounding local landowners and occupiers > All interested stakeholders > Surrounding business owners and occupiers, Aboriginal stakeholders, local community groups and government agencies.	Two sessions were held: > Session 1: 18 February 4-7pm, Black Gold Motel, Wallerawang attended by 5 people > Session 2: 19 February 7-8am, Wallerawang Bakery attended by approximately 5 people

5.2 Community View

The community were largely agreeable to or neutral about the project, with many requesting to be kept up to date. Key questions from the engagement were:

- > **Previous proposal:** During an information session one community member queried the cancellation of the previous project (referring to the withdrawn Pinecrest Solar project).
- > **Location of project:** Why was this particular location chosen? How big is the site? Do you own the site?
- > **Batteries:** How will battery be charged? What is the lifespan of a battery? Where does the lithium for the battery come from? Once the batteries wear out, do you replace them? How much does it power?
- > **About Banpu Energy Australia:** Interest was shown in Banpu Energy Australia and its other projects and its relationship to Centennial Coal.
- > **Noise impacts:** Questions were raised around whether batteries were noisy. It was noted that residents often call Centennial Coal about noise when the coal loader on Brays Lane fails. Concerns were raised following the approval of 10 metre noise walls for the Great Western Battery.

- > **Visual impacts:** Concerns were raised about direct views from Ian Holt Drive, with one community member noting that the Pinecrest BESS would be visible from their kitchen window. Tree planting along Castlereagh Highway was suggested.
- > **Fire Risks:** Questions were raised about the risk of explosion and fire, access for emergency services, whether emergency services would have suitable equipment to manage a battery fire, and how local brigades would fund required equipment. It was also noted that the area is fairly open and if a fire came from the west that it would be challenging for emergency services to control. Concerns were also raised regarding toxins released during a fire event.
- > **Construction and traffic:** Concerns were raised about the condition of Karawatha Drive and potential impacts from construction traffic, and dust generation. Potential access issues were also flagged regarding the slope of the land and movement of heavy machinery. Alternative access was suggested to the south of the site.
- > **Other projects:** Comments were made about a nearby proposed power line upgrade and timing with the Pinecrest BESS.
- > **Transmission connection:** Questions were raised about proposed connections to the transmission lines, with one person noting that the Pinecrest BESS is the perfect spot due to proximity of the line.
- > **Engagement:** Suggestions were made regarding future engagement, include a free local newspaper, radio station, and Facebook groups.
- > **Employment and procurement:** The changing industry was noted, with comments made around the provision of employment opportunities for young people. Concerns were raised about Wallerawang offering limited opportunities for young people, causing people to move away. One stakeholder invited the Pinecrest BESS to participate in an upcoming industry forum for local suppliers.
- > **Other:** One stakeholder asked about fencing of the access roads, BESS and ancillary infrastructure, and requested advanced notice of the construction commencement.

5.3 Future Community Engagement

Banpu is committed to building ongoing relationships of trust with the local community and impacted neighbours. This commitment to appropriate and responsive engagement will continue throughout the course of the EIS preparation. By providing ongoing communication with stakeholders, we ensure the opportunity to eliminate, reduce or manage impacts identified and explored in the project planning stage along with opportunities to enhance benefits of the project.

Banpu Energy Australia intends to engage with:

- > LCC
- > Springvale Community Consultative Committee
- > Surrounding residents, landowners, businesses and local community groups.
- > Department of Planning, Housing and Infrastructure
- > Lumea (Transgrid)
- > Transport for NSW

Proposed stakeholder engagement will be informed by a Community and Stakeholder Engagement Plan as part of the EIS. The community and stakeholder engagement activities will aim to meet the following objectives:

- > To ensure all community and stakeholders have access to factual, 'plain English' and up-to-date information in which to make informed decisions regarding the project.
- > To further explore initial concerns or ideas raised by community and regulatory stakeholders in early engagement activities.
- > To work with community and regulatory stakeholders to mitigate remaining concerns, enhance opportunities for benefits and manage remaining impacts.



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 *State significant development guidelines – preparing a scoping report* (DPIE 2022), a number of factors have been considered through this process, including:

- > the scale and nature of the likely impact of the Pinecrest BESS and the sensitivity of the receiving environment;
- > whether the Pinecrest BESS 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, to the extent known at the scoping phase.

The following sections provide details on specific assessment areas. A summary table is provided in **Appendix A** categorising these areas as per the Scoping Report Guidelines. By reference to Appendix A of the guidelines, the level of assessment is either detailed, standard or 'matters requiring no further assessment in the EIS'. Detailed assessment is for those impacts likely to have a significant impact, including cumulative impacts. A standard assessment is unlikely to result in significant impacts. A standard assessment may still include technical specialists however impacts in this category are likely to be well understood and easy to predict.

The level of assessment is identified as standard and is summarised as follows:

- > Detailed
 - Access;
 - Visual
 - Noise and vibration
 - Biodiversity;
 - Hazard and Risks;
 - Aboriginal Heritage; and
 - Social Impact.
- > Standard
 - Built Environment;
 - Economic;
 - Land Use;
 - Water; and
 - European heritage.
- > Matters requiring no further assessment in the EIS are as follows:
 - Air quality.

6.2 Access

A preliminary review of potential traffic and transport routes has been completed by Premise, with a detailed route assessment to be undertaken at EIS stage.

6.2.1 TRANSPORT ROUTE

The proposed port of import for BESS and ancillary infrastructure is likely to be either the Port of Newcastle or Port Botany. Three potential transport routes have been identified to allow for size limitations of infrastructure (see **Figure 9**). The potential routes are as follows:

- > Option 1: Port of Newcastle > Newcastle Road > M15 Hunter Expressway > B84 Golden Highway > Bylong Calley Way > Castlereagh Highway
- > Option 2: Port Botany > M8 > M4 Western Motorway > A32 Great Western Highway > B55 Castlereagh Highway
- > Option 3: Port Botany > M5 South-Western Motorway > M31 Remembrance Driveway > M31 Hume Highway > B81 Lachlan Valley Way > A41 Mid Western Highway > A32 Great Western Highway > B55 Castlereagh Highway

The route shall be determined prior to lodgement of the EIS and a route assessment completed to determine any impacts associated with the project and confirm the suitability of the route.

6.2.2 VEHICLE ACCESS

Access will be from Castlereagh Highway with two locations currently under investigation.

Access options include via either Karawatha Drive or Brays Lane. Further consideration is required for both access options to ensure any potential impacts are reasonably managed, and construction requirements are feasible. Considerations for the Karawatha Drive access is the length, topography, and need to upgrade the road, whereas Brays Lane access would require a rail crossing (under the same ownership as the proponent) and a bridge to be constructed over Coxs River. Further consideration for these options shall be given at EIS stage and will be dependent on the physical size of the BESS components, including the battery cells and the transformer.

Access will be upgraded or constructed to accommodate the largest vehicle accessing the site. Banpu will consult with TfNSW and LCC in relation to access requirements and any local road upgrades that may be required to accommodate project construction traffic movements. LCC have provided no specific comments on road access to date.

The construction access will also be used by operational traffic, which is expected to be around 5-10 light vehicles per week.

6.2.3 TRAFFIC GENERATION

The construction phase of the Pinecrest BESS triggers much higher traffic generation rates, and larger vehicles, than the operational phase, and thus this portion of the project would be used to generate traffic generation rates for the Pinecrest BESS during the EIS stage.

Traffic generation figures will be considered by reference to light and heavy vehicles accessing the project area during the construction phase and will consider current traffic rates on Castlereagh Highway. It is noted that the traffic impact assessment (TIA) for the Great Western Battery project

included traffic counts on Castlereagh Highway in 2021, with factors applied to 2023 rates. The peak traffic movements on Castlereagh Highway in proximity to the project area anticipated peak traffic flows to be approximately 458 in the AM peak (8am to 9am) and 585 in the PM peak (3pm to 4pm). Updated traffic generation figures will be considered in a TIA specific to the Pinecrest BESS at EIS stage.

The anticipated traffic during the construction phase will be influenced by the arrival and departure of construction workers and the arrival and departure of heavy vehicles delivering construction equipment. The peak hours for the Pinecrest BESS are therefore likely to be the AM and PM peaks when construction workers start and finish their shift. As workers are arriving, the AM and PM peak is unlikely to coincide with heavy vehicle deliveries.

Banpu will investigate the use of mini-buses to transfer workers to the site as a measure to minimise vehicle movements. Conservatively, of the 250 construction workers, it is assumed that up to 130 construction workers drive themselves to site, with the remaining 120 construction workers likely to utilise mini-buses. It is also noted that construction workers driving themselves to site may also choose to carpool to the site. This arrangement would result in AM and PM peaks of 130 light vehicles, as well as required mini-bus movements. Given the road capacity of Castlereagh Highway, and the short duration of this peak period, these numbers can be accommodated by the local traffic network without significant impact.

6.2.4 SITE ACCESS

Banpu are currently considering two potential site access options. These options involve access from Castlereagh Highway either via Karawatha Drive or Brays Lane. The site access will be informed through consideration of potential environmental impacts and with consideration of receivers, and will be determined prior to EIS lodgement. Site access would be expected to be designed to achieve the standards as required by LCC and TfNSW, and would accommodate for the largest delivery vehicle. The site access would be maintained and used for operational access and for future decommissioning.

A concept design of the proposed access would be included in the TIA and any physical impacts associated with the construction of the proposed access would be addressed by relevant supplementary reports.

6.2.5 CARPARKING

To accommodate up to 130 light vehicles on site during construction would require an area of approximately 3,500 square metres (based on standard car park dimensions and manoeuvring as per AS2890).

There is ample room on the site to accommodate this area.

The uses of mini buses to transfer construction workers would enable this area to be further reduced.





Legend

- Major Road
- Start: Port Botany
- Start: Port of Newcastle
- Finish: Pinecrest BESS
- Route Option 1: Newcastle via Rylstone (340km)
- Route Option 2: Port Botany via Blue Mountains (160km)
- Route Option 3: Port Botany via Yass and Cowra (560km)

 **Premise**
BANPU ENERGY AUSTRALIA
 Pinecrest BESS

Figure 9
 Heavy Vehicle Transport Route

6.3 Air

Air impacts arising from dust generation and vehicle emissions during construction are of a limited nature and relatively easily predicted. Once the project is operational, impacts to air quality are expected to be of a limited nature.

It is not proposed to assess air quality impacts in the EIS.

Implementation of appropriate mitigation measures via a CEMP would be expected to address any potential air quality impacts.

6.4 Amenity

6.4.1 VISUAL IMPACT

An initial review of the potential for visual impacts has been prepared by Premise and is provided in **Appendix C** and the visual envelope of the Pinecrest BESS is shown in **Figure 10**.

The indicative BESS and ancillary infrastructure is to be located on the edge of an urban development area and features scattered vegetation across undulating slopes. Due to the setting and the scale of the indicative BESS and ancillary infrastructure, it is expected that landscape character and visual impacts would have the greatest potential impact from areas close to the site, including views from Castlereagh Highway and properties between 500 metres to one kilometre to the north east. There are 401 receivers within a 2km buffer of the indicative BESS and ancillary infrastructure. Based on spatial mapping and site visit findings, it has been concluded that within a one kilometre buffer only 18 receivers have potential visibility of the indicative BESS and ancillary infrastructure, and within a one to two kilometre buffer only 3 additional receivers have potential visibility.

Of these 21 receivers with potential visibility:

- > One (1) is less than 500m from the indicative BESS and ancillary infrastructure with potential for direct views and the greatest potential for visual impact;
- > Six (6) are established dwellings with potential visibility;
- > 10 are vacant residential lots with potential visibility;
- > One (1) is a non-residential receiver;
- > Two (2) are more than 1 kilometre from the indicative BESS and ancillary infrastructure and unlikely to have visibility to the site;
- > One (1) may have partial view of the indicative BESS and ancillary infrastructure and is more than one kilometre away; and
- > One (1) is located within 1 to 2 kilometres of the indicative BESS and ancillary infrastructure and may have potential visibility, however was inaccessible during a preliminary site visit.

Due to the undulating topography of the land, views from the public domain to the indicative BESS and ancillary infrastructure are expected to be somewhat contained, particularly from the north, east and west of the Pinecrest BESS. Where this is not the case, there is potential for views to the indicative BESS and ancillary infrastructure, particularly from Castlereagh highway and the receivers with potential visibility identified in **Figure 3**.

With respect to the construction and operational phases of the project, the review noted the potential for a range of visual impacts during construction and operational phases. Construction impacts may include:

- > The presence of construction activity on the site;
- > Earthworks required to prepare the landform of the site;
- > Construction vehicle movements along surrounding roads; and
- > Temporary construction facilities including:
 - construction compounds and laydown areas;
 - site office and vehicle parking;
 - construction access tracks; and
 - stormwater and sediment controls for the project area.

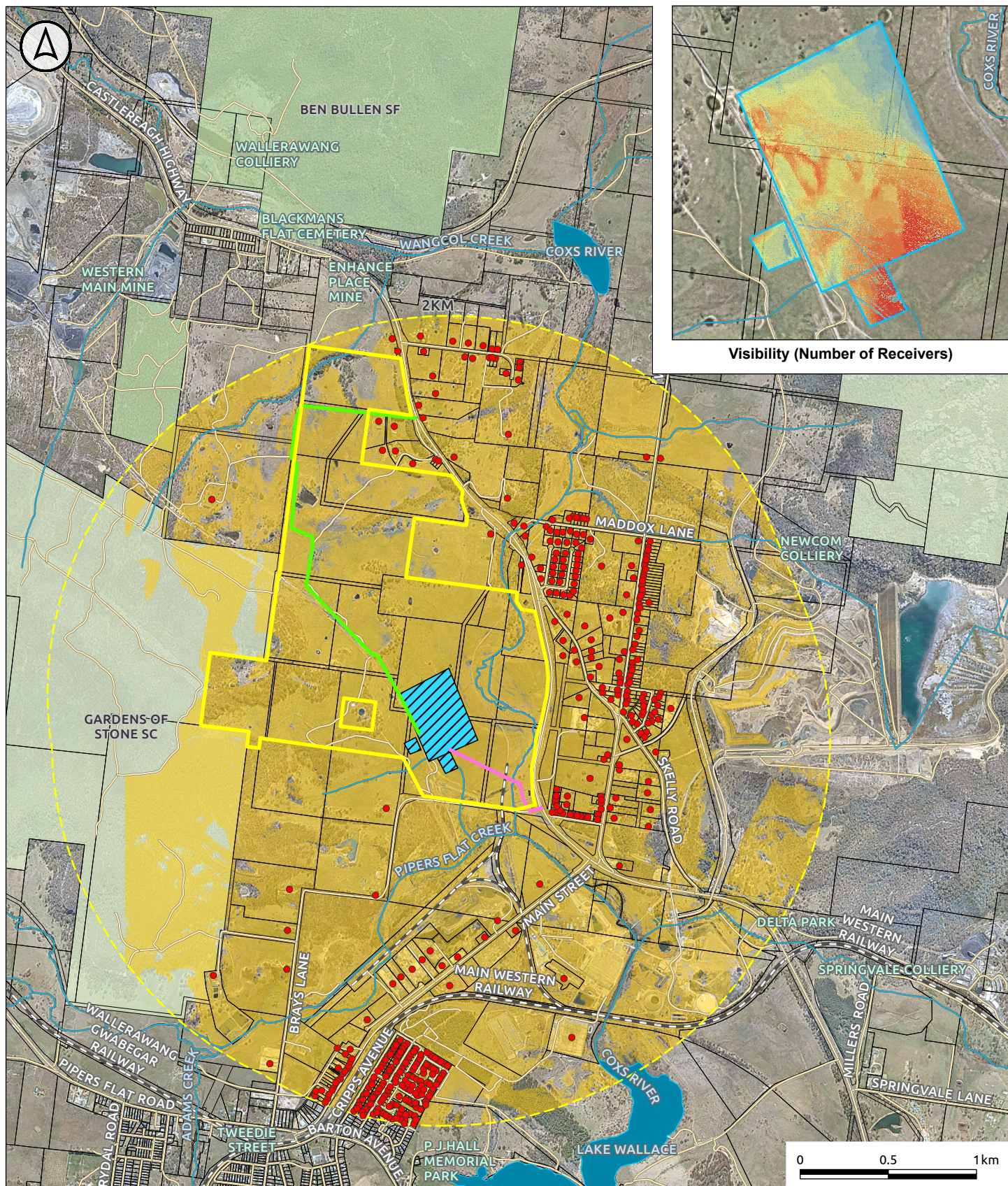
Impacts during operation would be associated with the potential visibility of the following infrastructure associated with the project:

- > Electrical infrastructure including battery and medium voltage power station (MVPS) units arranged in rows
- > Transformers, switchgear and overhead transmission lines connecting the BESS to the existing electricity transmission network
- > Other permanent ancillary infrastructure including small buildings (site office, operation and maintenance facility and control room)
- > Car parking, internal access tracks, security fencing and signage.

A detailed visual impact assessment (VIA) would be provided as part of the EIS to further analyse the potential visual impact of the project. The detailed VIA will include an assessment of the likely visual and landscape impacts of the project on surrounding residences, including field verification of the visibility analysis and an assessment of representative viewpoints. Both private and public vantage points would be assessed in the VIA to identify the potential visual impacts of the Pinecrest BESS.

Where relevant, the VIA will identify appropriate measures to help minimise the potential for the Pinecrest BESS to impact visual amenity.





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6.4.2 NOISE AND VIBRATION

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

Within 1 km of the project there is approximately 116 non-associated residential receivers and nine non associated non-residential receivers – refer **Figure 3**. The closest non associated residential receiver is located at 233 Brays Lane and is located approximately 360 m from the indicative BESS and ancillary infrastructure. All other receivers are greater than 500 m from the project.

The potential noise and vibration impact of the construction and operational 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:

- > *NSW Interim Construction Noise Guideline;*
- > *NSW Noise Policy for Industry;*
- > *NSW Road Noise Policy;* and
- > *Assessing Vibration: A Technical Guidelines.*

6.5 Biodiversity

6.5.1 METHODS

Preliminary biodiversity advice been prepared by Premise and is provided in **Appendix D**. Preliminary biodiversity matters have been assessed through a combination of a field survey and a desktop review of threatened species. searches and a site survey.

6.5.1.1 Field survey

A field survey was conducted by two experienced ecologists on 13 February 2025. The survey included traversing the site on foot and by vehicle, mapping the vegetation characteristics, collecting Rapid Assessment Spot Samples (RASS) and Vegetation Integrity (VI) plot data in accordance with the NSW Biodiversity Assessment Method (BAM). The survey covered an area that comprised the footprint of the BESS infrastructure, and the two site access options. The area of the BESS infrastructure, Brays Lane site access option, and potential switchback areas contained exotic grassland, Derived Native Grassland (DNG), and sedge dominated grassland. The Karawatha Drive site access option predominantly comprised DNG and roadside woodland patches (poor to moderate condition), and a small area of exotic grassland at the southern extent.

6.5.1.2 Desktop review

An initial threatened species desktop review was conducted on 17 February 2025, which included a review of:

- > BioNet Atlas of NSW Wildlife (NSW DCCEEW 2025a) (10km buffer)
- > Protected Matters Research Tool (Cth DCCEEW 2025) (1 km buffer)

The outcomes of this investigation informed the threatened species assessment in **Section 6.5.2**.

6.5.2 RESULTS

6.5.2.1 Plant Community Type and condition

Using the NSW BioNet Vegetation Classification System to determine the most likely Plant Community Type (PCT), it was determined that there were likely to be two PCTs present within the area surveyed:

- > PCT 3369 Central Tableland Ranges Peppermint-Gum Grassy Forest, and
- > PCT 3385 Southern Tableland Creekflat Swamp Woodland.

It was found that PCT 3369 was generally widespread throughout the site, while PCT 3385 is concentrated to low-lying areas, drainage lines and the Cocks River.

These PCTs were mapped into nine vegetation condition zones as shown in **Figure 11**.

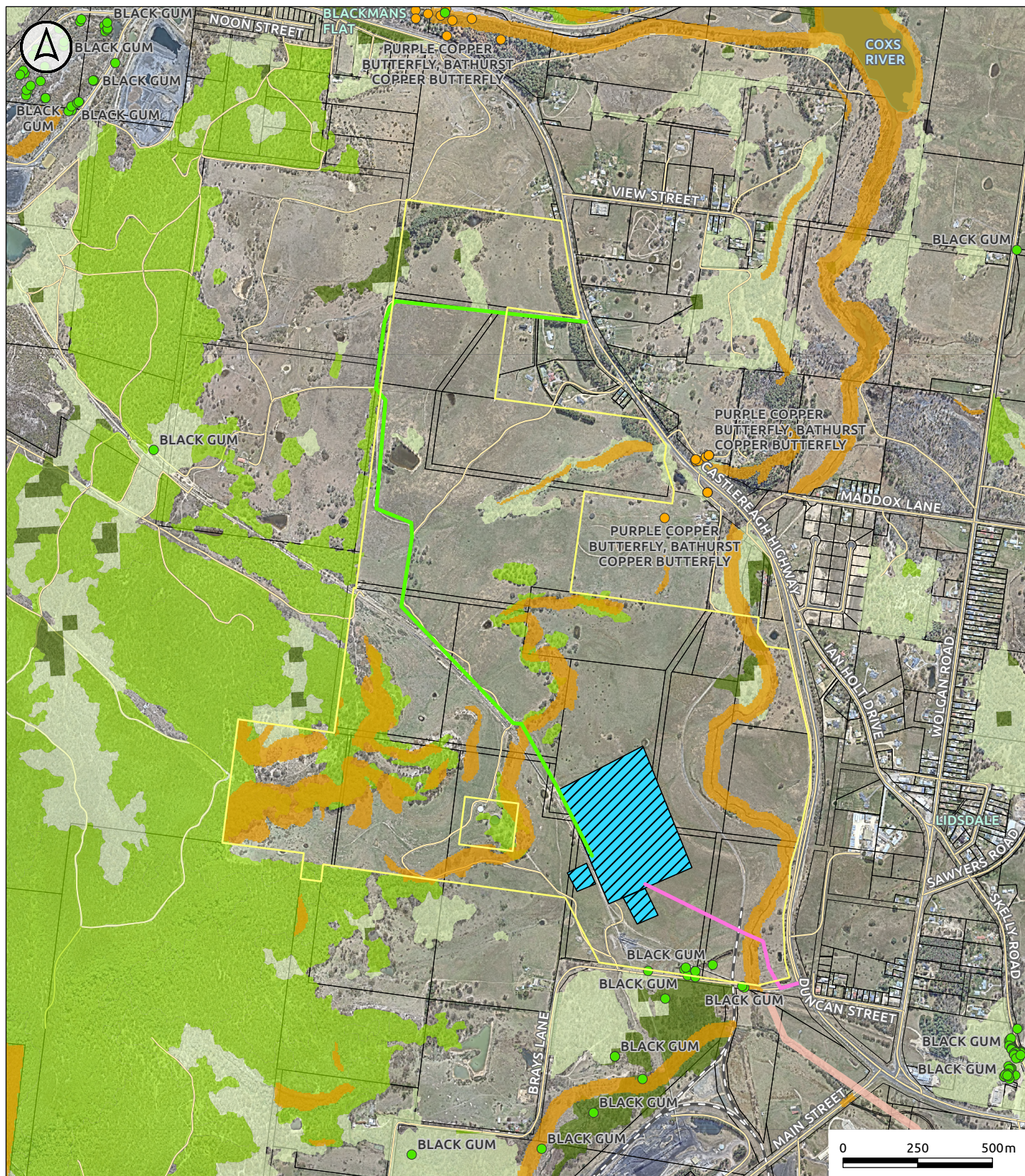
6.5.2.2 Habitat features

During the field survey, habitat features that were recorded in and around the surveyed area included hollow bearing trees, fallen logs, surface rocks, ephemeral grassland, caves and dams with emergent vegetation (**Figure 12**).

6.5.2.3 Threatened species assessment

A desktop review of threatened species returned a total of 79 threatened species and three (3) threatened ecological communities (TECs). Based on likelihood to occurrence, this number has been refined to 38 threatened species that may occur on the site. The TECs have also been eliminated from consideration as the vegetation does not meet the key diagnostic characteristics.

Of the 38 threatened species, there are four (4) threatened flora and 34 threatened fauna species. 20 of the 38 threatened species are recorded as species credits to the NSW BioNet Threatened Biodiversity Data Collection (TBDC) (NSW DCCEEW, 2025b). The preliminary advice identifies targeted searches that will be required to confirm presence of species credits and threatened species.



Legend

	Project Area		Major Water Body
	Indicative BESS and Ancillary Infrastructure		Watercourse
	Indicative Site Access Option 1: Karawatha Dr	Bionet Threatened Species	
	Indicative Site Access Option 2: Brays Ln		Fauna
	Lot		Flora
	Road	Native Vegetation Regulatory Map (Transitional)	
	Railway		Vulnerable Regulated Land
			Excluded Land

Terrestrial Groundwater Dependent Ecosystems

	High potential GDE - from regional studies
	Low potential GDE - from regional studies
	Moderate potential GDE - from regional studies

Aquatic Groundwater Dependent Ecosystems

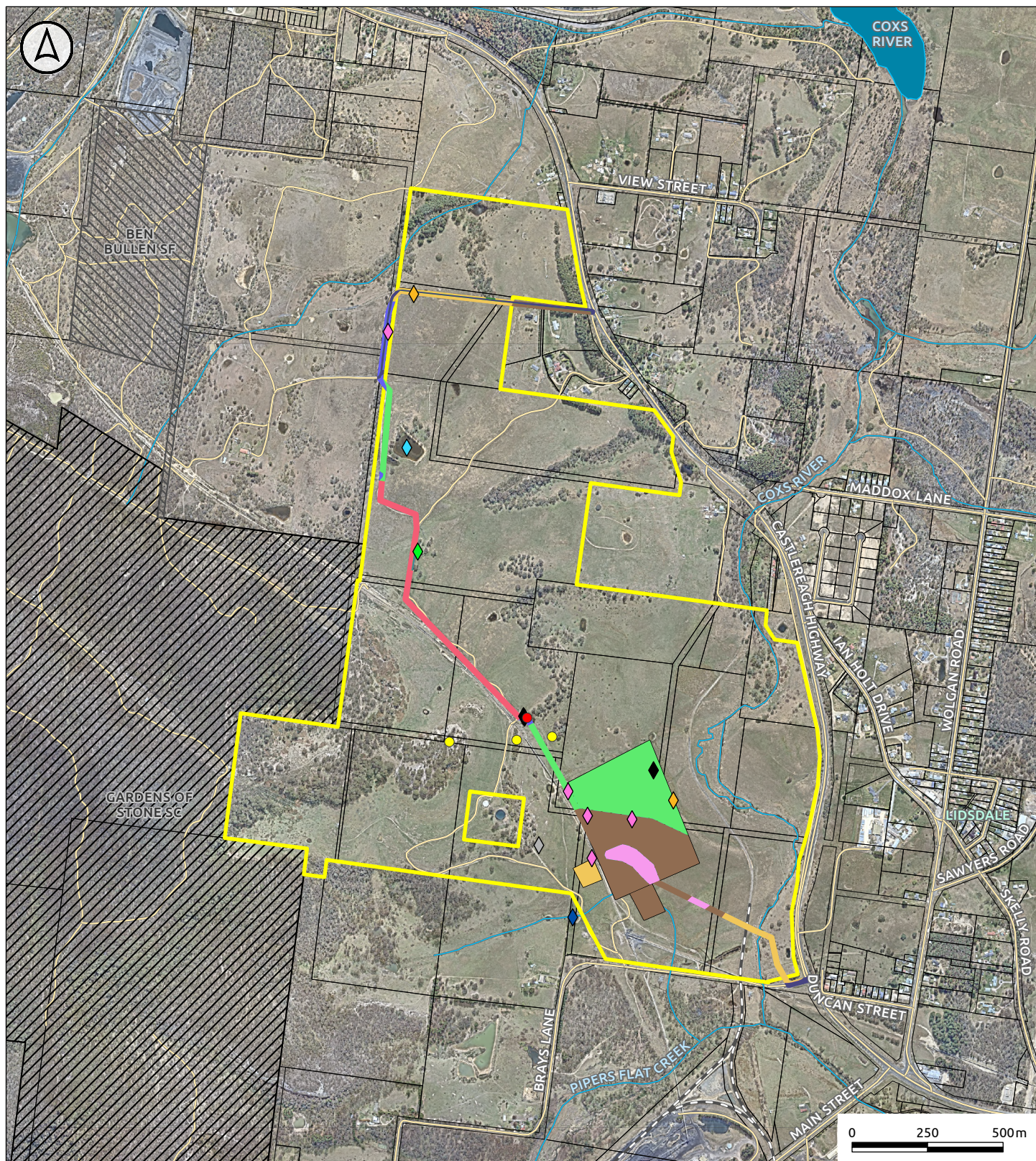
	Moderate potential GDE - from national assessment
--	---



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Pinecrest BESS

Figure 11
Biodiversity



Legend

- Project Area
- Indicative Site Access Option 1: Karawatha Dr
- Indicative Site Access Option 2: Brays Ln
- Lot
- Road
- Railway
- Major Water Body
- Watercourse
- State Forest

- NPWS Reserve
- Vegetation Zones**
- 3369 DNG (Moderate)
 - 3369 DNG (Poor)
 - 3369 Woodland (Moderate)
 - 3369 Woodland (Poor)
 - 3385 DNG (Poor)
 - 3385 Sedge DNG (Poor)
 - 3385 Woodland (Poor)
 - Exotic
 - Not vegetated

- Threatened Species Sightings
- VI Plots
- Habitat Features**
- ◆ Dam with emergent vegetation
- ◆ Dam with water
- ◆ Ephemeral swamp
- ◆ Fallen logs
- ◆ Fallen timber
- ◆ Rocky outcrops/caves
- ◆ Surface rock



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Figure 12
Ecological Survey Results

6.5.3 NEXT STEPS

The preliminary advice recommends that biologically sensitive areas, remnant woodland and habitat features be avoided during project refinement to reduce the ecosystem and species credits that may be generated.

Further assessment would be required in relation to any river cross at Coxs River to determine potential impacts and mitigation measures that may apply.

Based on the findings of the preliminary advice, it is considered that the Karawatha Drive site access option holds the higher risk for generating credits. Confirmation of the site access at EIS stage will provide a better understanding of the extent of possible impacts.

It is expected that a Biodiversity Development Assessment Report will be required at EIS stage to determine the potential impacts associated with the Pinecrest BESS.

6.6 Built Environment

The Pinecrest BESS is situated within an area characterised by rural, residential and industrial uses, with 400 non-associated receivers located within a 2 km buffer of the indicative BESS and ancillary infrastructure. The Pinecrest BESS is predominantly surrounded by agricultural farmlands to the north, south and west, predominantly used for grazing. Residential, industrial and agricultural lands are located to the east of the Pinecrest BESS across the Castlereagh Highway.

The Pinecrest BESS is located adjacent to existing 132 kV and 330 kV transmission lines and is located between two high voltage substations (Mount Piper and Wallerawang) to the north and south. Investigations are underway with Transgrid to utilise either of these existing transmission lines, subject to modification, to enable the connection of the project to the Wallerawang Substation.

6.7 Economic

The proposed Pinecrest BESS is likely to have a net positive economic impact derived from creating local employment opportunities during the construction, operation and decommissioning phases, as well as by contributing to a stable, renewable electricity supply. This is expected to contribute towards downward pressure on electricity prices paid by residents of the local area, as well as by users of the broader electricity network.

Whilst impacts to land values are not a material planning consideration, any perceived economic impacts to property prices of local residents as a consequence of air, visual, noise and vibration, hazard, land use, social or water impacts will be addressed through mitigation measures such as the implementation of a CEMP, landscaped buffers and adequate buffers to associated and non-associated dwellings.

A preliminary scoping assessment of these impacts is provided throughout **Section 6**. Each of these impacts is to be considered further in the EIS.

Opportunities for community benefit sharing will be investigated and early stage discussions with LCC have commenced in this regard.

Opportunities will be investigated through local procurement to engage local people and collaborate with local businesses throughout the construction phase. This will be detailed in the project economic assessment.

6.8 Hazards and Risks

6.8.1 HAZARDOUS AND OFFENSIVE DEVELOPMENT

Impacts from an electromagnetic field (EMF) may be generated by transmission lines and underground cables. EMF risks are expected to be below the International Commission on Non-Ionizing Radiation Protection (ICNIRP) guidelines (adopted by the Australian Radiation Protection and Nuclear Safety Agency, ARPANSA).

Nevertheless, there is a perception that components of the proposed development, primarily the inclusion of a switching station and BESS, may significantly alter the EMF within a locality and thereby cause harm to residents and the environment.

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 4.14 of State Environmental Planning Policy (Resilience and Hazards) 2021. Class 9 goods do not exceed the screening thresholds as they “pose little threat to people or property” (Department of Planning 2011, p. 33).

A Preliminary Hazard Analysis (PHA) is to be provided as part of the EIS and will assess EMF levels associated with the proposed infrastructure.

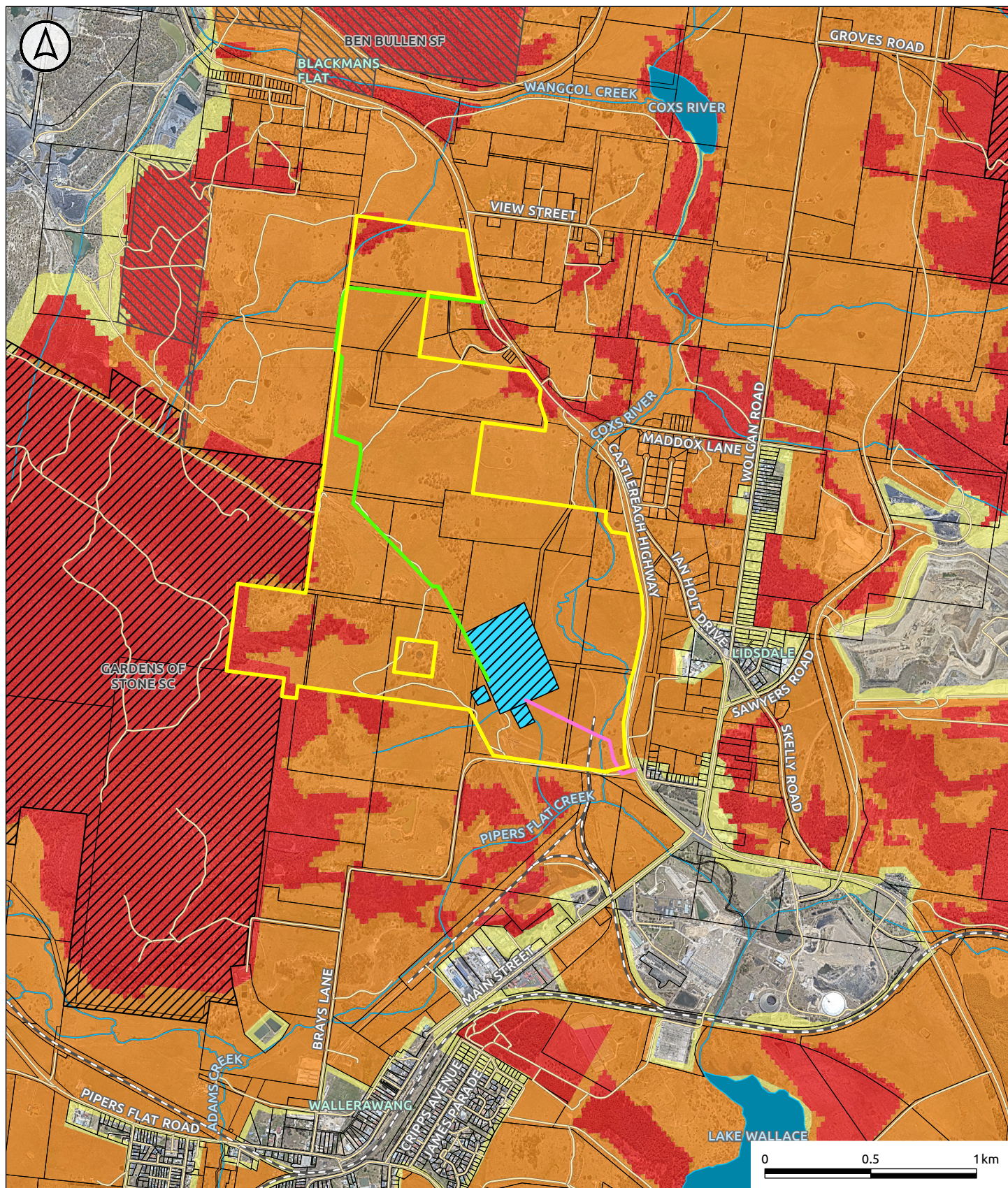
The potential for cumulative impacts associated with the operation of the project would also be considered, as discussed in **Section 3.3**.

6.8.2 BUSHFIRE

The entirety of the project area is mapped as being bushfire prone land pursuant to the NSW Planning Portal Spatial Viewer (refer **Figure 13**). The indicative BESS and ancillary infrastructure is proposed to be located on land mapped as containing Vegetation Category 2 bushfire prone land with the transmission line crossing portions of land mapped as Vegetation Category 1.

A Bushfire Assessment would be provided as part of the EIS to ensure consistency of the Pinecrest BESS with the NSW Rural Fire Service (RFS) guidelines, Planning for Bushfire Protection 2019, including the 2020 addendum.





Legend

- | | | | |
|--|--|----------------------------|-----------------------|
| | Project Area | | Railway |
| | Indicative Site Access Option 1:
Karawatha Dr | | Major Water Body |
| | Indicative Site Access Option 2:
Brays Ln | | Major Watercourse |
| | Indicative BESS and Ancillary
Infrastructure | | State Forest |
| | Lot | Bushfire Prone Land | |
| | Road | | Vegetation Category 1 |
| | | | Vegetation Category 3 |
| | | | Vegetation Buffer |

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 Pinecrest BESS

Figure 13
 Bushfire Prone Land

6.8.3 FLOODING

The project area is not mapped as flood prone land pursuant to the NSW Planning Portal Spatial Viewer, however, it is noted that there are several 1st order streams and farm dams located within the project area, as well as being located adjacent to the Cocks River. Potential flood impacts resulting from these watercourses along with pre and post development flood scenarios would be addressed as part of the EIS. This would include a flood impact assessment report.

6.9 Heritage

6.9.1 EUROPEAN HERITAGE

A review of the State Heritage Inventory (SHI) and of Schedule 5 of the LEP confirmed that there are no local or state heritage listed items located within the site. Local heritage items located within 1 km of the Pinecrest BESS are outlined below:

- > Woodlands - #I199 located approximately 500 m east of the site;
- > Square and Compass Inn (former) - #I198 located approximately 550 m east of the site;
- > Windmill Lad Stud - #I197 located approximately 650 m east of the site;
- > Lidsdale House and Garden #I203 located approximately 600 m north of the site;
- > House opposite Lidsdale House - #I204 located approximately 600 m north of the site;
- > The Meadows - #I201 located approximately 900 m east of the site; and
- > Farmhouse - #I205 located approximately 1.2 km north of the site.

No state heritage items or heritage conservation areas are located at or within proximity to the site.

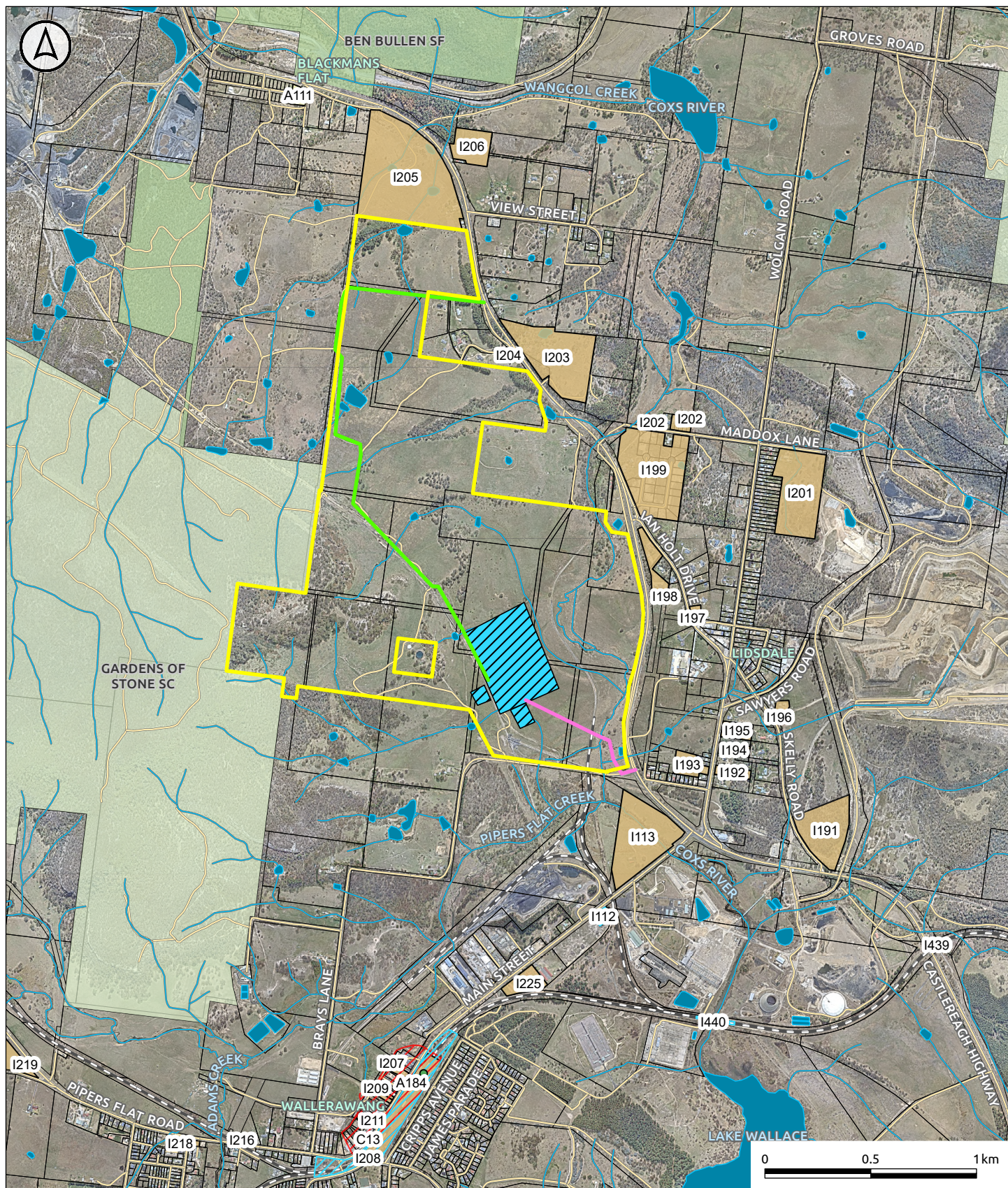
Heritage items in the locality are shown in **Figure 14**.

In addition, there are no heritage sites listed on the Register of the National Estate (RNE) or on the National Trust Heritage Register located at or within proximity to the Pinecrest BESS.

Due to the proximity of these heritage sites, at a minimum distance of 550 m, it is not likely that the proposed Pinecrest BESS will adversely impact upon European/historic heritage.

Notwithstanding further consideration of historic heritage shall be undertaken within the EIS.





Legend

- | | | | |
|--|---|--|-----------------------------------|
| | Project Area | | Railway |
| | Indicative Site Access Option 1: Karawatha Dr | | Water Body |
| | Indicative Site Access Option 2: Brays Ln | | Watercourse |
| | Indicative BESS and Ancillary Infrastructure | | State Forest |
| | Lot | | NPWS Reserve |
| | | | State Heritage Register Curtilage |

EPI Heritage

- | | |
|--|-----------------------------|
| | Conservation Area - General |
| | Item - Archaeological |
| | Item - General |



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Figure 14
Heritage Sites

6.9.2 ABORIGINAL CULTURAL HERITAGE

A search of the Aboriginal Heritage Information Management System (AHIMS) online database was undertaken on 15 November 2024 for the site with a buffer of approximately 3 km. The search results identified 44 previously recorded Aboriginal sites and no Aboriginal places. More specifically, four (4) recorded Aboriginal sites are located within the boundaries of the project area as shown in **Figure 15**.

Coxs River runs through the site in a north to south direction, situated approximately 110 m from the indicative BESS and ancillary infrastructure. Pipes Flat Creek is also located approximately 200 m to the south of the indicative BESS and ancillary infrastructure with associated drainage channels meandering across the indicative BESS and ancillary infrastructure. Mount Piper is located approximately 2 km west of the indicative BESS and ancillary infrastructure and is characterised by dense woodlands and steep terrain with similar landforms also forming to the east of the indicative BESS and ancillary infrastructure. Overall, the surrounding landscape indicates likely Aboriginal occupation of the area. Given the number of previously recorded Aboriginal sites within proximity to the indicative BESS and ancillary infrastructure, it is also noted that this area contains a high level of Aboriginal archaeological sensitivity.

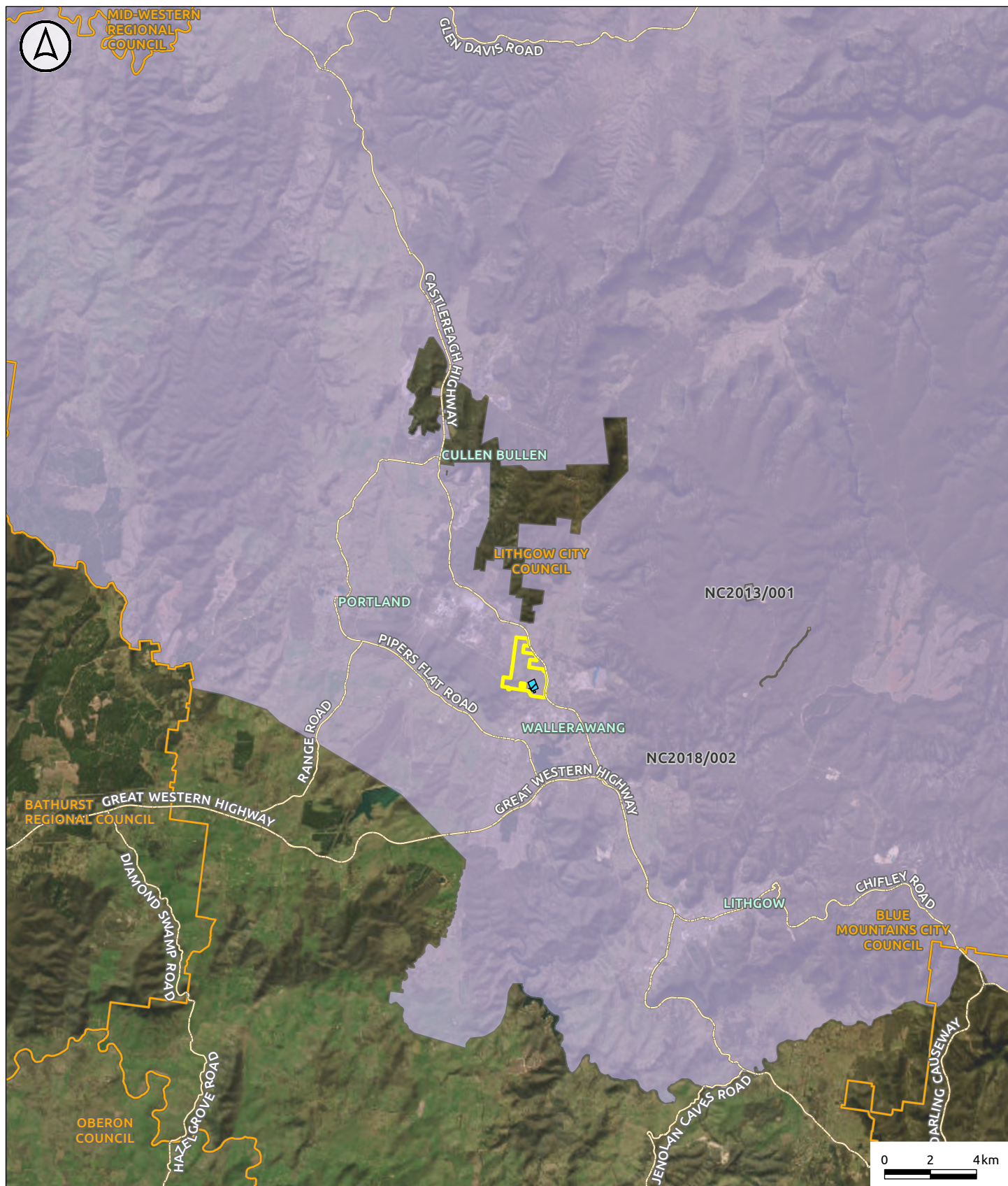
A review of the National Native Title Tribunal and Native Title Vision online databases confirmed that the project area is located within an active Native Title Claim area, tribunal number NC2018/002 (Warrabinga-Wiradjuri #7) (see **Figure 16**). The Native Title Claim area encompasses an area of 13681.8714 km² including the following LGA's:

- > Bathurst Regional Council
- > Blue Mountains City Council
- > Hawkesbury City Council
- > Mid-Western Regional Council
- > Muswellbrook Shire Council
- > Upper Hunter Shire Council
- > Warrumbungle Shire Council
- > LCC
- > Singleton Council
- > Dubbo Regional Council

This Native Title claim was registered on 31 August 2018 and has not yet been determined.

An ACHA will be provided to support the EIS to identify and assess potential impacts to Aboriginal heritage as a result of the proposed development. This will involve a site survey to inform the cultural sensitivity of the area in consultation with Registered Aboriginal Parties (RAPs) and an assessment of potential impacts.





- Legend**
- Project Area
 - Indicative BESS and Ancillary Infrastructure
 - Major Roads
 - Local Government Area

Native Title Claim

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 Pincrest BESS

Figure 16
 Native Title Claim

6.10 Land Use

The project area is zoned as RU1 Primary Production and is predominantly identified as grazing modified pastures and grazing native vegetation on the Land Use 2017 mapping (see **Figure 17**).

The project area is predominantly identified as Class 5 (severe limitations) land and soil capability, with the potential switchyard located partially within Class 4 (moderate to severe limitations) (refer **Figure 18**). The project area is not mapped as biophysical strategic land (BSAL) or on a draft state significant agricultural land map.

A review of MinView online database identified two mining leases within the project area:

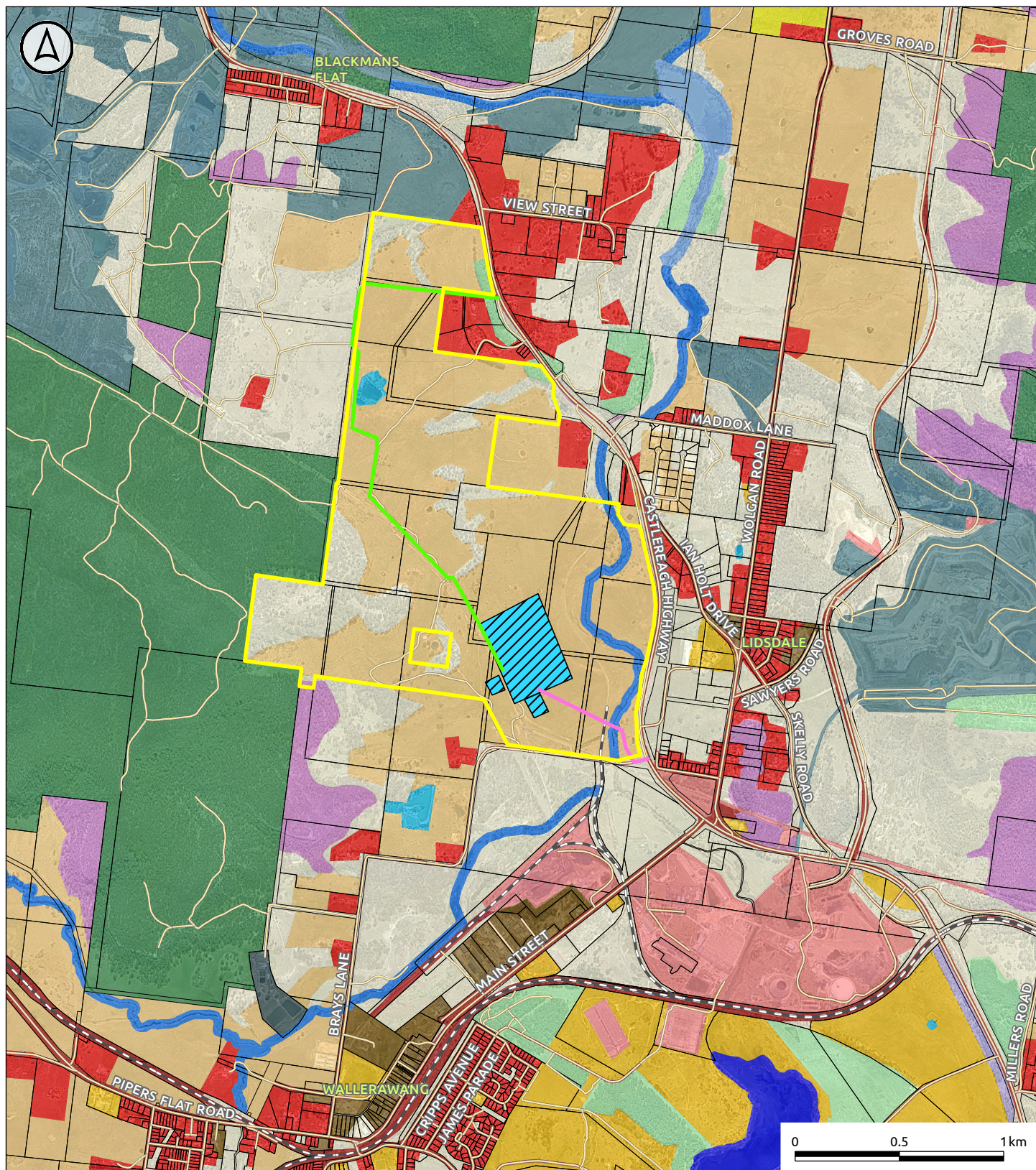
- > MPL314 – Coal mining lease held by Centennial Springvale Pty Ltd
- > ML1637 – Coal mining lease held by Enhance Place Pty Ltd

As shown in **Figure 19**, MPL314 covers the extent of the Lidsdale Coal Loader that traverses the project area north to south, while ML1637 encompasses the railway line. Any impacts on the railway line would be dependent on the selected site access at EIS stage. If impacted, consultation with the lessee would be undertaken prior to lodgement of an EIS.

The project area encompasses a road to the northern end that is identified as Crown land and is subject to a Crown Enclosure Permit (ID 659019). During project design and refinement this will be taken into consideration to ensure that this land is avoided. If avoidance is not possible, consultation with NSW Crown Lands would be undertaken prior to lodgement of the EIS.

It is expected that the SEARs will require preparation of a LUCRA to consider the potential for conflict between the proposed Pinecrest BESS and adjacent or nearby land uses. This will consider potential conflicts and potential mitigation measures to reduce conflicts to an acceptable level. The LUCRA will be prepared in accordance with the Department of Industry's *Land Use Conflict Risk Assessment Guide* (2011).





Legend

- Project Area
- Indicative BESS and Ancillary Infrastructure
- Indicative Site Access Option 1: Karawatha Dr
- Indicative Site Access Option 2: Brays Ln
- Lot
- Road
- Railway

Land Use 2017

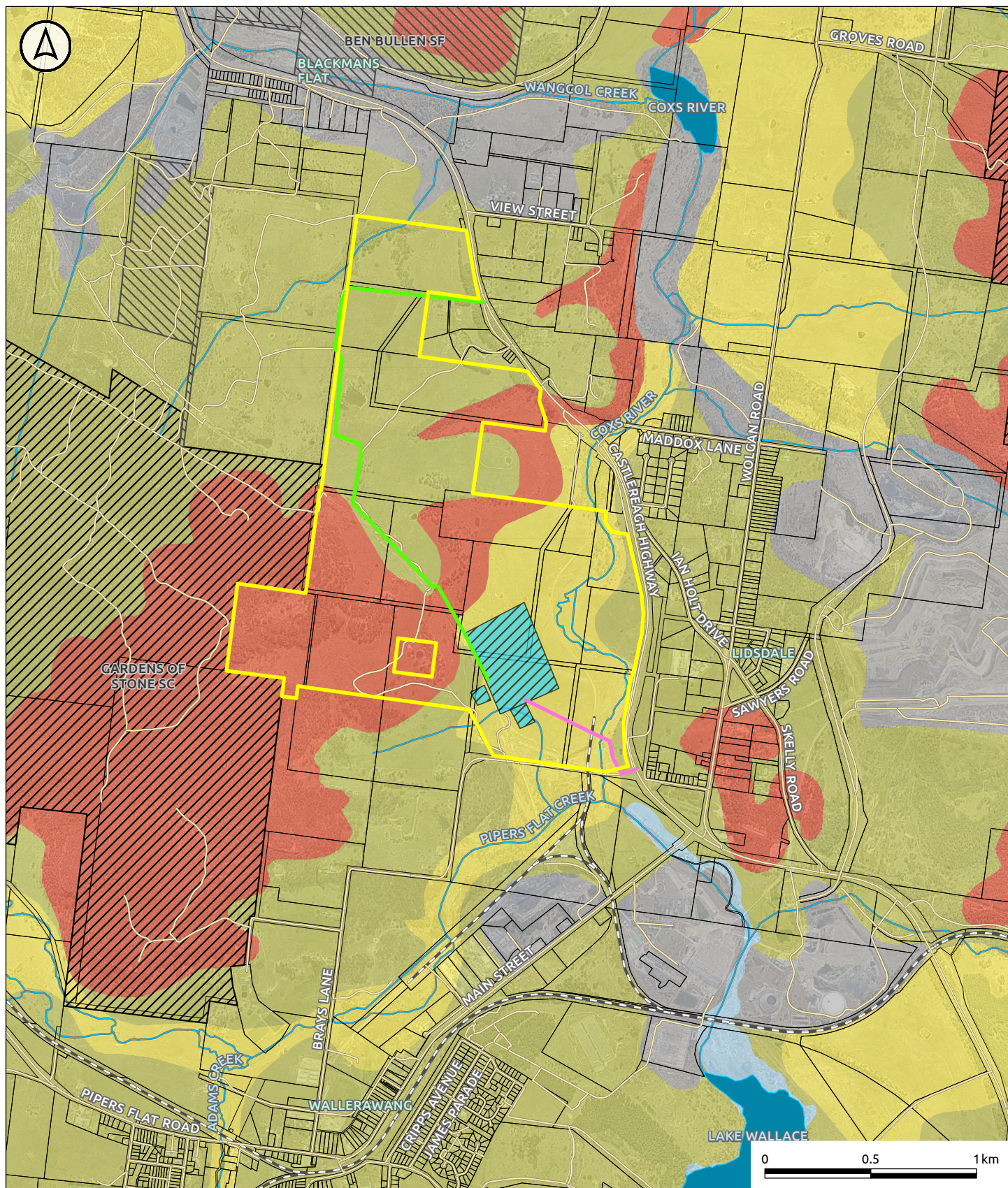
- 1.2.0 Managed resource protection
- 1.3.0 Other minimal use
- 2.1.0 Grazing native vegetation
- 2.2.0 Production native forestry
- 3.1.0 Plantation forests
- 3.2.0 Grazing modified pastures
- 3.3.0 Cropping
- 5.3.0 Manufacturing and industrial

- 5.4.0 Residential and farm infrastructure
- 5.5.0 Services
- 5.6.0 Utilities
- 5.7.0 Transport and communication
- 5.8.0 Mining
- 5.9.0 Waste treatment and disposal
- 6.1.0 Lake
- 6.2.0 Reservoir/dam
- 6.3.0 River
- 6.5.0 Marsh/wetland



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Pinecrest BESS

Figure 17
Land Use



Legend

	Project Area		NPWS Reserve
	Indicative BESS and Ancillary Infrastructure		State Forest
	Indicative Site Access Option 1: Karawatha Dr		Major Watercourse
	Indicative Site Access Option 2: Brays Ln		Major Water Body
	Lot		Railway

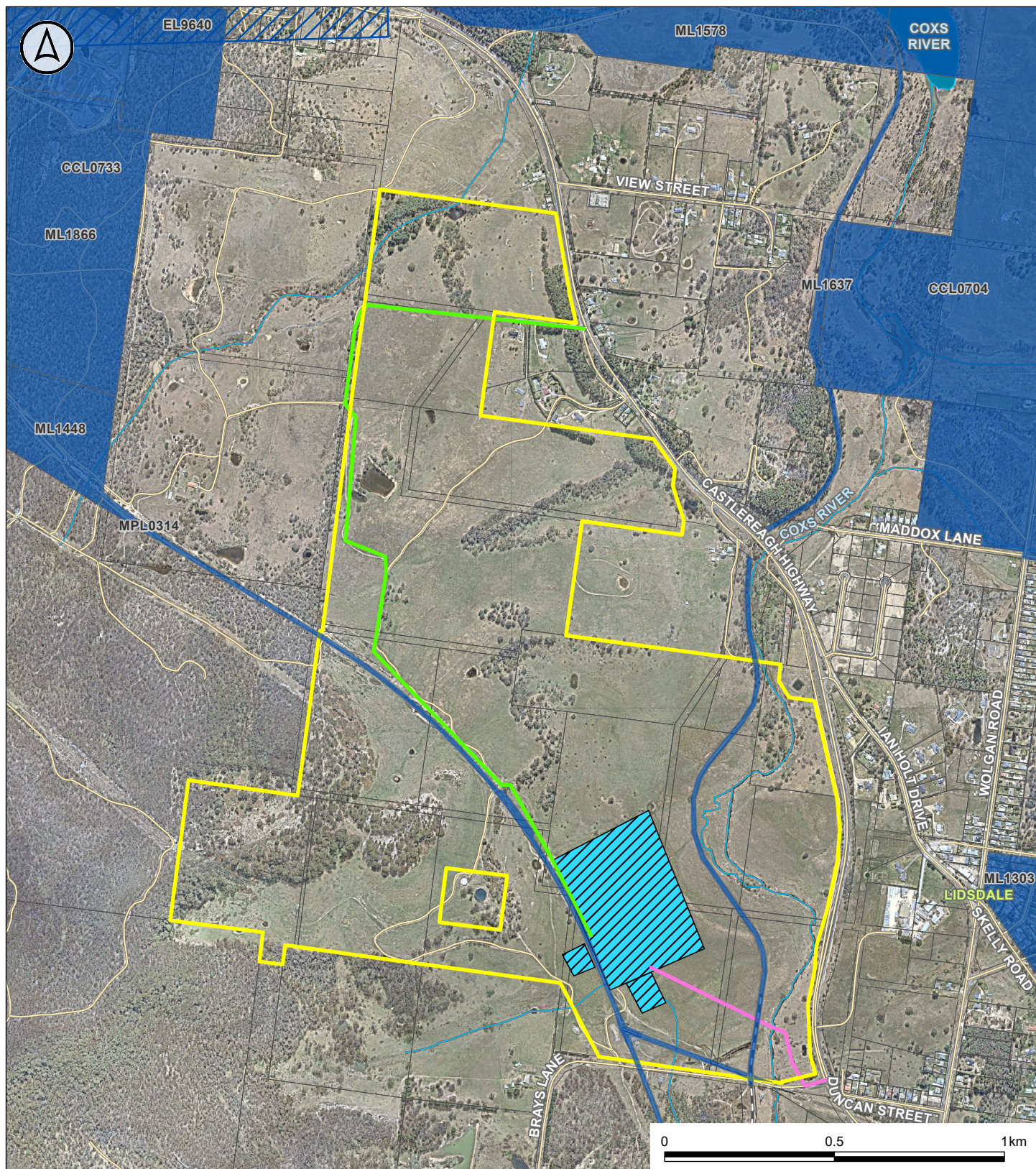
Land and Soil Capability

	4 - Moderate to severe limitations
	5 - Severe limitations
	8 - Extreme limitations
	Not assessed (98)
	Water (99)



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Pinecrest BESS

Figure 18
Land and Soil Capability



Legend

- Project Area
- Indicative BESS and Ancillary Infrastructure
- Indicative Site Access Option 1: Karawatha Dr
- Indicative Site Access Option 2: Brays Ln
- Lot
- Road
- Railway
- Major Water Body

- Major Watercourse
- Exploration and Mining Titles: Minerals
- Exploration and Mining Titles: Coal



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Pinecrest BESS

Figure 19
Exploration and Mining Titles

6.11 Social Impact

6.11.1 APPROACH

A preliminary social impact assessment (SIA) has been prepared by bd infrastructure and is provided in **Appendix F**. The objective of the SIA is to identify, evaluate and manage potential social impacts to inform project refinements and the level of community engagement for the next phases of the planning approvals process.

The assessment was informed by early stages of community and stakeholder engagement, desktop analysis and review of SIA reports for similar or nearby major projects. Social baseline data was sourced from Australian Bureau of Statistics Census data (ABS, 2021), using data specifically for Lidsdale and Wallerawang Suburbs and Localities (SAL).

The assessment has been conducted in accordance with the *Social Impact Assessment Guidelines 2023* (DPIE, 2023).

6.11.2 SOCIAL BASELINE

The project area is located in Lidsdale, and is approximately 12 km northwest of Lithgow, within the Lithgow LGA. The nominated social locality for Pinecrest BESS is a composite of Lidsdale SAL and Wallerawang SAL as shown in **Figure 20**. Within the nominated social locality the following characteristics have been noted:

- > A population of approximately 2490.
- > Median age of the social locality is generally in line with the NSW median age of 39.
- > Lidsdale SAL and Wallerawang SAL have a higher proportion of Aboriginal and/or Torres Strait Islander residents compared to NSW (3.4%), at about 8.3 and 9.3 per cent respectively.
- > The Socio-economic Index for Areas (SEIFA) score indicates a considerably higher level of socio-economic disadvantage in Wallerawang SAL (1st quintile) compared to Lidsdale SAL (3rd quintile).
- > The median income is significantly lower than the NSW average, particularly in Wallerawang SAL.
- > Unemployment rates are slightly higher than the NSW average (4.9%) in Wallerawang SAL (5.3%), while Lidsdale SAL (2.8%) has lower unemployment rates.
- > The social locality is strongly influenced by the coal mining industry, with a large portion of the workforce employed in the industry. Other notable industries include road freight transport, supermarket and grocery stores, residential care, and State government administration.
- > The social locality has high proportions of occupied private dwellings.
- > The social locality also has a lower housing mobility than the NSW average over both 12 months and 5 year periods.

6.11.3 POTENTIAL SOCIAL IMPACTS AND MATTERS REQUIRING FURTHER ASSESSMENT

The social impact categories have been adopted in line with the relevant guidelines to determine the potential social impacts. The NSW DPHI scoping worksheet was also populated to guide the assessment and is provided in **Appendix F**.

Key predicted benefits identified include:

- > Reduced reliance on fossil fuel energy sources, grid stability and provision of infrastructure to support renewable energy;
- > Reduction in 'eco-anxiety' by supporting the transition to renewable energies;
- > Opportunities for job growth, particularly for young people, and technological innovation; and
- > Strengthened sense of place, as the region adopts an identity as a forward thinking area that values renewable energy and sustainability.

Key potential impacts identified include:

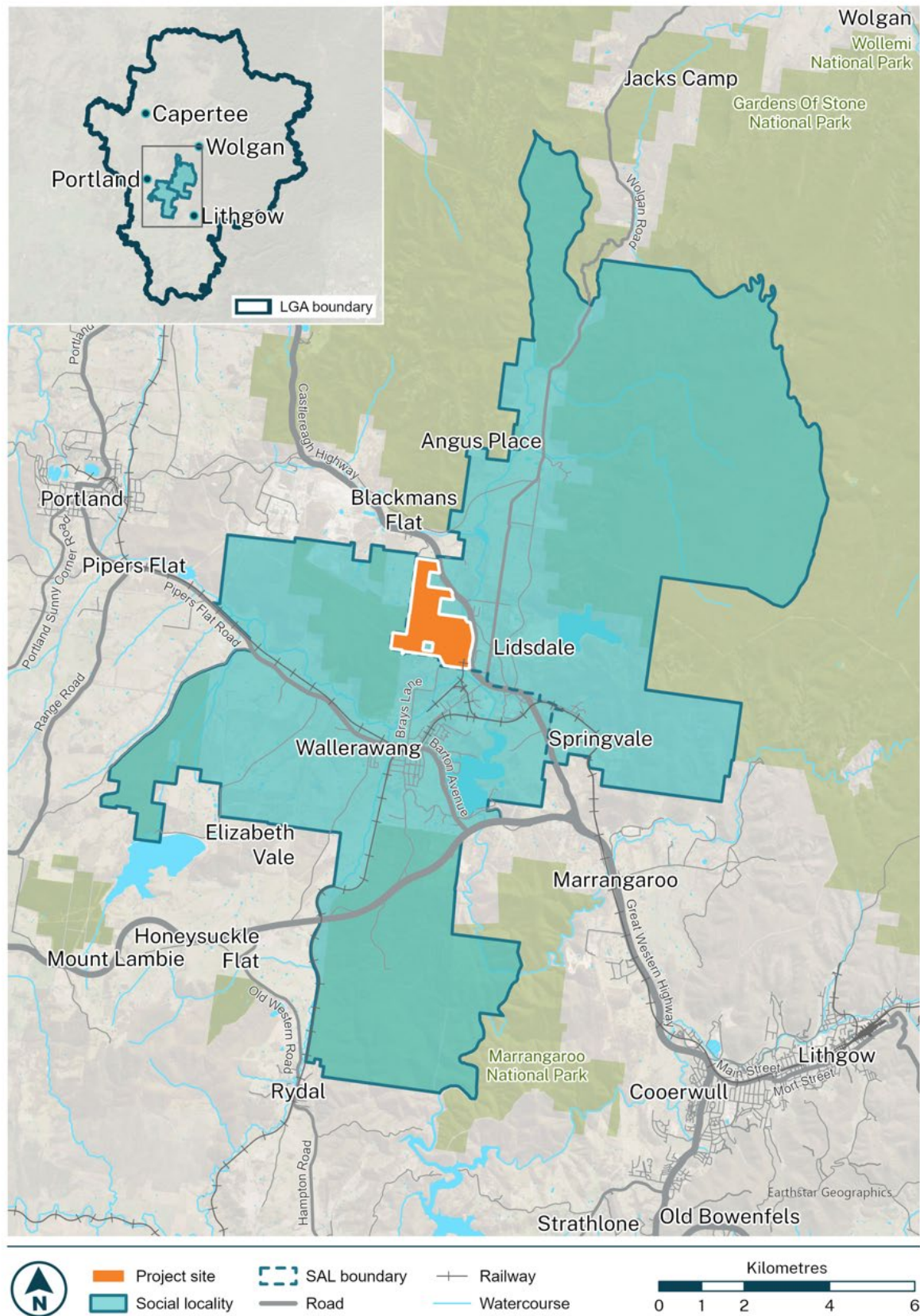
- > Impacts on the quality of the road network as a result of heavy vehicles during the construction phase;
- > Temporary impacts on temporary accommodation during the construction phase;
- > Impacts on the aesthetic value and amenity of the area resulting from dust disturbance;
- > Visual impacts through disruption of open, unobstructed views typical of rural areas; and
- > Anxiety around understanding of fire risks and atmospheric pollution associated with fire.

The above predicted benefits and impacts require further research and project refinement during the EIS phase of the project in response to design development, detailed environmental assessment, engagement outcomes, and to align with the requirements of the SEARs. Noting that temporary workforce accommodation was an impact also raised by LCC, it is anticipated that detailed investigation of accommodation options would be considered and incorporated into the EIS and a detailed SIA.

Mitigation or enhancement strategies will be detailed in a complete SIA to be provided as part of the EIS in accordance with the *Social Impact Assessment Guidelines 2023* (DPIE, 2023). These strategies may include an accommodation and employment strategy and/or a communications and stakeholder engagement strategy as required. This assessment will be proportionate with the scale, complexity and likely impacts and benefits of the project.



Figure 20 - Nominated social locality



6.12 Water

The project area is not mapped as groundwater vulnerable under the LEP.

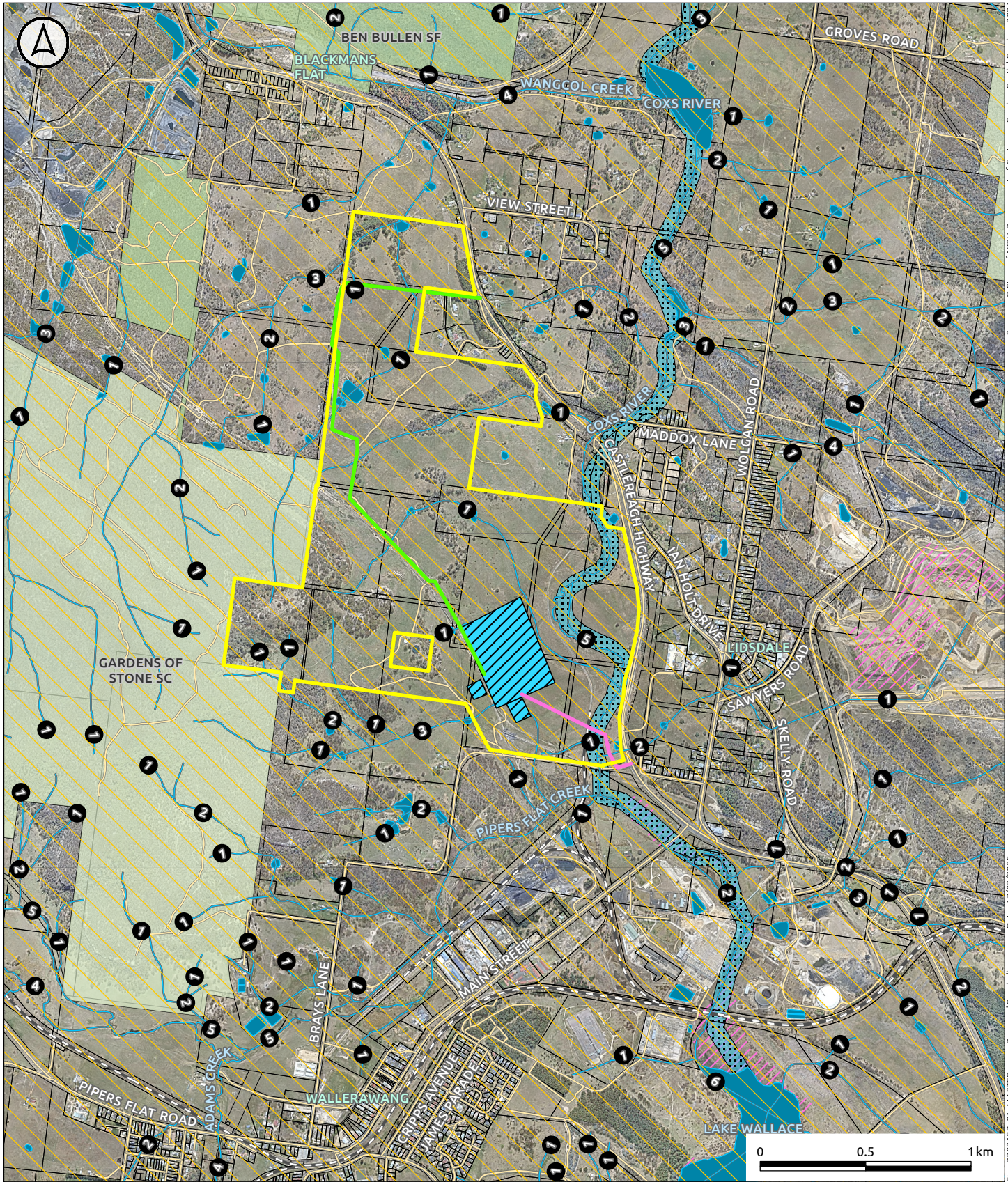
There are several watercourses located throughout the project area (see **Figure 21**). The indicative BESS and ancillary infrastructure and site access options cross both 1st, 3rd and 5th order streams. The 5th order stream is identified as Coxs river and is identified as an environmentally sensitive area (watercourse). The location of these watercourses would be considered in site access selection and the detailed location of the BESS and ancillary infrastructure.

The project area is also located within the Hawkesbury River Catchment, as well as the Sydney Drinking Water Catchment.

Flooding is discussed in **Section 6.8.3**.

Further assessment of potential water quality impacts and erosion impacts will be undertaken and provided as part of the EIS.





Legend

- Project Area
- Indicative Site Access Option 1: Karawatha Dr
- Indicative Site Access Option 2: Brays Ln
- Indicative BESS and Ancillary Infrastructure
- Lot

- Railway
- Water Body
- Watercourse (Strahler Order)
- State Forest
- NPWS Reserve
- Hawkesbury River Catchment Freshwater

- Environmentally Sensitive Areas - Sensitive Waterways
- Environmentally Sensitive Areas - Watercourses



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Pinecrest BESS

Figure 21
Water

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 © State of NSW, Department of Climate Change, Energy, the Environment and Water 2024
 © Neatmap 2025
 File: P002187_01_MASTER.aprx Prepared By: zindiananar Date: 17/03/2025

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APPENDIX A

SCOPING REPORT SUMMARY TABLE



Table 10 – Scoping report summary table

Level of Assessment	Matter	CIA	Engagement	Relevant Government Plans, Policies and Guidelines	Scoping Report Reference
Detailed	Access	Y	General	Guide to Transport Impact Assessment (TfNSW, 2024) Guide to Traffic Management – Part 3 Traffic Studies and Analysis (Austroads, 2013) Guide to Traffic Generating Developments Version 2.2 (RTA, 2002)	Section 6.2
Not required	Air	N	Not required	Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales (EPA, 2022) NSW's Sustainable Design Guidelines (Version 3.0) (Transport for NSW, 2013) Greenhouse Gas Inventory Guide for Construction Projects (Transport for NSW, 2012).	Section 6.3
Detailed	Visual	Y	Specific	Not applicable.	Section 6.4.1
Detailed	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)	Section 6.4.2

Level of Assessment	Matter	CIA	Engagement	Relevant Government Plans, Policies and Guidelines	Scoping Report Reference
				Technical Basis for Guidelines to Minimise Annoyance due to Blasting Overpressure and Ground Vibration (Australian and New Zealand Environment Council, 1990).	
Detailed	Biodiversity	Y	General	Refer to Section 6.5 of the Scoping Report.	Section 6.5
Standard	Built environment	N	General	Not applicable.	Section 6.6
Standard	Economic	Y	General	Not applicable.	Section 6.7
Detailed	Hazards	Y	General	Hazardous and Offensive Development Application Guidelines: Applying SEPP 33 (DoP, 2011) International Standard (ISO / IEC 31010) Risk Management – Risk Assessment Technique Australian Code for the Transport of Dangerous Goods by Road and Rail (7th edition) (National Transport Commission, 2007) Storage and Handling of Dangerous Goods Code of Practice (WorkCover, 2005).	Section 6.8
Detailed	Bushfire	N	General	Planning for Bushfire Protection 2019	Section 6.8.2
Standard	European heritage	N	Not required	Guidelines for Preparing a Statement of Heritage Impact (DPE, 2023) Assessing Heritage Significance (DPE, 2023) NSW Skeletal Remains: Guidelines for Management of Human Remains (Heritage Office, 1998) Criteria for the Assessment of Excavation Directors (NSW Heritage Council, 2011).	Section 6.9.1
Detailed	Aboriginal heritage	N	Specific	Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (OEH, 2011).	Section 6.9.2

Level of Assessment	Matter	CIA	Engagement	Relevant Government Plans, Policies and Guidelines	Scoping Report Reference
				Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW, 2010). Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW, 2010)	
Standard	Land use	Y	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) Land Use Conflict Risk Assessment Guide (DPI, 2011)	Section 6.10
Detailed	Social	Y	General	Social Impact Assessment Guidelines for State Significant Projects (Department of Planning Industry and Environment, 2023) Environmental Planning and Impact Assessment Practice Note: Socio-economic Assessment (Roads and Maritime Services, 2013).	Section 6.11
Standard	Water	Y	General	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)	Sections 4.1.1.2 and 6.12

Level of Assessment	Matter	CIA	Engagement	Relevant Government Plans, Policies and Guidelines	Scoping Report Reference
				Using the ANZECC Guidelines and Water Quality Objectives in NSW (Department of Environment and Conservation, 2006) 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 Flood risk management manual (2023)	

APPENDIX B

PROTECTED MATTERS SEARCH TOOL (PMST) RESULTS



APPENDIX C

PRELIMINARY VISUAL IMPACT ASSESSMENT



APPENDIX D

BIODIVERSITY ASSESSMENT



APPENDIX E

AHIMS SEARCH RESULTS

APPENDIX F

PRELIMINARY SOCIAL IMPACT ASSESSMENT



