Hume North BESS Scoping Report

Foresight Group

Hume North Battery Energy Storage System
22 August 2023

Contents

Appendices

Tables

Figures

Terms and definitions

Term	Definition
ABS	Australian Bureau of Statistics
ACHAR	Aboriginal Cultural Heritage Assessment Report
AEMO	Australian Energy Market Operator
AHIMS	Aboriginal Heritage Information Management System
Approved Hume BESS development	In 2020, the Department of Planning and Environment granted approval for a 20 MW/40 MWh BESS at 62 Murray Street, Lake Hume Village, under planning application SSD-10460.
APZ	Asset Protection Zone
BAM	Biodiversity Assessment Method
BDAR	Biodiversity Development Assessment Report
BESS	Battery Energy Storage System
BOM	Bureau of Meteorology
BSAL	Biophysical Strategic Agricultural Land
CLM Act	*Crown Land Management Act 2016*
CSEP	Community and Stakeholder Engagement Plan
DCCEEW	Department of Climate Change, Energy, the Environment and Water (former)
DECC	Department of Environment and Climate Change (former)
DECCW	Department of Environment, Climate Change and Water (former)
Development area	The indicative area that will likely be disturbed as a result of the project. The location of this area may move within the Project as the design of the project is developed.
DPE	Department of Planning and Environment
DPI	Department of Primary Industries
DPIE	Department of Planning, Industry and Environment (former)
EEC	Endangered Ecological Community
EIS	Environmental Impact Statement
EMF	Electromagnetic Field
EPA	NSW Environment Protection Authority
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
EPL	Environment Protection Licence
FCAS	Frequency Control Ancillary Services
FTE	Full Time Equivalent
GDE	Groundwater Dependent Ecosystem
GIS	Geographic Information System
HIPAP	Hazardous Industry Planning Advisory Paper
ICNIRP	International Commission on Non-Ionizing Radiation Protection
ISP	Integrated System Plan
LEP	Local Environmental Plan
LGA	Local Government Area
LVIA	Landscape and Visual Impact Assessment
MNES	Matter of National Environmental Significance
MW	Megawatt
MWh	Megawatt hour
NEM	National Electricity Market

Term	Definition
NIS	NSW Network Infrastructure Strategy
NPW Act	*National Parks and Wildlife Act 1974*
NSW	New South Wales
NVIA	Noise and Vibration Impact Assessment
OEH	Office of Environment and Heritage (former)
OSOM	Oversize Overmass
PAD	Potential Archaeological Deposit
PCT	Plant Community Type
PHA	Preliminary Hazard Analysis
PMST	Protected Matters Search Tool
POEO Act	*Protection of Environment Operations Act 1997*
Project	A 74 MW/148 MWh battery energy storage system including substation and network connection infrastructure at Lake Hume Village, New South Wales
Project area	The Project area is around four hectares (ha) and comprises one property at 32 Trout Farm Road at Lake Hume Village, NSW (Lot 11 DP 740398) and a portion of Lot 98 DP 753356 for site access.
RAP	Registered Aboriginal Party
REZ	Renewable Energy Zone
RFS	NSW Rural Fire Service
SAL	Suburb and Locality
SEPP	State Environmental Planning Policy
SSD	State Significant Development
SUA	Significant Urban Area

1. Introduction

1.1 Project overview

Foresight Australia Fund Management (Foresight) are proposing to develop a battery energy storage system (BESS) including substation and network connection infrastructure at Lake Hume Village, New South Wales (NSW) (the Project). The utility-scale BESS will have a capacity of approximately 74 megawatts (MW) with up to two hours of storage (74 MW/148 megawatts hours (MWh)), with a grid connection into Transgrid's Albury to Hume 132kV transmission line.

The Project would be located at 32 Trout Farm Road, Lake Hume Village (Lot 11 DP 740398 and part of Lot 98 DP 753356), approximately 10 km east of the Albury township. The Project is located in the City of Albury local government area (LGA). The location and regional context of the Project is shown in **Figure 1-1**.

The Project is State significant development (SSD) under Section 2.6 (b) and Schedule 1(20) of the State Environmental Planning Policy (Planning Systems) 2021 (Planning Systems SEPP), and so requires assessment in accordance with Division 4.7 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The consent authority for Project would be the Independent Planning Commission or the Minister for Planning and Public Spaces under Division 4.7 of the EP&A Act.

A referral to the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) for assessment and approval of controlled actions under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is unlikely to be required based on preliminary findings. Further details are provided in **Section 6**.

1.2 Project history and development

In 2020, the Department of Planning and Environment (DPE) granted approval for a 20 MW/40 MWh BESS at 62 Murray Street, Lake Hume Village (the approved Hume BESS development) (SSD-10460), which was located on land owned by WaterNSW in proximity to the Hume Hydro Power Station. The proponent for the approved Hume BESS development was Meridian Energy Australia, now acquired by Foresight.

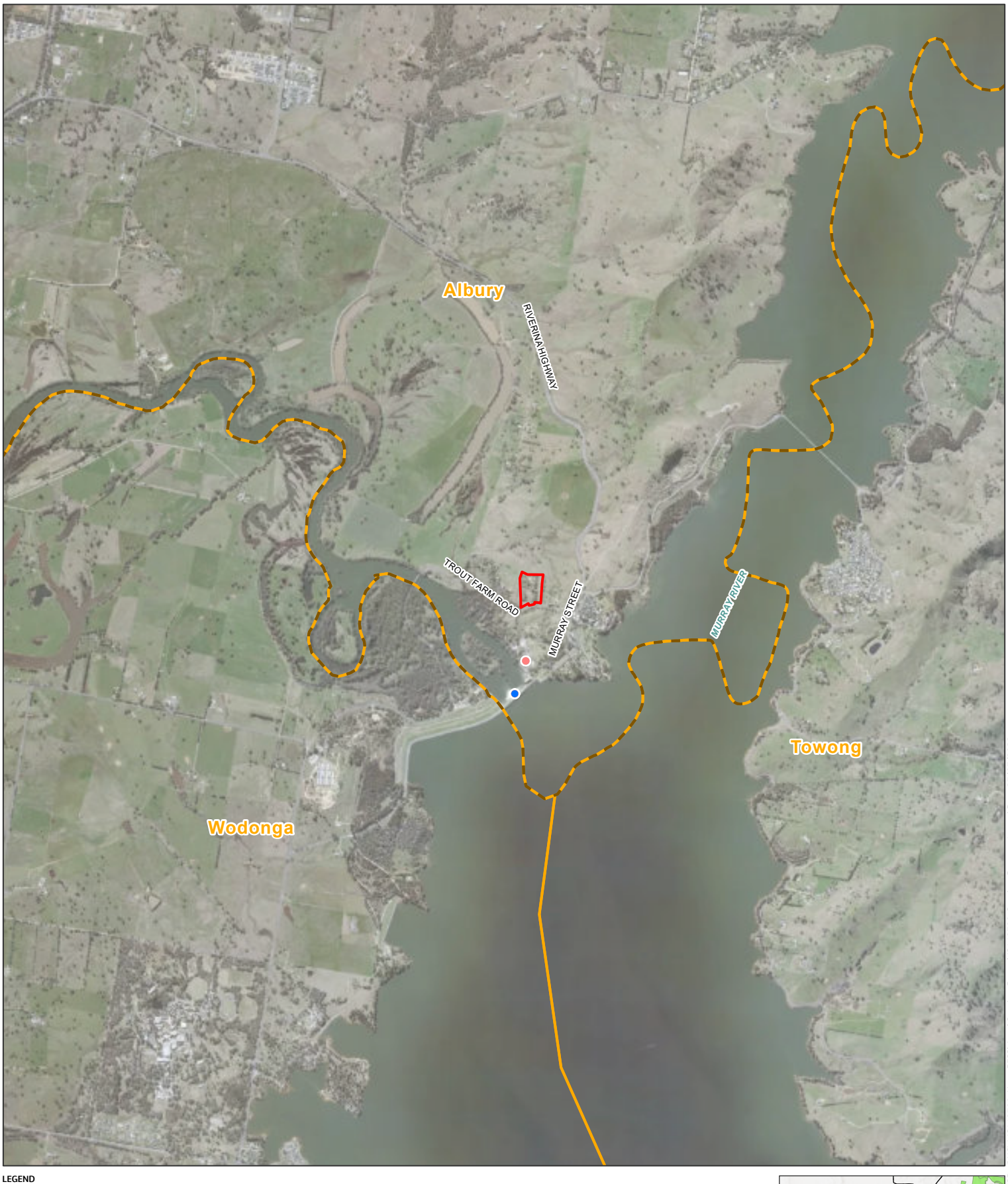
Following their acquisition of Meridian, Foresight have reviewed plans to develop a BESS identifying the following constraints and opportunities:

- In consultation with network providers, significant complexity was identified in connecting to the existing Hume Substation (as previously proposed) as a result of the existing dual NSW and Victoria connections arrangements
- Through undertaking network studies, it was identified that additional capacity was available on the existing Albury to Hume transmission line representing an opportunity to increase the project capacity
- A new alternative site option became available as a result of 32 Trout Farm Road, Lake Hume Village (the nearest neighbour to the approved Hume BESS development) being put up for sale
- Following the purchase of 32 Trout Farm Road, Lake Hume Village, preliminary constraints and design consideration have identified that a larger project can be accommodated with, in most cases, reduced environmental impact in comparison to the approved Hume BESS development.

Based on the transmission line capacity[1] of the existing 132kV transmission line and available land owned by Foresight for both the BESS and substation assets, Foresight are proposing to install a BESS with a greater discharge capacity 90 m north of the approved Hume BESS development. The approved Hume BESS development and the new Project area are shown in **Figure 3-1**.

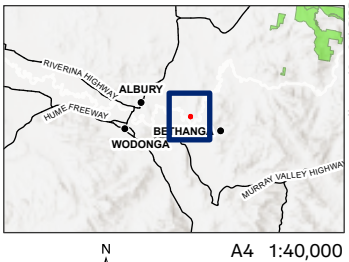
Given the new location and proposed battery size, a new project approval is required. Foresight have no intention to progress two BESS' within the locality and would seek to surrender the existing approval application under SSD-10460, facilitated under Section 4.63 of the EP&A Act, following approval of this Project.

[1] rated transmission line capacity (MW) for summer / winter



LEGEND

- Project area
- Local government area
- State border
- Hume Dam
- Hume Hydro Power Station



N

A4 1:40,000

GDA 1994 MGA Zone 55

0 1 2

Kilometres

\\ausydvs01\GISProj\NSW_IS460700_HumeBESS\Apps\Scoping_Report\IS460700_Scoping_Report_v1.aprx | Date: 27/07/2023

Figure 1-1: Project location and regional context

Data Sources: NSW Department of Planning and Environment (2023); Imagery Sources: ESRI Online Imagery Services; JACOBS (2023), Australian Bureau of Statistics (2021), TransGrid (2023); Aerometrex (2023)

1.3 Project objectives

The overarching objective of the Project is to store variable renewable energy generated in periods where supply exceeds demand such that it can be dispatched at times of greater need. More specifically, the Project seeks to:

- Provide maximum contribution to meeting Commonwealth and NSW Government renewable energy, dispatchable large-scale storage capacity, and net-zero emissions targets, by supporting security, stability and resilience of the National Electricity Market (NEM)
- Avoid, minimise and mitigate adverse impacts on the environment and community during construction and operation, while maximising potential benefits.

These objective have shaped the Project by setting the discharge capacity to align with the capacity of the existing network and within the site constraints.

1.4 Proponent

Foresight is a leading infrastructure and private equity investment manager and manages over 1.1 gigawatts (GW) of renewable energy generation capacity as well as investment funds and other assets. Foresight (formerly Infrastructure Capital Group) acquired Meridian Energy Australia and the unbuilt, previously approved Hume BESS development in 2022.

Foresight manages the Australian Renewable Investment Fund (ARIF) and have created a special purpose entity for the purposes of delivering the Project, ARIF Hume BESS Holdings Trust (refer to **Table 1-1**). Further, Foresight own the land within the Project area.

To summarise, Foresight are the Proponent for the approved Hume BESS development, landowner of the Project area at 32 Trout Farm Road, Lake Hume Village and Proponent for the development via a special purpose entity.

Table 1-1. Special purpose entity details

Item	Details
Name	ARIF Hume BESS Holdings Trust
ABN	62 930 428 376
Postal address	Level 5, 20 Hunter Street, NSW 2000

1.5 Strategies to avoid or minimise impacts

The Project has been selected as it would have a number of benefits over alternative options (refer to **Section 3.5**). A number of environmental and social constraints were identified during the Project scoping phase, and the Project design has sought to avoid these constraints by:

- Siting of Project area in close proximity to the road network and the existing easement and transmission network to avoid the need for longer transmission lines or additional easement
- Mapping preliminary biodiversity and heritage constraints to refine the indicative development area (i.e. area that will be disturbed as a result of the Project) to avoid impacts on identified constraints including native grassland
- Locating Project infrastructure at a maximum set back distance from existing road corridor to minimise potential visual amenity impacts form public roads
- Proposing development on land that is compatible with land zoning
- Location of the Project away from town centres and where there is lower population density to avoid impacts to sensitive receivers
- Locating the Project within Foresight land to minimise land use conflicts
- The Project is considered to have a reduced environmental impact in comparison to the approved Hume BESS development in regards to biodiversity, historic heritage and soils.

1.6 Purpose and structure of report

This Scoping Report has been prepared to support a request for the Secretary's Environmental Assessment Requirements (SEARs) for the Project and in accordance with the State significant development guidelines – preparing a scoping report (DPIE, 2021c). The SEARs will identify the level of environmental assessment required to be carried out as part of the EIS for submission to DPE as part of an SSD application under Division 4.1 Part 4 of the EP&A Act.

The report is structured as follows:

- Chapter 1 – Introduction
- Chapter 2 – Strategic context
- Chapter 3 – Project
- Chapter 4 – Statutory context
- Chapter 5 – Engagement
- Chapter 6 – Proposed assessment of impacts
- Chapter 7 – References
- Appendix A – Scoping summary table
- Appendix B – Aboriginal cultural heritage and historic heritage preliminary constraints report
- Appendix C – Social impacts scoping worksheet.

2. Strategic context

2.1 Project need and justification

The NEM is undergoing a transition away from large coal-fired generation to an increasing variable renewable energy mix. The NEM requires stable, dispatchable generation to balance network requirements as renewable generation fluctuates depending on the predominate solar and wind resources available at the time. Energy storage such as BESS provides the ability to firm up the energy supply, enable flexible dispatchability of renewable energy and maintain grid stability. The Project would support this energy transition as BESS are a critical part of the anticipated uptake of renewables in the NEM. As such, the Project represents a private investment in achieving the NSW Government's objectives of emissions reduction and energy security.

The Project is aligned with the NSW Government's strategic policy direction for the electricity sector, with benefits such as:

- Aligning with Commonwealth and NSW climate change commitments such as the Paris Agreement, the Large-Scale Renewable Energy Target Scheme, Integrated System Plan 2022 (AEMO, 2022) and NSW Net Zero Plan Stage 1: 2020-2030 (NSW Government, 2020)
- Support the realisation of the Albury and Riverina Murray region's objectives to diversify the local economy, and provide direct and indirect economic benefits to local communities in the region, including employment opportunities and increased spending in local communities (DPE, 2023b).

2.2 Strategic framework

The strategic plans and policies relevant to the Project are described in **Table 2-1**.

Table 2-1. Relevant strategic plans and policies

Plan, policy or strategy	Description	Relevance to the Project
International context		
The Paris Agreement	The Paris Agreement is a legally binding international treaty on climate change adopted by 196 parties in 2015. As a signatory to the agreement, the Australian Government has committed to reduce greenhouse gas emissions 43% below 2005 levels by 2030, and achieve net zero emissions by 2050.	The Project will contribute to meeting Australia's commitments under the Paris Agreement by facilitating increased renewable generation reducing the NEM's annual greenhouse gas emissions.
National context		
Integrated System Plan 2022 (ISP)	The ISP provides an integrated roadmap for the development of the NEM over the next 20 years. The key objective of the ISP is to support Australia's highly complex and rapid energy transformation towards net zero emissions, enabling low cost renewable energy and essential transmission to provide consumers with reliable, and secure and affordable power. The ISP notes that the most pressing need in the next decade (beyond what is already committed) is for dispatchable batteries, pumped hydro or alternative storage. Approximately 46 GW/640 GWh of dispatchable storage capacity is needed by 2050.	The Project will contribute to the ISP energy storage targets, and help to provide consumers with reliable, and secure and affordable electricity and meet the need for storage options to manage variable renewable energy generation.
NSW context		
NSW Electricity Strategy 2019	The NSW Electricity Strategy is the NSW Government's plan for a reliable, affordable, and sustainable electricity future that supports a growing economy. The strategy supports approximately $8 billion of private investment in	The Project is consistent with the strategy as it provides energy storage which is expected to assist with stabilising and managing the increased penetration of renewables in the grid which would lead to downward pressure

Plan, policy or strategy	Description	Relevance to the Project
	the New South Wales electricity system over a 10-year period, including $5.6 billion in regional NSW.	on electricity prices and make it more affordable for consumers and businesses.
Net Zero Plan Stage 1: 2020-2030	The Net Zero Plan is the foundation for NSW state action on climate change and goal to reach net zero emissions by 2050. It outlines the NSW Government's plan to grow the economy, create jobs and reduce emissions over the next decade.	The Project contributes to Priority 1 of the Plan: "Drive uptake of proven emissions reduction technologies that grow the economy, create new jobs or reduce the cost of living."
NSW Electricity Infrastructure Investment Roadmap 2020	The Electricity Infrastructure Investment Roadmap sets out a plan to deliver the state's first 5 Renewable Energy Zones (REZs) in the Central-West Orana, New England, South-West, Hunter-Central Coast, and Illawarra regions.	While the Project is not located within the REZs, the Project would contribute to energy storage capacity in the NEM and support the objectives of the roadmap as well as the REZs, including South-West REZ.
NSW Network Infrastructure Strategy 2023	The Network Infrastructure Strategy is intended to be a 20-year strategy for the coordinate development of network infrastructure to deliver at least five REZs and including a total 14GW of capacity to be delivered as soon as practicable by 2033.	While the Project is not located within the REZs, the Project would support the 'deliver now' pathway, to progress grid-scale generation and storage as quickly as possible.
Regional and local context		
Riverina Murray Regional Plan 2041 (RMRP)	The 2041 RMRP builds on the 2036 regional plan for the Riverina Murray region, which provides a 20-year land use plan with a targeted delivery focus in the short term. The RMRP covers aspects of land use planning including natural environment, housing and infrastructure, industry and employment.	The Project directly contributes to Objective 11 of the RMRP: "Plan for integrated and resilient utility infrastructure". It also contributes to Objective 13: "Support the transition to net zero by 2050".
Albury City Local Strategic Planning Statement (LSPS)	The LSPS guides the growth of Albury LGA over the next 20 years, with the aim of guiding future land use planning and influencing public and private investment, to enhance the wellbeing of community and the environment. The LSPS aligns with the 2041 RMRP at a local level.	The Project will contribute to Planning Priority 1: "Infrastructure supporting new development" and Priority 3: "A growing sustainable economy".

2.3 Site and surrounds

2.3.1 Regional context

The Project is located in the Riverina Murray region of NSW, on the northern side of Murray River, which marks the border between NSW and Victoria. The Project is about 800 metres north of the Hume Dam, which is a major dam just downstream of Murray River and the Mitta Mitta River confluence. The dam is 305 km from the mountain source at the Great Dividing Range, and the dam storage is regulated for irrigation, domestic, stock and urban water demands downstream for both NSW and Victoria. Foresight also operates the existing Hume Hydro Power Station as a run-of-river hydro-electric scheme with a maximum discharge capacity of 58 MW.

The Project is located in the locality of Lake Hume Village, which sits on the eastern extent of the Albury LGA in NSW. The Wodonga LGA on the Victorian side of the Murray River forms the counterpart to the Albury LGA, as the region operates as "Two Cities One Community" economically and geographically. Lake Hume Village is located about 15 km east of Albury-Wodonga and offers recreational opportunities as well as short stay accommodation options for visitors to the area. Apart from the Lake Hume Village on the western bank of Lake Hume, there are no other settlement areas in the vicinity, with the surrounding land uses around the Project being used for agricultural, industrial/commercial, recreational and energy infrastructure purposes.

2.3.2 Local context and site suitability

The Project area is freehold land, owned by Foresight, and includes an existing electricity transmission easement about 55 m wide, along the eastern boundary of the Project area and the easement extends 600 m further south where the transmission line connects to the Hume Hydro Power Station. The transmission easement and photos of the Project area are shown in **Photo 2-1** to **Photo 2-3** below.

The Project area has been affected by past residential land use and landscaping. The existing structures onsite includes the residential dwelling owned by Foresight Project, a tennis court, a pond, sheds and driveway. The Project area is located on land zoned RU2 Rural Landscape under the Albury Local Environment Plan 2010 (Albury LEP). No subdivision is proposed for the Project.

The adjacent land zones include SP2 Sewerage Systems, RU5 Village and W2 Recreational Waterways (refer to **Figure 2-1**). The Hume Weir Village Wastewater Treatment Plant located directly adjacent to the east, and the former Hume Weir Trout Farm is located about 220 m west of the Project area. The Hume Hydro Power Station is located 470 m south of the Project. There are no residential receivers within 200 m of the Project area, with the closest dwelling located 265 m east of the Project on Murray Street.

Based on the Albury City Council website, there are no subdivisions proposed in the surrounding area.

There is a Crown Land reserve at the southern portion of the Project area, being Lot 98 DP 753356. There are also Crown reserves further to the south-west and south-east of the Project area, on the southern side of Trout Farm Road (refer to **Figure 2-1**).

Within a 1 km buffer of the Project area, there are 144 receivers (refer to **Figure 3-1**) comprising:

- 1 associated dwelling
- 50 residential receivers (non-associated)
- 77 accommodation receivers
- 1 commercial receiver
- 12 industrial receivers
- 3 recreational receivers.

Photo 2-1. Site photo showing the transmission line easement in the Project area, looking south

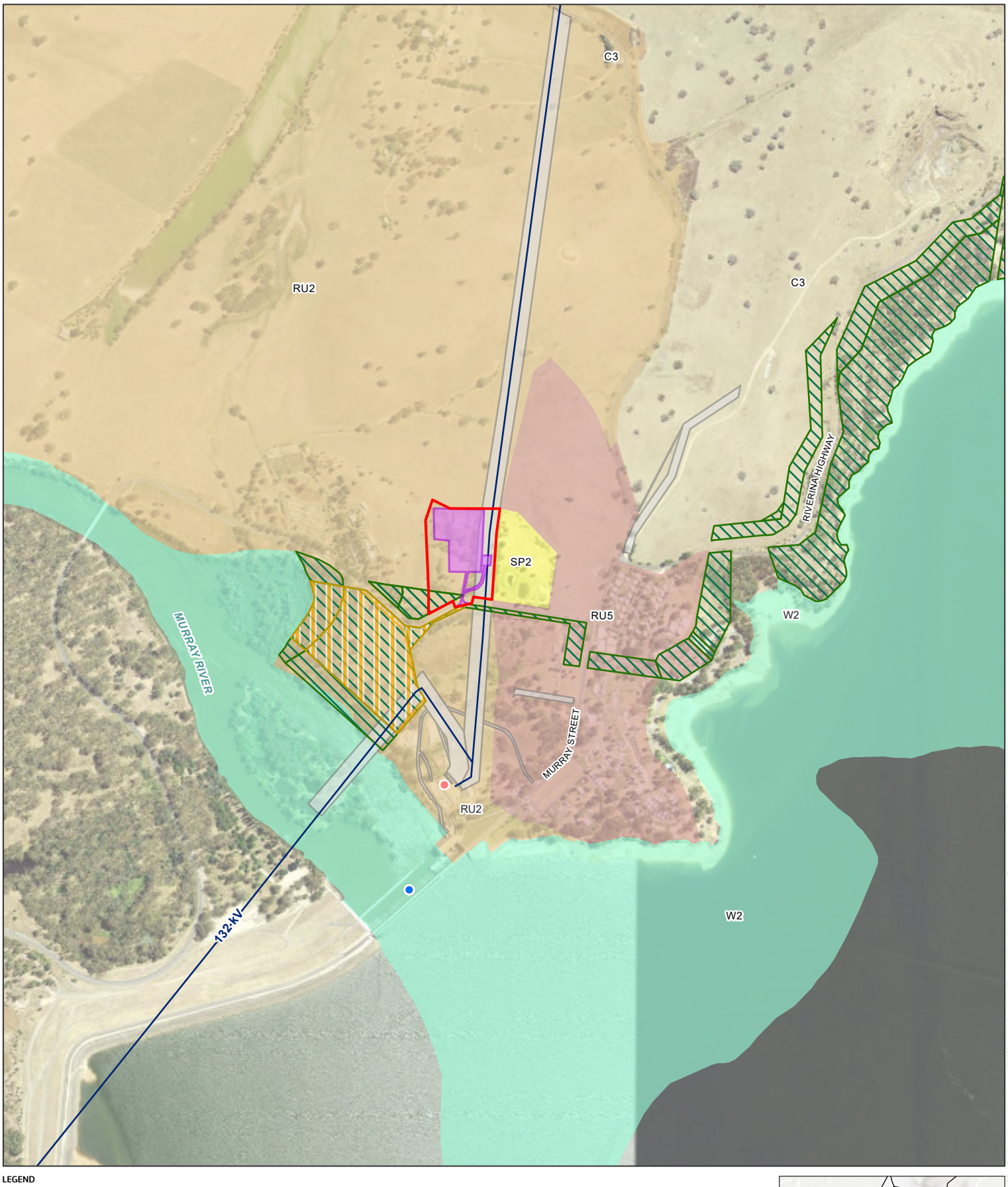
Photo 2-2. Site photo partially showing the dwelling in the Project area and planted vegetation, looking east

Photo 2-3. Site photo showing the existing access track within the Project area, looking south

The Project area is considered a suitable site for the purposes of the Project for the following key reasons:

- The Project is located on land owned by the Proponent to minimise impacts to other public and private lands
- The Project is located away from nearby sensitive receiver dwellings, and in proximity to existing industrial land uses
- Appropriate zoning of land to facilitate SSD application and planning approval for a BESS
- Availability of existing access to the Project area via an establish road network
- Direct access to the transmission network via existing transmission easement within the Project area
- Selection of an indicative development area that would minimise potential impacts to biodiversity and amenity
- The Project area that would not result in, or be subject to, potential flood impacts.

Overall the Project area was selected due to suitability of land for access the existing transmission network, available space to facilitate BESS and substation assets, avoidance of direct impact on sensitive receivers, minimal land use conflict or impacts, and the ability to avoid significant impacts to biodiversity, heritage, amenity and receiving environments with the appropriate management measures in place. Ongoing refinement to the Project design as part of the EIS preparation would be informed by further environmental site survey and assessments.



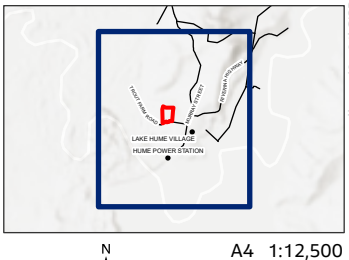
LEGEND

- Project area
- Development area
- Easement
- Crown Reserves & Licenses
- Travelling stock reserve
- Low conservation value

Land Zoning

- RU2 - Rural Landscape
- RU5 - Village
- SP2 - Infrastructure
- W2 - Recreational Waterways

- Hume Dam
- Hume Hydro Power Station
- Electricity transmission line



N

A4 1:12,500

GDA 1994 MGA Zone 55

0 250 500

Metres

\\ausydovs01\GISProj\NSW_JS460700_HumeBESS\Apps\Scoping_Report\JS460700_Scoping_Report_v1.aprx | Date: 27/07/2023

Figure 2-1: Land zoning and Crown land

Data Sources: NSW Department of Planning and Environment (2023); Imagery Sources: ESRI Online Imagery Services; JACOBS (2023), Local Land Services (2023)

3. Project description

3.1 Project area

The Project area is around four hectares (ha) and comprises one property at 32 Trout Farm Road at Lake Hume Village, NSW (Lot 11 DP 740398) and a portion of Lot 98 DP 753356 for site access.

There is one existing dwelling in the Project area with a tennis court, located near the northern extent of the property, with the rest of the Project area being predominantly landscaping and planted vegetation. The Project area is on land owned by Foresight and the dwelling is intermittently occupied by a grounds caretaker. There is one overhead transmission line at the eastern boundary of the property, being the 132kV Albury to Hume transmission line that connects to the Hume Hydro Power Station about 470 m south of the Project area. There are also 22kV conductors crossing the north-eastern corner of the Project area.

Within the Project area an indicative development area of approximately 1.8 ha has been identified based on where construction and operational activities are likely to occur, as shown in **Figure 3-1**. The development area aims to avoid key constraints including potential biodiversity and amenity impacts. Further refinement of the Project would occur during design development and preparation of the EIS.

Site access to the Project area would be via Riverina Highway, Murray Street then Trout Farm Road. An internal access track is proposed to facilitate the transport of equipment and materials to the Project area during construction. Road upgrades may be required on Trout Farm Road to providing safe site access to the Project area.

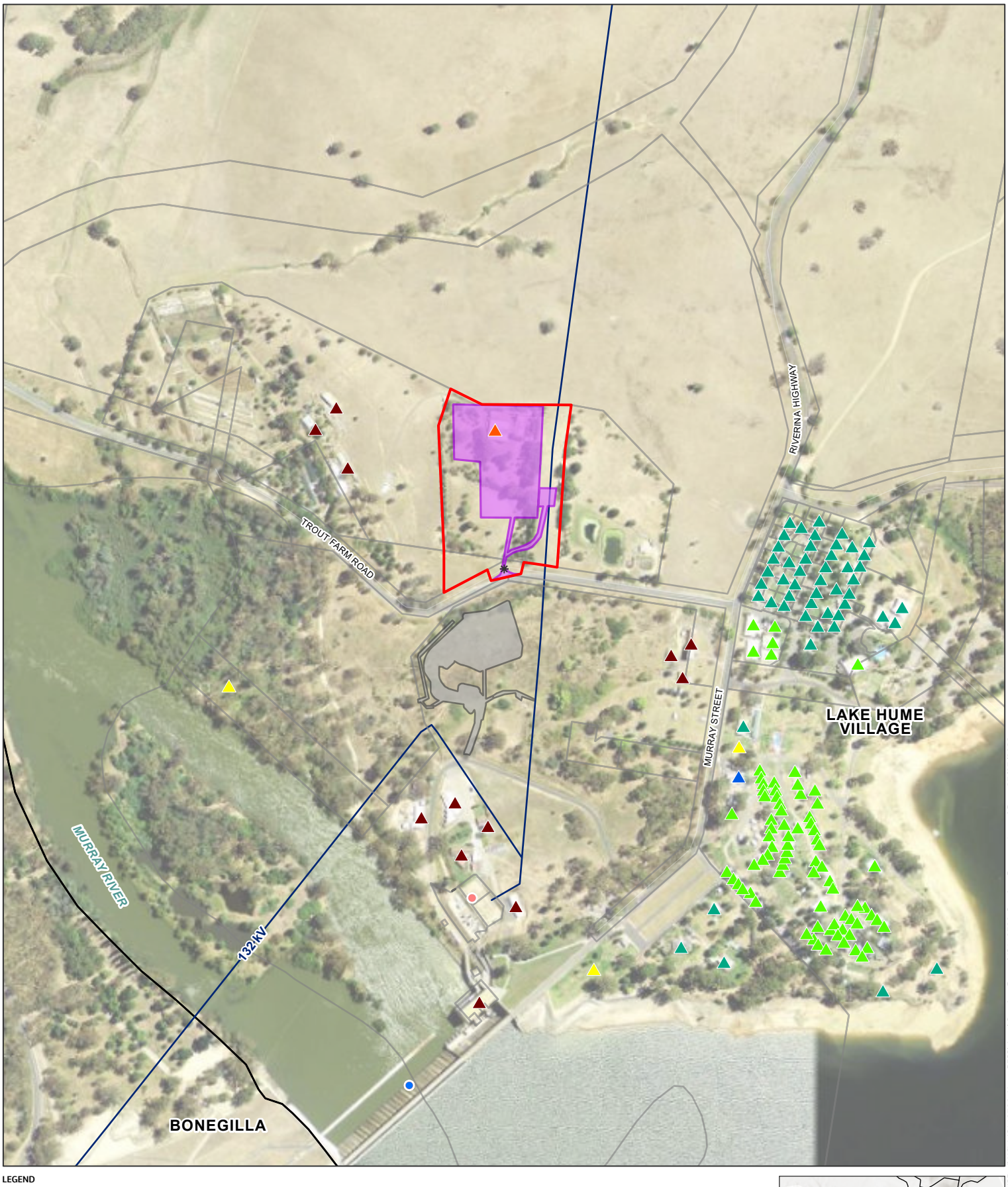


Figure 3-1: Local context and Project area

Data Sources: NSW Department of Planning and Environment (2023); Imagery Sources: ESRI Online Imagery Services; JACOBS (2023), Australian Bureau of Statistics (2021), TransGrid (2023)

3.2 Project description

The Project would involve the development, construction, operation and decommissioning of a BESS with a capacity of 74MW/148MWh. The proposed site access and the indicative development area for the Project is provided in **Figure 3-1**.

The Project would include the following key components:

- Electrical infrastructure including:
  - A 74 MW/ 148 MWh BESS comprised of battery modules installed in enclosures resembling shipping containers, with associated ancillary infrastructure
  - Power inverters, transformers and switchgear
  - A Project substation and control room
  - Underground cable or overhead transmission lines connecting the BESS to the Project substation and to the existing electricity transmission network
- Other permanent ancillary infrastructure including:
  - Site office
  - Operation and maintenance facility
  - Car parking
  - Security fencing, lighting, signage and lightning protection
  - Vegetation screening where required
  - Internal access track
- Temporary construction facilities including:
  - Construction compounds and laydown areas
  - Stormwater and sediment controls for the Project area.
- Vegetation removal and the demolition of the dwelling within the Project area.

3.3 Construction activities

The construction of the Project is expected to take up to 12 months to complete. Construction activities would be undertaken during standard day time construction hours:

- Monday to Friday – 7 am to 6 pm
- Saturday – 8 am to 1 pm
- Sunday and Public Holidays – no work.

The anticipated construction and commissioning stage would occur from mid-2025 (subject to approval and completion of post approval compliance obligations) with the commissioning period expected to take 3 to 4 months.

During construction it is expected that approximately 50 full time equivalent (FTE) workers would be required during the peak construction period. Typical construction activities would include installation and maintenance of environmental controls, upgrading construction access tracks, demolition of existing structures, establishment of construction facilities and laydown area, civil works, electrical works, testing and commissioning activities.

The construction workforce would be sourced from the local area as far as practicable. Accommodation for non-local construction staff is expected to be sourced through the use of available short-term accommodation in surrounding townships and regional centres, including Albury-Wondonga.

3.4 Operation and decommissioning

The Project is anticipated to be operational from 2026. During operation, it is anticipated that up to two operational staff would be required on the basis of one to two weeks each month. The Project is proposed to operate unmanned 24 hours a day and seven days a week, with occasional operation and maintenance staff required to work during standard day time hours and potentially out of hours for any emergency response and maintenance work.

The Project has a target life of 20 years with components anticipated to be replaced or upgraded as required and life may be extended if feasible at the time. In the event of decommissioning, the Project area would be returned to its original state with all above-ground BESS infrastructure removed. The recycling opportunities for Project components and rehabilitation of the site would be further investigated and outlined in the EIS. The standard construction hours for the construction of the Project would also apply to the decommissioning phase.

3.5 Alternatives considered

The Project has been in development since 2019, prior to the acquisition of Meridian Energy Australia by Foresight. As part of the approved Hume BESS development, two areas within WaterNSW landholdings were originally considered. The preferred location for the approved Hume BESS development was selected as it is a permissible land use within the zone and was not constrained by the presence of transmission easements, subterranean infrastructure, existing operational uses, unfavourable topography or at elevated risk of containing items of heritage significance.

Foresight have since reviewed plans to develop a BESS based on the constraints and opportunities presented in **Section 1.2**. Foresight has also further considered options and siting to identify the optimal Project, as follows:

- Option 1: Do nothing option
  - The 'do nothing' approach would involve not constructing and operating the Project, or the approved Hume BESS development. This approach would not support the Commonwealth and NSW Government and local or regional strategies and policies to reduce emissions, improve grid stability and resilience, and increase investment in regional communities and new technologies.
- Option 2: Approved Hume BESS development
  - This option would involve construction and operating the Project at the currently approved location at 62 Murray Street, Lake Hume Village, with a reduced energy storage capacity. Option 2 is considered to provide less benefits compared to the proposed Project, which would offer increased battery capacity, more optimal connection to the transmission network, a larger area of land for development and implementing buffer zones, and can avoid impacts to WaterNSW-owned land.
- Option 3: Alternative site for BESS
  - Brief consideration of other locations along the network have been considered. Alternative locations for a BESS towards the Albury Substation would be too close to residential receivers and the township. Other locations along the existing transmission would be constrained as Foresight do not own property at these locations and would contribute to property fragmentation for large rural landholdings and potential habitat fragmentation across vegetated areas.
- Option 4: BESS at nominated location (preferred option)
  - This option includes developing the Project at the nominated location. This option would utilise a Foresight landholding and existing transmission network on the property. Further, an indicative development area shown on **Figure 3-1**, was selected to avoid and minimise potential environmental impacts where feasible, in particular impacts to native vegetation. Refinements included avoiding Project infrastructure development in the Crown Land reserve at the southern extent of the Project area and avoiding areas of native grassland in the south-western portion of the Project.

The preferred option for the Project is ***Option 4***. Option 4 was selected based on the reasons stated above. Further refinement to the layout of the Project will continue as part of the EIS preparation and detailed design, as well as in response to technical environmental assessments, community consultation and stakeholder feedback.

4. Statutory context

The relevant statutory framework for the Project is provided in **Table 4-1** and includes consideration of the EP&A Act, other Commonwealth, NSW and local legislation and environmental planning instruments to set out the planning approval pathway for the Project. **Table 4-1** is set out in accordance with the State significant development guidelines – preparing a scoping report (DPIE, 2021c). Detailed consideration of relevant statutory requirements will be provided in the EIS.

Table 4-1. Statutory context

Statutory framework	Requirement and consideration for the Project
Power to grant approval	
EP&A Act and the Planning Systems SEPP	The Project meets the threshold for SSD and is subject to assessment under Part 4 of the EP&A Act. Approval for the Project would be sought under Part 4, Division 4.7 of the EP&A Act. Under Section 4.36(2) of the EP&A Act, a State Environmental Planning Policy (SEPP) may declare any development to be SSD. Under Section 2.6(1) of the Planning Systems SEPP, a development is classified as SSD if: *(a) the development on the land concerned is, by the operation of an environmental planning instrument, not permissible without development consent under Part 4 of the EP&A Act, and* *(b) the development is specified in Schedule 1 or 2.* Schedule 1(20) of the Planning Systems SEPP defines the following as SSD: *Electricity generating works and heat or co-generation* *Development for the purpose of electricity generating works or heat or their co-generation (using any energy source, including gas, coal, biofuel, waste, hydro, wave, solar or wind power) that:* *(a) has a capital investment value of more than $30 million.* The Project is development for the purpose of electricity generation, the definition of which includes energy storage, and will have a capital investment value of more than $30 million. Therefore the Project is proceeding with an application for planning approval as an SSD. The consent authority for the Project is the Independent Planning Commission or the Minister for Planning and Public Spaces.
Permissibility	
State Environmental Planning Policy (Transport and Infrastructure) 2021	Section 2.36 of State Environmental Planning Policy (Transport and Infrastructure) 2021 provides that development is permissible with consent for the purposes of electricity generating works may be carried out by any person with consent on land in a prescribed non-residential zone. The Project is located on land zoned as RU2 Rural Landscape, which is a prescribed non-residential zone under the definitions of Section 2.35 of State Environmental Planning Policy (Transport and Infrastructure) 2021 and is therefore permissible with consent under Part 4 of the EP&A Act.
Commonwealth legislation	
EPBC Act	Any action which could have a significant impact on any matters of national environmental significance (MNES) must be referred to the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW). The nine MNES protected under the EPBC Act are: ▪ World heritage properties ▪ National heritage places ▪ Wetlands of international importance (listed under the Ramsar Convention) ▪ Listed threatened species and ecological communities ▪ Migratory species protected under international agreements ▪ Commonwealth marine areas ▪ The Great Barrier Reef Marine Park ▪ Nuclear actions (including uranium mines) ▪ A water resource, in relation to coal seam gas development and large coal mining development.

Statutory framework	Requirement and consideration for the Project
	A search of the Commonwealth Protected Matters Search Tool (PMST) and a biodiversity site inspection was completed in May 2023. A referral to DCCEEW for potential impacts to MNES under the EPBC Act is unlikely to be required.
Native Title Act 1993	The Commonwealth *Native Title Act 1993* recognises and protects native title rights in Australia. It allows a native title determination application (native title claim) to be made for land or waters where native title has not been validly extinguished, for example, extinguished by the grant of freehold title to land. The Project area is currently not subject to any native title applications.
NSW environmental legislation	
Protection of Environment Operations Act 1997 **(POEO Act)**	Under Section 48 of the POEO Act, an Environment Protection Licence (EPL) from the NSW Environmental Protection Authority (EPA) is required for activities listed in Schedule 1. The Project does not constitute a scheduled activity under Schedule 1 and will not require an EPL. The POEO Act has a number of regulations relating to matters of pollution, waste, air quality and noise. If relevant, these specific sections would be considered as part of the EIS and technical assessments.
Roads Act 1993	Under Section 138 of the Roads Act an approval is required to permit any work in, on or over a public or classified road. The Project may require road upgrades to Trout Farm Road to enable safe site access. Relevant road work approvals will be sought prior to any work commencing.
Biodiversity Conservation Act 2016 **(BC Act)**	The BC Act aims to conserve threatened species, populations and ecological communities through ensuring appropriate assessment, management and regulation of actions that may damage critical or other habitat for a listed threatened species, or may otherwise significantly affect a threatened species, population or ecological community. Consideration of potential impacts of the Project on biodiversity values is provided in **Section 6.2**. A detailed assessment of biodiversity impacts would be carried out as part of the EIS, in accordance with the BC Act, the Biodiversity Assessment Method, and requirements of the Biodiversity Offset Scheme.
Biosecurity Act 2015	Under the Biosecurity Act, all plants are regulated with a general biosecurity duty to prevent, eliminate or minimise any biosecurity risk they may pose. Section 22 requires that any person who deals with any plant, who knows (or ought to know) of any biosecurity risk, has a duty to ensure the risk is prevented, eliminated or minimised, so far as is reasonably practicable. The Biosecurity Act would be applicable if listed weeds are identified within the Project area.
National Parks and Wildlife Act 1974 **(NPW Act)**	The NPW Act provides for the management and conservation of land declared as national parks and conservation areas, as well as regulating the management of Aboriginal objects and places. No part of the Project falls within land reserved under the NPW Act or NSW National Parks owned or managed lands. The closet National Parks and Wildlife Service Estate is the Mullengandra Nature Reserve located about 20 km north-east of the Project. Preliminary desktop search for Aboriginal heritage identified no recorded sites within the Project area. A pre-liminary site inspection has confirmed low potential for the site to contain Aboriginal objects or values. Consideration of potential impacts of the Project on biodiversity values is provided in **Section 6.4**. The EIS would include an assessment of potential impacts on Aboriginal heritage.
Heritage Act 1977	Under Section 146 of the Heritage Act, if a relic is discovered or located, the Heritage Council must be notified of the location of the relic. The Project would not impact on any listed heritage items. The EIS would include an assessment of potential impacts on unlisted heritage items or values.
Crown Land Management Act 2016	Under the CLM Act, consent from NSW Crown Lands is required for works over Crown land. There is a Crown land reserve at the southern portion of the Project area, being Lot 98 DP 753356. There are also Crown reserves further to the south-west and south-east of the Project area, on the southern side of Trout Farm Road. Potential impacts on Crown reserves will be further investigated in the EIS and NSW Crown Lands will be consulted should any approvals be required for any works on Crown reserves.

Statutory framework	Requirement and consideration for the Project	
Approvals not required under Section 4.41 of the EP&A Act		
Approvals not required	Section 4.41 of the EP&A Act outlines approvals that do not apply in the case of this Project and where authorisations are not required for SSD that has been approved, as follows:	
	▪ A permit under section 201, 205 or 219 of the *Fisheries Management Act 1994* (FM Act)	The Project would not involve dredging or reclamation works or works in any watercourse. The Project would not impact on marine vegetation or cause blockage in fish passage. No permits under the relevant FM Act sections are required.
	▪ An approval under Part 4, or an excavation permit under section 139, of the *Heritage Act 1977*	No listed heritage items are located within or in the vicinity of the Project area.
	▪ An Aboriginal Heritage Impact Permit (AHIP) under section 90 of the NPW Act	No listed or previously recorded Aboriginal heritage sites items are identified within the Project area.
	▪ A bush fire safety authority under section 100B of the *Rural Fires Act 1997*	The Project area is mapped as bush fire prone land (Vegetation Category 3), with medium bush fire risk vegetation. Potential risks associated with bush fires would be assessed further in the EIS.
	▪ A water use approval under section 89, a water management work approval under section 90 or an activity approval (other than an aquifer interference approval) under section 91 of the *Water Management Act 2000* (WM Act).	The Project would not require a water use approval under section 89 of the WM Act. The Project would not involve any water management work under section 90 of the WM Act. The Project would not involve work being carried out on waterfront land which means controlled activity approval is not required under section 91(2) of the WM Act. No aquifer interference activity would occur and as such section 91(3) would not apply to the Project.
Relevant approvals required under Section 4.42 of the EP&A Act		
Relevant approvals	Section 4.42 of the EP&A Act outlines where authorisations cannot be refused if it is necessary for carrying out SSD and must be applied consistently, as follows:	
	▪ An aquaculture permit under section 144 of the FM Act	The Project would not involve aquaculture development and no aquaculture permit is required.
	▪ An approval under section 15 of the *Mine Subsidence Compensation Act 1961* (repealed by *Coal Mine Subsidence Compensation Act 2017*)	The Project is not located within a mine subsidence district, and an approval would not be required.
	▪ A mining lease under the *Mining Act 1992*	There are no exploration and mining titles or applications relevant to the Project area. A mining lease is not required.
	▪ A production lease under the *Petroleum (Onshore) Act 1991*	The Project would not involve petroleum production and no production lease is required.
	▪ An environment protection licence (EPL) under Chapter 3 of the POEO Act (for any of the purposes referred to in section 43 of that Act)	An EPL would not be required for the Project.
	▪ A consent under section 138 of the *Roads Act 1993*	Road upgrade on Trout Farm Road may be required to provide site access for the Project and relevant road work approvals will be sought prior to any work commencing.
	▪ A licence under the *Pipelines Act 1967*	No pipelines or associated licences would be required for the Project.

Statutory framework	Requirement and consideration for the Project
Environmental planning instrument	
State Environmental Planning Policy (Resilience and Hazards) 2021	The object of Chapter 3 (Hazardous and offensive development) of the State Environmental Planning Policy (Resilience and Hazards) 2021 is to ensure that measures are used to reduce the impact of a development that is potentially hazardous or offensive. While lithium ion batteries (likely to be used for the Project) do not exceed screening criteria under the State Environmental Planning Policy (Resilience and Hazards) 2021, A preliminary hazard analysis (PHA) will be prepared as part of the EIS to assess potential hazards and risks of the Project in accordance with relevant Hazardous Industry Planning Advisory Papers (HIPAPs).
Albury LEP	The EIS will consider: ▪ The relevant objectives and land uses for Zone RU2 Rural Landscape ▪ Clause 7.1 Earthworks ▪ Clause 7.2 Water.

5. Engagement

5.1 Scoping phase consultation

Foresight will work with local community members and stakeholders to inform and communicate the planning and delivery of the Project. A comprehensive Community and Stakeholder Engagement Plan (CSEP) was developed to ensure the above consultation objectives would be achieved. The CSEP outlines how engagement would be carried out during the Project development and would be kept updated as the Project progresses through the Scoping Report and EIS phases.

The objectives of community and stakeholder engagement during the Scoping Report phase include the following:

- Form relationships with neighbouring landowners, to explain the planning process, provide an initial overview, and obtain their feedback
- Provide consistent messaging to neighbouring landowners about the proposed project, to ensure a 'no surprises' approach
- Document and action communication received from neighbouring landowners and other stakeholders or community members
- Provide a responsive point of contact for any enquiries, complaints, and suggestions.

5.1.1 Summary of engagement activities

Communication and engagement activities to date and feedback received are summarised in **Table 5-1.**.

Table 5-1. Engagement activities

Stakeholder group	Activity	Description	Approach to address issue
Nearby landowners and stakeholders	Emails sent out on 19 June 2023 to the following: ▪ Lake Hume NSW Holiday and Caravan Park ▪ Lake Hume Resort ▪ Lake Hume community Reference Group ▪ Lake View Villas Lake Hume Hire & Fishing Charters ▪ Local residents	Emails were sent out to nearby landowners and stakeholders introducing the Project and its relation to the approved Hume BESS development. The email emphasised Foresight's intention to only proceed with one BESS in the locality, and provided an option for an initial phone conversation about the Project. Two emails providing feedback were received, including the previous owner of the Project area and the owner of the adjacent Trout Farm. Issues raised include: ▪ Scenic character ▪ Consideration of other locations for the Project ▪ Clarity on interaction with previous approval ▪ Further information regarding any association with the Hume Dam Hydro Station.	▪ The Project would seek to minimise visual impacts where possible ▪ The consideration of other locations is detailed in **Section 3.5** ▪ The Project would seek to surrender the existing approval under SSD-10460 following approval of this Project ▪ This Project has no interaction with the Hume Dam Hydro Station

Stakeholder group	Activity	Description	Approach to address issue
DPE	Online meeting on 17 May 2023	Foresight provided a briefing to DPE to introduce the Project and understand DPE's concerns. Issues raised include: ▪ Project would not constitute a modification to the existing approval (SSD-10460) ▪ Requirement for early consultation and re-engagement with stakeholders ▪ Potential biodiversity and heritage impacts ▪ Visual amenity impacts ▪ Traffic impacts and potential road upgrades ▪ Cumulative impacts ▪ EIS lodgement and adequacy review expectations.	▪ Project is seeking project approval, not a modification ▪ Consultation with stakeholders, including Council and BCS ▪ Scoping report has included a viewshed analysis to gain a preliminary understanding of visual amenity impacts at nearby residential receivers
DPE Biodiversity, Conservation and Science (BCS)	Online meeting on 29 June 2023	Meeting was held with BCS to discuss ecological values of the site and assessment process, specifically relating to: ▪ Threatened fauna ▪ Hollow bearing trees ▪ Planted native vegetation.	▪ Targeted surveys would be carried out to inform the Biodiversity Development Assessment Report (BDAR) for the Project as part of the EIS. ▪ The BDAR would assess potential impacts on biodiversity values in accordance with the Biodiversity Assessment Method 2020 (DPIE, 2020).
Albury City Council	▪ Emails sent out on 21 June 2023. ▪ In-person Project presentation to occur to the City Council department members the week of 27 July 2023.	Emails were sent out to City Council to introduce Foresight and the Project. Meeting was held with Council to understand Council's concerns. Council was supportive of the Project, noting the following concerns: ▪ Construction impacts including site access and road safety ▪ Visual amenity impacts ▪ Potential biodiversity impacts.	▪ A traffic and transport impact assessment will be included as part of the EIS to assess potential traffic, access, safety risks and impacts associated with the construction, operation and decommissioning of the Project. ▪ Figure 6-2 provides a preliminary visual catchment assessment for the Project. The assessment demonstrates that the large volume of residential receivers to the east should not have views to the Project. A Landscape and Visual Impact Assessment (LVIA) will be prepared for the EIS which will include a detailed visual assessment that would further analyse the potential visual impact of the Project. ▪ The Project has avoided biodiversity constraints on site where possible. A BDAR would be prepared as part of the EIS to assess potential impacts on biodiversity

Stakeholder group	Activity	Description	Approach to address issue
			values in accordance with the Biodiversity Assessment Method 2020 (DPIE, 2020).
Transgrid	▪ Online meeting on 18 May 2023 ▪ Email on 31 May 2023 for the submission of the connection enquiry	Pre-connection enquiry submission was held with Transgrid to confirm the connection process. Continuous engagement will be held between the Project and Transgrid during development and construction of the Hume North BESS including during connection agreement through to 5.3.4A and financial investment decision	No Project design changes as a result of early consultation.
Potential Aboriginal stakeholders	Registered Aboriginal Party (RAP) advertising	Print advertisements requesting registration of Aboriginal stakeholders interested in the Project published in the Border Mail newspaper on 27 May 2023. The relevant agencies notified are as follows: ▪ Heritage NSW ▪ Albury and District Local Aboriginal Land Council ▪ Office of The Registrar, *Aboriginal Land Rights Act 1983* (NSW) ▪ National Native Title Tribunal ▪ Native Title Services Corporation Limited ▪ Albury City Council ▪ Murray Local Land Services	The following seven individuals and groups have requested to be RAPs for the project: ▪ Albury and District LALC ▪ Yalmambirra.

5.2 EIS phase consultation

Consultation during the EIS preparation and public exhibition phase will focus on:

- Ensuring community and stakeholder engagement is undertaken in accordance with the SEARs and relevant guidelines
- Informing the community regarding the Project through targeted engagement, and to collate feedback where possible
- Building on relationships established through early engagement activities.

Engagement will continue on specific issues and opportunities relevant to the Project to inform the preparation of the EIS, in accordance with Undertaking Engagement Guidelines for State Significant Projects (DPIE, 2021d). Foresight is committed to continue to engage landowners, the community and stakeholders throughout all Project stages and to build and maintain strong relationships within the community.

The following community and stakeholder engagement mechanisms will continue to occur during the preparation of the EIS:

- Phone calls and emails to key stakeholders
- Distribution of Project collateral
- One-on-one meetings with key stakeholders
- Community Information Event / Webinar
- Analysis of stakeholder submissions.

The EIS will include details of issues raised during engagement with the community and other stakeholders. It will also clearly identify where these issues have been addressed through Project design and planning and environmental assessments.

6. Proposed assessment of impacts

A preliminary environmental assessment has been carried out to identify matters requiring further assessment in the EIS and the level of assessment required (detailed or standard). In accordance with the State significant development guidelines – preparing a scoping report (DPIE, 2021c), a detailed assessment is required where the Project may result is significant impacts on the matter and where impacts are not well understood. For matters where the Project is unlikely to result in a significant impact and impacts are easy to predict and mitigate, a standard level of assessment is suitable.

Based on preliminary site inspections and desktop reviews, the level of assessment identified for each matter in the EIS is as follows:

- Detailed assessment:
  - Noise and vibration
- Standard assessment
  - Biodiversity
  - Visual amenity
  - Aboriginal heritage
  - Historical heritage
  - Traffic and transport
  - Social and economic impacts
  - Land
  - Water
  - Hazards and risks
  - Air quality
  - Waste.

Further details are included in the scoping summary table in **Appendix A**. The sections below provide a preliminary assessment of the existing environment, potential impacts and proposed further assessments for the Project.

6.1 Noise and vibration

6.1.1 Existing environment

The Project is located in a semi-rural setting with low density dwellings clustered about 280 m to the east within Lake Hume Village, identified as non-associated dwellings.

Nearby land uses around the Project area include the Hume Weir Village Wastewater Treatment Plant located directly adjacent to the east, and the former Hume Weir Trout Farm about 220 m west of the Project area. The Hume Hydro Power Station is located 470 m south of the Project and may influence the existing background noise levels around the Project area. The nearby land uses and sensitive receivers are mapped in **Figure 3-1**.

Noise monitoring was conducted over a one-week period in April and May of 2023 to understand the background noise level in the locality. Two monitoring locations were selected, both on WaterNSW owned land, one on the corner of Trout Farm Road and Murray Street (NM1), with the other located on the corner of Murray Street and the entry to Hume Dam (NM2). A summary of the monitored background noise levels has been provided in **Table 6-1**.

Table 6-1 shows the equivalent noise level (L_{Aeq}) and 'Rating Background Level' (RBL). In this context the L_{Aeq} represents the continuous A-weighted sound pressure level of the source over 15 minutes, while the RBL represents the background level which is used for background noise assessments. The RBL represents the A-weighted noise level that is exceeded for 90% of the time.

Table 6-1. Noise Monitoring Results and Background Noise Levels

Monitor ID	Monitoring Location	Monitoring Duration	Measurement	Measured Noise Level – dB(A)		
				Day (7am to 6pm)	Evening (6pm to 10pm)	Night (10pm to 7am)
NM1	Corner of Trout Farm Rd and Murray St	26th April – 4th May	L_{Aeq} (equivalent noise level)	54	48	45
			Rating Background Level (Background L_{A90})	37	34	31
NM2	Corner of Murray St and Hume Dam entry		L_{Aeq} (equivalent noise level)	53	46	42
			Rating Background Level (Background L_{A90})	42	42	42

6.1.2 Potential impacts

Noise generated during construction and operation of the Project may result in noise levels above relevant limits at nearby non-associated landowners. There may also be the potential for other noise and vibration-related impacts (e.g., noise impacts during decommissioning, vibration impacts during construction and noise generated by construction traffic and construction workforce) that would also require consideration within the EIS.

6.1.3 Assessment approach

The EIS will include a Noise and Vibration Impact Assessment (NVIA), which will involve an assessment of likely construction (including decommissioning) and operation noise impacts and recommendation of mitigation measures to avoid or minimise noise and vibration impacts on nearby sensitive receivers around the Project area.

The NVIA will assess all components of the Project including:

- Battery energy storage system (BESS) noise in line with the requirements of the Noise Policy for Industry (EPA, 2017)
- Construction noise in line with the requirements of the Interim Construction Noise Guideline (DECC, 2009) or the current version of the Construction Noise Guideline if published before the NVIA completion
- Construction Traffic Noise under the NSW Road Noise Policy (DECCW, 2011)
- Vibration impacts under Assessing Vibration: A technical guideline (DEC, 2006), British Standard BS 7385-2:1993, Evaluation and measurement for vibration in buildings – Part 2: Guide to damage levels from groundborne vibration and German Standard DIN 4150-3:2016 Vibrations in buildings – Part 3: Effects on structures.

6.2 Biodiversity

6.2.1 Existing environment

A desktop review of relevant biodiversity databases was carried out on 29 May 2023 including searches of the following:

- EPBC Act Protected Matters Search Tool (DCCEEW, 2023)
- Bureau of Meteorology (BOM) Groundwater Dependent Ecosystems Atlas (BOM, 2023)
- Key fish habitat, and freshwater threatened species distribution mapping on the Fisheries Spatial Data Portal (DPI, 2023)
- NSW Biodiversity Values Map and Threshold Tool (DPE, 2023a).

The results of the PMST with a 10 km buffer around the Project area showed that there is one National Heritage Place (Bonegilla Migrant Camp 3.5 km south), seven wetlands of international importance (Ramsar

Wetlands, more than 100 km downstream), three listed threatened ecological communities (TECs), 40 listed threatened species and 12 listed migratory species within this buffer.

There are no mapped key fish habitats near the Project area. The Murray River is mapped as predicted habitat for the Southern Pygmy Perch (*Nannoperca australis*), Flathead Galaxias (*Galaxias rostratus*), Murray Crayfish (*Euastacus armatus*), and Trout Cod (*Maccullochella macquariensis*). The Murray River is also mapped on the Biodiversity Values Map, which identifies areas with high biodiversity value that is sensitive to impacts from development.

There are no mapped terrestrial or aquatic groundwater dependent ecosystems (GDEs) within the Project area. There is mapped terrestrial GDEs about 220 m south-west of the Project area associated with River Red Gum herbaceous-grassy very tall open forest wetland on inner floodplains in the lower slopes sub-region of the NSW South Western Slopes Bioregion and the eastern Riverina Bioregion. In addition, the Murray River, located about 330 metres south-west and an area of floodplain wetland approximately 680 metres north-west of the Project area are identified as aquatic GDEs (BOM, 2023).

6.2.2 Field survey

A field assessment of the Project area was carried out by Jacobs ecologists on 13 April 2023. The Project area consists of planted vegetation and native grass, as well as four large Eucalypt habitat trees (refer to **Figure 6-1**). The planted vegetation White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion (plant community type (PCT) 266), makes up the majority of the vegetation occurring along the western edges of the Project area, generally in two condition classes:

- Low condition – There are scattered White Box and Red Gum (*Eucalyptus albens, Eucalyptus blakelyi*) (likely planted) with a mix of other planted trees (Australian and European). A windbreak along the fence contains callistemon, melaleuca and acacia, and with some native grass species present. The vegetation are generally disturbed and/or planted, and therefore are not considered remnant PCT 266.
- Derived Native Grassland – There is native grass in the south-western corner of the Project area (derived grassland of PCT 266) with species including *Bothriochloa macra, Themeda triandra* and *Sporobolus creber* with occasional Eucalypt seedling.

While the planted vegetation makes up the majority of vegetation in the Project area and do not form any PCT, the vegetation can provide habitat and flower food sources for Squirrel Glider (*Petaurus norfolcensis*). The Squirrel Glider is identified to likely be present within the Project area in purpose-made nest boxes based on previous records by volunteers. The planted vegetation contains trees that are not native species but provides food and hollows for fauna.

In addition, there is an artificial garden pond west of the dwelling within the Project area.

No threatened flora or fauna was recorded during the field assessment.

6.2.3 Potential impacts

The Project design has been refined to avoid the areas of native grassland within Project area.

Potential biodiversity impacts during construction and decommissioning of the Project would be associated with removal of vegetation, potential disturbance and loss of habitat, and potential indirect impacts on fauna associated with light, noise and vibration disturbance.

6.2.4 Assessment approach

The EIS will include a BDAR to assess potential impacts on biodiversity values in accordance with the Biodiversity Assessment Method 2020 (DPIE, 2020).

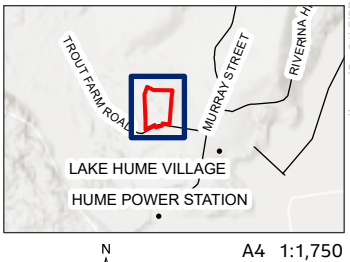
The BDAR will involve desktop review, vegetation mapping and targeted field surveys in accordance with relevant survey guidelines. The assessment will identify flora and fauna species, habitat, populations and ecological communities that occur or are likely to occur in the Project area and provide assessment of direct, indirect or prescribe impacts, as well as assessment of significance of the impacts. The BDAR will identify and recommend mitigation and offset measures to conserve and minimise impacts to biodiversity values, in consultation with DPE Biodiversity, Conservation and Science group.

LEGEND

- Project area
- Development area
- Riparian lands and watercourses
- Artificial pond on site
- Eucalypt habitat tree
- Planted vegetation

Plant community types

- PCT 266 (DNG)
- PCT 266 (Low)



N

A4 1:1,750

GDA 1994 MGA Zone 55

0 25 50

Metres

\\ausyd0vs01\GISPro\NSW_JS460700_HumeBESS\Apps\Scoping_Report\JS460700_Scoping_Report_v1.aprx | Date: 27/07/2023

Figure 6-1: Biodiversity constraints

Data Sources: NSW Department of Planning and Environment (2023); Imagery Sources: ESRI Online Imagery Services; JACOBS (2023)

6.3 Visual amenity

6.3.1 Existing environment

The Project area is on the outskirts of the Lake Hume village in a landscape that has a predominantly rural character. The Murray River and Lake Hume are nearby, and used for recreational boating, water skiing and fishing. The Project area consists of an existing dwelling surrounded by mature trees, on undulating topography. There are creek lines in the lower parts of the landscape to the north of the Project area, and southwest down to the Murray River.

Historically, the surrounding area has undergone extensive vegetation clearing associated with sheep grazing. There is water infrastructure associated with the nearby Lake Hume dam and spillway, including the Hume Weir Wastewater Treatment plant adjoining the eastern boundary of the Project area.

An existing power easement is aligned north-south across the landscape and along the eastern side of the Project area. Patches of roadside vegetation and hilly terrain provide some screening between the Project and surrounding areas.

6.3.2 Viewshed mapping

A preliminary visibility analysis was prepared by Iris using geographic information system (GIS) to simulate potential visibility from viewpoints and the landscape surrounding the Project area (refer to **Figure 6-2**). The analysis assumes a maximum BESS height of 3 m within the disturbance footprint associated with the BESS.

6.3.3 Potential impacts

Views to the Project will be somewhat contained to the south and the east by the surrounding landform, and vegetation. However, there may be some visibility from adjacent fields and distant locations to the west and north due to the elevated location of the site. There would be the potential for views to the trees on the site that may be removed, and also the project infrastructure including batteries, substation and any noise walls that are required.

There is the potential for views to the Project, where existing vegetation and local landform does not intervene, from several roads within 2.5 km of the Project, including:

- Views from the Riverina Highway to the northeast of the project
- Views from Trout Farm Road.

The Project is not likely to be visible from Lake Hume and the associated recreation areas due to intervening landform and vegetation.

Lake Hume Village is located on a small peninsular overlooking Lake Hume, is oriented towards the water. However, there are about seven dwellings on the western side of the village, about 300 metres from the Project site, on Murray Street that are oriented towards the Project site. There are unlikely to be views to the project from these dwellings due to the landform and existing vegetation around the Project area within gardens and road reserves.

It is likely that views of the Project area are likely to have the greatest potential for a visual impact, for motorists travelling south along the Riverina Highway towards Lake Hume (north of the Project area). The topography of the land is hilly and the road windy, and the view opens up after Hawdon Lane, offering expansive views across the countryside, towards the Project area. There are few residential dwellings in the vicinity of the Project area and only a small number have the potential for a view to the Project.

Construction of the Project may cause temporary visual impacts from these locations. During operation, the infrastructure associated with the Project may be visible, including electrical infrastructure and other permanent ancillary infrastructure.

Figure 6-2 Visual catchment of the Project

6.3.4 Assessment approach

The EIS will include a Landscape and Visual Impact Assessment (LVIA), which will include a detailed visual assessment would be prepared that would further analyse the potential visual impact of the Project. The LVIA would involve field verification of the visibility analysis and an assessment of representative viewpoints of the project. The LVIA would identify the potential visual impact from both private and public vantage points, and the potential for landscape character impacts during construction and operation phases of the Project.

Where moderate or higher visual impacts are identified, mitigation measures would be recommended for implementation to minimise potential visual or landscape character impacts. Visual impact mitigation measure can potentially include vegetation screening and a concept landscape plan would be prepared as part of the EIS if screening is required.

6.4 Aboriginal heritage

A preliminary assessment of Aboriginal heritage constraints for the Project area is summarised in this section and detailed in **Appendix B** (OzArk, 2023).

6.4.1 Existing environment

A search of the Aboriginal Heritage Information Management System (AHIMS) databased conducted on 26 April 2023 identified 57 previously recorded Aboriginal sites within a 10 x 10 km search area centred on the Project area. No AHIMS sites are located within the Project area. The types and frequencies of sites from the search is provided in **Table 6-2**.

Table 6-2. Site types and frequencies of AHIMS sites near the Project area

Site type	Number	% Frequency
Artefact site (quantity unspecified)	25	44
Culturally modified tree (carved or scarred)	12	21
Isolated find	11	19
Artefact & Potential archaeological deposit (PAD)	9	16
Total	57	100

The closest AHIMS site to the Project area is a PAD located to the south, recorded as part of the Aboriginal Cultural Heritage Assessment Report (ACHAR) for the approved Hume BESS development (Jacobs, 2020) (refer to **Figure 6-3**). The site was investigated by a test excavation program the following year (Jacobs, 2021) and the excavations recorded six quartz flakes.

Landforms within the Project area were moderately sloping in the south and in the north, the ridge landform has been disturbed by the construction of a large rural occupancy and garage with associated sheds and a tennis court. There is a transmission line easement east of the dwelling, parallel to the eastern boundary of the Project area. The easement land area is cleared and grazed and forms the apex of a broad ridge.

Ground surface visibility throughout the Project area was low (0-10%) due to large areas of thick ground cover. Several varieties of immature vegetation are also present surrounding the residence; however, two examples of mature native trees remain. Both were inspected for signs of cultural modification and no scarring or cultural modification was identified.

As the southern portion of the Project area is situated on moderately sloping landforms at distance from waterways, the potential for PAD to be recorded is greatly decreased. The Project area is broadly associated with historical disturbances, and the Project area has landform with a low archaeological potential as the existing ridge is localised (i.e. not part of a pathway) and separated from distant water by moderately steep slopes (i.e. not a good camping location).

The site inspection did not identify any Aboriginal objects, areas of PAD, or items of historic heritage value. All sections of the Project area were confirmed as having low surface and subsurface archaeological potential. The Project area is also not within an active native title claim or determination.

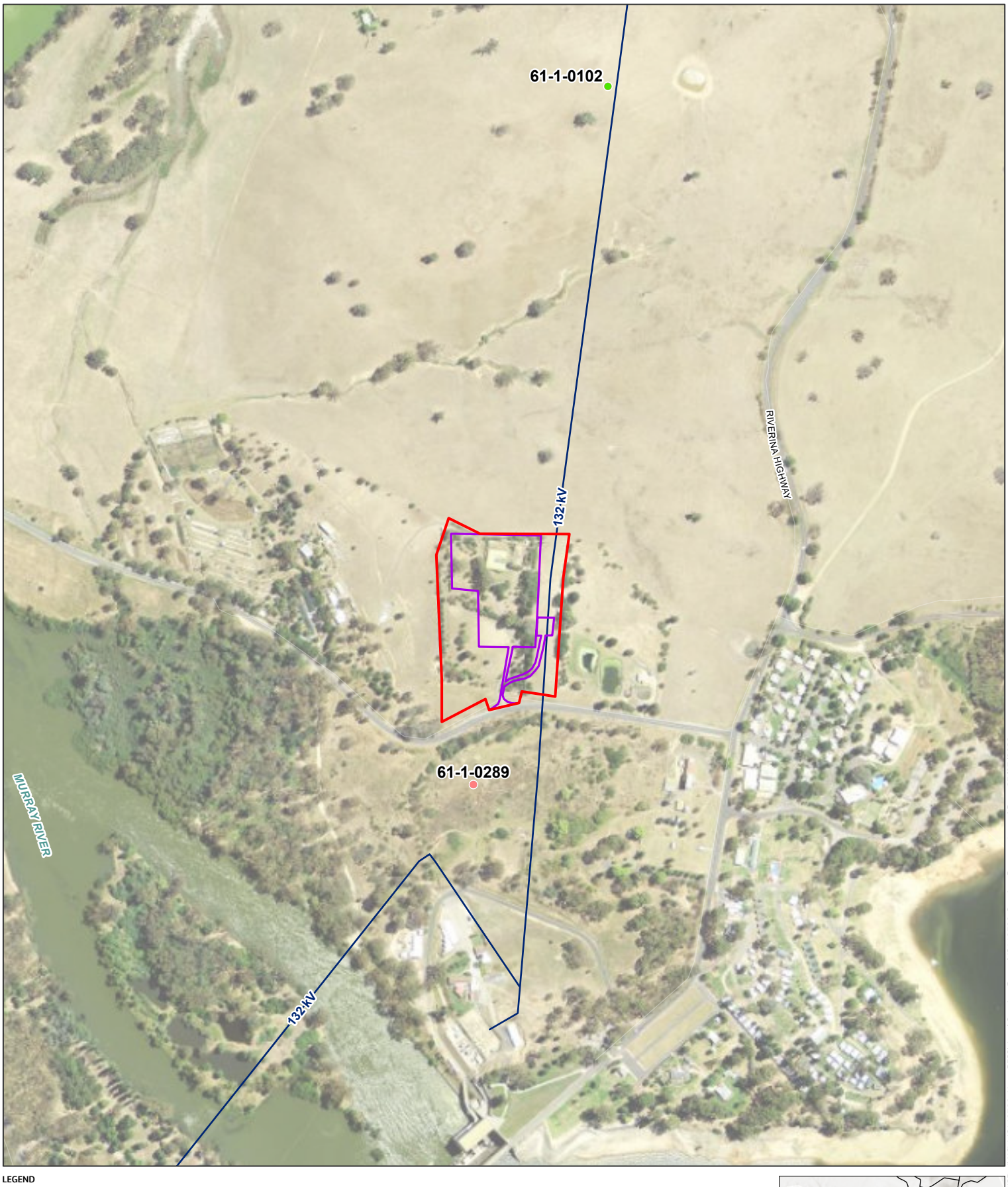


Figure 6-3: Aboriginal heritage constraints

Data Sources: NSW Department of Planning and Environment (2023); Imagery Sources: ESRI Online Imagery Services; JACOBS (2023)

6.4.2 Potential impacts

No AHIMS sites and PADs have been identified at the scoping stage and it is not expected that the Project would impact on any listed Aboriginal sites or items. The Project area consists of land identified as having low archaeological potential.

6.4.3 Assessment approach

While no AHIMS sites and PADs have been identified at the scoping stage, the presence of Aboriginal heritage values and significance will be assessed further in the EIS, which will include the following:

- An Aboriginal Cultural Heritage Assessment Report (ACHAR) will be prepared in accordance with the Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (OEH, 2011)
- The ACHAR will involve archaeological investigation that complies with the Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW (DECCW, 2010b)
- Aboriginal community consultation has commenced (refer to **Section 5.1**) and will continue to be carried out in accordance with the Aboriginal Consultation Requirements for Proponents 2010 (DECCW, 2010a).

6.5 Historical heritage

6.5.1 Existing environment

A search of the following heritage registers was undertaken on 20 May 2023:

- NSW State Heritage Register (SHR)
- State Heritage Inventory including s170 State Agency Heritage and Conservation Registers (s170 register)
- Albury LEP 2010
- Commonwealth Heritage List
- National Heritage List
- World Heritage List and
- Register of the National Estate.

There are no known heritage items within the Project area. Within the locality a number of heritage items are listed on the Water NSW s170 register and Register of the National Estate, listed heritage items in **Table 6-3** and shown on **Figure 6-4**. The closest heritage item to the Project area the Hume Dam Complex located about 220 m south.

Table 6-3 Historical heritage near the Project area

Item name	Register
Hume Dam and Pondage, Hume Weir	Register of the National Estate
Hume Dam Complex	WaterNSW s170 register
Hume Dam Cottage 1	WaterNSW s170 register
Hume Dam Cottage 4	WaterNSW s170 register
Hume Dam interpretive display including Crompton electric motor, Steam engine/generator set and air compressor	WaterNSW s170 register
Hume Dam moveable heritage	WaterNSW s170 register
Hume Dam Nissan Huts	WaterNSW s170 register
Hume Dam Storage, dam wall crest including structures, plaque, original winch machinery and wall embellishments	WaterNSW s170 register
Hume Dam Town Plan including streets, curbing, fences and street trees	WaterNSW s170 register

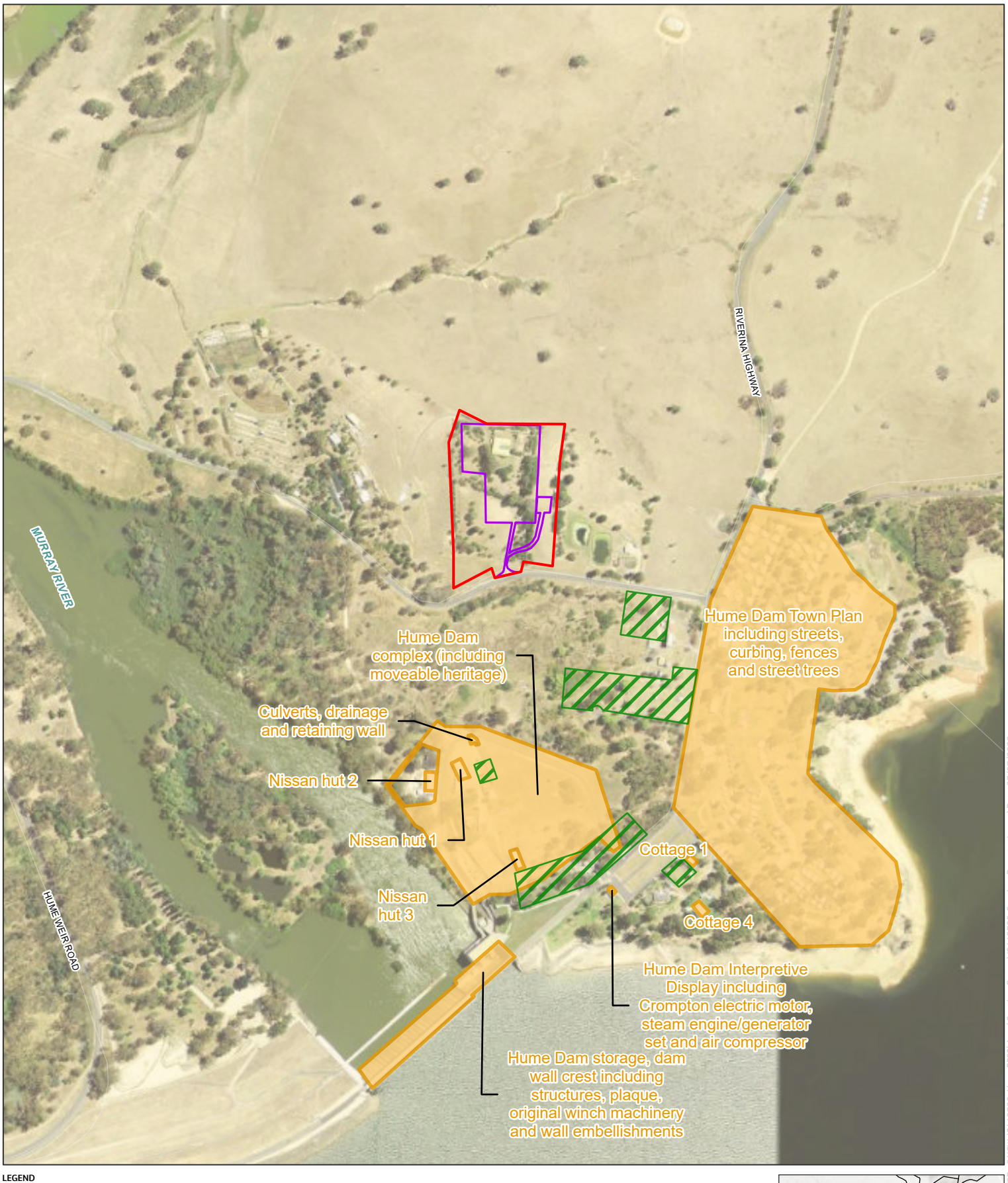


Figure 6-4: Historic heritage near the Project area

Data Sources: NSW Department of Planning and Environment (2023); Imagery Sources: ESRI Online Imagery Services; JACOBS (2023), Rural Fire Service (2023)

6.5.2 Potential impacts

The residence to be demolished within the Project area also has no identified heritage value.

The Project would not have any direct impacts to listed heritage items. Based on **Figure 6-2**, the Project may be in the visual catchment of the historical heritage to the south of the Project area.

Potential impacts on unlisted heritage items within the Project area will also be assessed further in the EIS.

6.5.3 Assessment approach

The EIS will include an assessment of historical heritage values, including potential for visual impacts to heritage items and identifying whether historical heritage items are likely to be within the Project area. Any recorded historical heritage items will be subject to a significance assessment and mitigation measures will be proposed to minimise potential impacts to any identified and recorded historical heritage items or areas.

6.6 Traffic and transport

6.6.1 Existing environment

The Project area is located along Trout Farm Road, with other roads in the vicinity being Murray Street and Riverina Highway, as well as Bonegilla Road which provides access to the Project area from Victoria. Primary access to the Project area will be via Trout Farm Road, which is a two-lane single carriageway with a posted speed limit of 80 km/h.

Bonegilla Road, Trout Farm Road and Murray Street/Riverina Highway is used for school bus route S909, which services Lake Hume Village and access to both NSW and Victorian schools in Albury-Wodonga. The bus service operates between 7-9am from Monday to Friday.

6.6.2 Potential impacts

An Oversize Overmass (OSOM) vehicle will be required to transport a substation transformer from the Port of Melbourne to the Project area. The OSOM vehicle will be the largest vehicle for the Project and other heavy vehicle transport for BESS infrastructure would use semi-trailers. Road upgrade would be required on Trout Farm Road for the access point to the Project area, to provide safe access for construction vehicles and equipment. Relevant road work approvals will be sought prior to any work commencing.

An internal access track would be constructed in the Project area to accommodate heavy vehicle access, and the development area would include staff parking and construction equipment laydown areas. Traffic impacts and management measures would be detailed in the EIS.

Peak heavy vehicle trips are expected to occur during the construction period, associated with the delivery of materials, plant and equipment. Deliveries of batteries and enclosures are anticipated to occur in batches. Traffic and transport impacts during operation of the Project are expected to be limited and indistinguishable from daily traffic variability. Decommissioning traffic would be similar in nature to construction but able to be limited to avoid significant impacts to intersection performance.

6.6.3 Assessment approach

The EIS will include a traffic and transport impact assessment to assess potential traffic, access, safety risks and impacts associated with the construction, operation and decommissioning of the Project. The assessment will involve assessing the capacity of key access roads, assessing the impacts of OSOM vehicles requirements and haulage, and assessing potential Project traffic impacts on road safety. Stakeholder consultation will be undertaken with Albury City Council and Transport for NSW to understand potential impacts on local and regional roads and potential impacts related to cumulative traffic impacts in the area related to multiple proposed developments.

6.7 Social and economic impacts

6.7.1 Existing environment

The Project is located in the Albury LGA, about 10 kilometres east of the township of Albury, and situated around 600 metres downstream of Hume Dam on the northern river bank. Based on the ABS Suburbs and Localities (SAL) geographic areas, the Project is located within the Lake Hume Village SAL. At the 2021 Census, Albury LGA had a population of 56,093 and Lake Hume Village SAL had a population of 59 (ABS, 2021a; 2021b). The Albury-Wodonga region consist of Albury LGA in NSW and Wodonga LGA in Victoria, which share a strategic partnership due to the proximity of the two LGAs.

Compared to projected annual population growth rate in NSW (0.95% between 2021 and 2041), the Albury LGA is projected to grow at a faster rate annually (1.59% between 2021 and 2041) (NSW Government, 2022a). The LGA has a median age of 39, with a higher proportion of people under 15 compared to NSW, as well as a higher proportion of people over 60 years of age compared to NSW (Id community, 2021).

The Albury LGA and the Albury-Wodonga Significant Urban Area (SUA) are both regions with health care and social assistance as top industries of employment in 2021 (about 8% of the labour force). The combined Gross Regional Product (GRP) for Albury and Wodonga is estimated at $8.3 billion (Remplan, 2023). Albury also has economic and transport links to Wagga Wagga, with both cities providing employment opportunities, housing, education and health services for the broader region (DPE, 2023b).

Lake Hume Village, the suburb in which the Project is located, is on the eastern boundary of the Albury LGA, on the edge of Lake Hume where the Hume Reservoir flows into the Murray River. The Lake Hume Village offers camping and holiday parks and other recreational opportunities. The region is a popular visitor destination as well as a large regional employment centre, offering food, art and cultural experiences as well as outdoor recreation.

6.7.1.1 Social locality

The social locality for the Project is developed from an analysis of the likely positive and negative impacts and the communities that could be affected by the impacts. The preliminary social locality is shown in **Figure 6-5** and includes the following geographic areas:

- Lake Hume Village SAL
- Albury-Wodonga Significant Urban Area (SUA)
- Transportation routes along Hume Highway, Riverina Highway, Trout Farm Road, which would likely be used more frequently in the local context, for the movement of people, materials and equipment during construction.

The social locality may extend beyond these areas as the Project is further developed during the EIS phase and may include additional places of residence of future construction and operational workforce and their primary dependents, and where construction materials may be sourced for the Project.

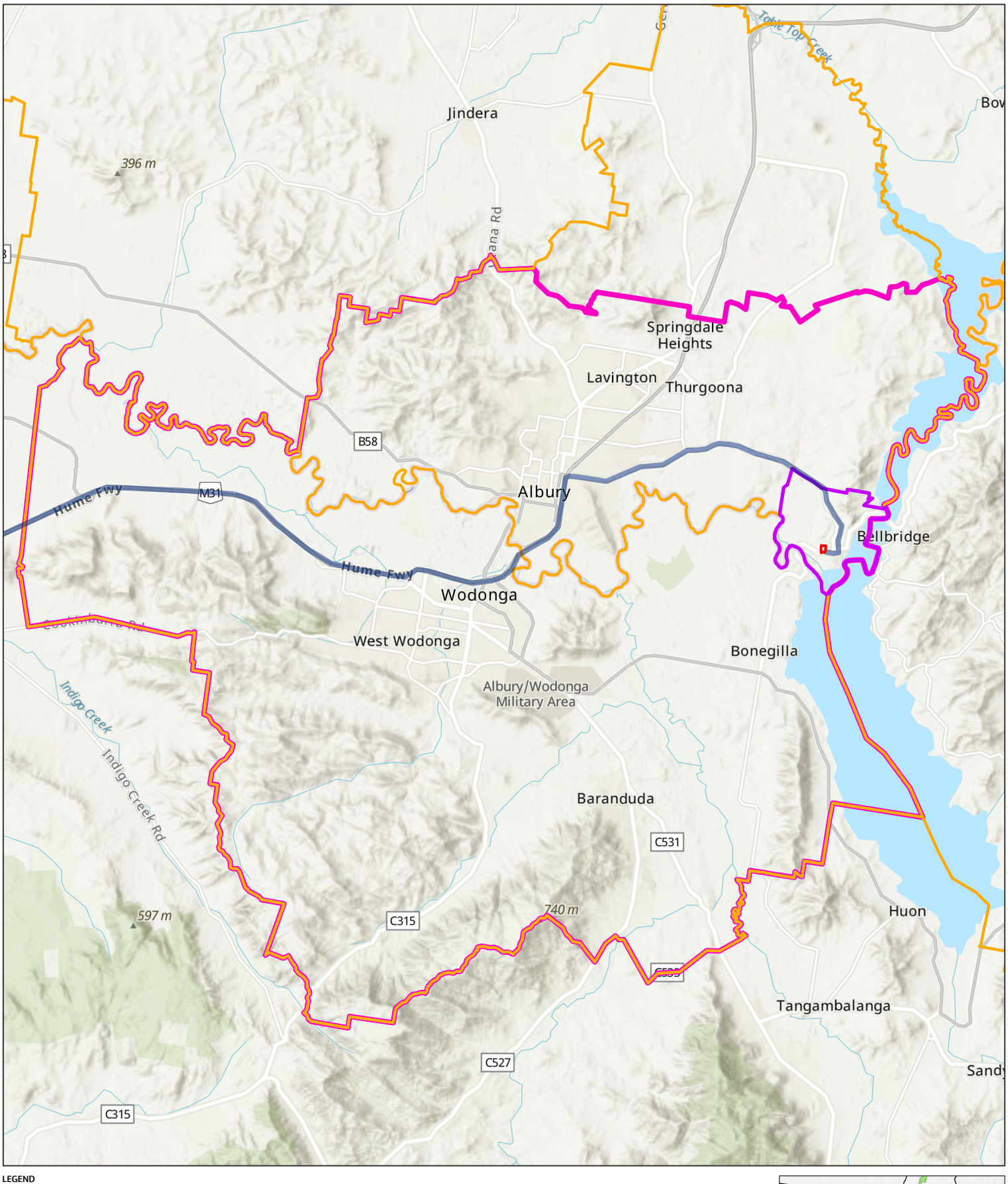


Figure 6-5: Social locality

Data Sources: NSW Department of Planning and Environment (2023); Imagery Sources: ESRI Online Imagery Services; JACOBS (2023), Australian Bureau of Statistics (2021)

6.7.2 Potential impacts

A Social Impact Assessment Scoping Worksheet has been developed for the Project in accordance with the Social Impact Assessment Guideline for State Significant Projects (DPIE, 2021b) to identify potential social and economic impacts and define the assessment approach for the EIS phase (refer to **Appendix C**). The social impact categories are defined in **Table 6-4**. Based on these categories, the Project would potentially generate both positive and negative social and economic effects on local and regional communities, as outlined in **Table 6-5**.

Table 6-4. Social impact categories

Category	Aspect
Livelihoods	People's capacity to sustain themselves, whether they experience personal breach or disadvantage, and the distributive equity of impacts and benefits.
Way of life	How people live, how they get around, how they work, how they play, and how they interact each day.
Access	How people access and use infrastructure, services and facilities, whether provided by a public, private or not-for-profit organisation.
Culture	Aboriginal and non-Aboriginal, including shared beliefs, customs, values and stories, and connections to country, land, waterways, places and buildings.
Surroundings	Ecosystem services such as shade, pollution control, and erosion control, public safety and security, access to and use of the natural and built environment, and aesthetic value and amenity.
Health and wellbeing	Physical and mental health, especially for people vulnerable to social exclusion or substantial change, psychological stress resulting from financial or other pressures, access to open space and effects on public health.
Community	Community composition, cohesion, character, how the community functions, and people's sense of place.
Decision-making systems	Whether people experience procedural fairness; can make informed decisions; have power to influence decisions; and can access complaint, remedy and grievance mechanisms.

Source: Social Impact Assessment Guidelines (DPIE, 2021b)

Table 6-5. Preliminary scoping of potential social and economic impacts

Category of impact	Potential impacts	Nature	Project phase
Livelihoods	▪ Increased demand for local businesses and services, including in trades, accommodation, hospitality and logistics	Positive	Construction and operation
	▪ Increased spending and investment locally can support economic opportunities and indirect employment	Positive	Construction and operation
	▪ Where available, use of local or regional labour and materials can support direct employment and skills development	Positive	Construction and operation
Access	▪ Temporary traffic disruption or diversions could change local community or visitors' access to services, employment, other needs such as tourism facilities	Negative	Construction
	▪ Increased demand for services and facilities, including local accommodation from the construction workforce, potentially affecting access to social infrastructure, accommodation or tourism facilities by local residents and visitors	Negative	Construction
Surroundings	▪ Potential impacts from increased traffic and over sized loads could include disruption to local roads, damage to roads and increase safety risks (perceived or actual) to road user or pedestrians	Negative	Construction
	▪ Changes to visual and acoustic amenity for nearby dwellings and local road users due to the presence of construction activities, traffic, equipment and machinery, and people, leading to loss of enjoyment or disruption	Negative	Construction

Category of impact	Potential impacts	Nature	Project phase
	▪ Changes to existing land use resulting in impacts to biodiversity, potential loss of habitat for fauna and native vegetation, leading to perceived impacts on quality of the natural/rural setting	Negative	Operation
Health and wellbeing	▪ Potential air quality and acoustic impacts could affect the nearest sensitive receivers' physical and mental health	Negative	Construction
	▪ Operational noise potentially affecting nearby sensitive receivers without implementation of noise management measures	Negative	Operation
	▪ Potential increase in community anxiety or stress in response to perceived inability for people to influence Project construction activities/design/decisions	Negative	Construction
	▪ Potential perceived risks to health and wellbeing due to bushfire or thermal runaway hazards associated with the Project	Negative	Operation
Decision making systems	▪ Perceived lack of ability for community or stakeholders to make informed decisions, or inability to access enquiry and complaint processes, leading to frustration or a sense of lack of control for some individuals	Negative	Construction and operation

6.7.3 Assessment approach

A Socio-economic Impact Assessment would be prepared for the EIS to assess potential social and economic impacts and benefits and propose mitigation measures to address the impacts or enhance the benefits. Both beneficial and adverse impacts could occur for the local community and regional area around the Project during construction and operation stages. In general, the Project would contribute to employment during the construction phase, promote economic opportunities in the long-term and would contribute to an overall lowering of electricity prices in the NEM for consumers and businesses in conjunction with renewable generation investment.

The Socio-economic Impact Assessment will involve stakeholder and community consultation, and document the outcomes of the consultation, implementation of the CSEP, and the findings of database searches and literature reviews where relevant. The assessment will include:

- Further validation of the social locality and socio-economic baseline for the social locality
- Assessment of potential impacts (both positive and negative) on local and regional communities associated with the construction and operation of the Project, including consideration of any increase in demand for accommodation and community infrastructure services
- Evaluation of the level of significance of identified impacts and identifying measures to manage potential socio-economic impacts and maximise benefits.

6.8 Land

6.8.1 Existing environment

Based on the Australian Soil Classification system, the soils across the Project area are entirely mapped as rudosols. Rudosols generally have low agricultural potential and the Project area is mapped as Land Soil Capability Class 6, indicating severe limitations for a wide range of land uses, generally suitable only for grazing.

The soil landscape across the Project area is Wagra (8326wa), consisting of rolling hills to low hills on Silurian granite, with landform elements such as broad crests and ridges, areas of uncleared land and patches of extensively cleared red stringybark dry sclerophyll forest (*Eucalyptus macrorhyncha)* (Murphy & Lawrie, 1998). The limitations for the soil landscape include moderate to high erosion hazard, poor moisture availability and low fertility. The remaining forested areas is recommended to be kept or remain undeveloped due to erodible soils and remnant vegetation in the landscape.

Corresponding to the general low quality soil landscape across the Project area and surrounds, there are no mapped Biophysical Strategic Agricultural Land (BSAL) in the vicinity. In addition the Project area is not mapped as any flood prone land under the Albury LEP.

In terms of potential contamination risks for the Project, there are no mapped acid sulfate soils in the Project area and no registered contaminated land records in the suburb of Lake Hume Village. A search of the POEO Act public register on 25 May 2023 identified that the Hume Weir Village Wastewater Treatment Plant is a listed on the register for the activity of "Sewage treatment processing by small plants" (Licence no. 437). The treatment plant is directly adjacent to the Project area eastern boundary, about 20 m to the east.

There is a Crown Land reserve at the southern portion of the Project area, being Lot 98 DP 753356. There are also Crown reserves further to the south-west and south-east of the Project area, on the southern side of Trout Farm Road (refer to **Figure 6-6**). The Crown Land mapped directly south of Project area are identified as travelling stock reserves with low/unassessed conservation values.

There are no exploration and mining titles or applications within or near the Project area, and no mining subsidence districts are mapped near the Project area.

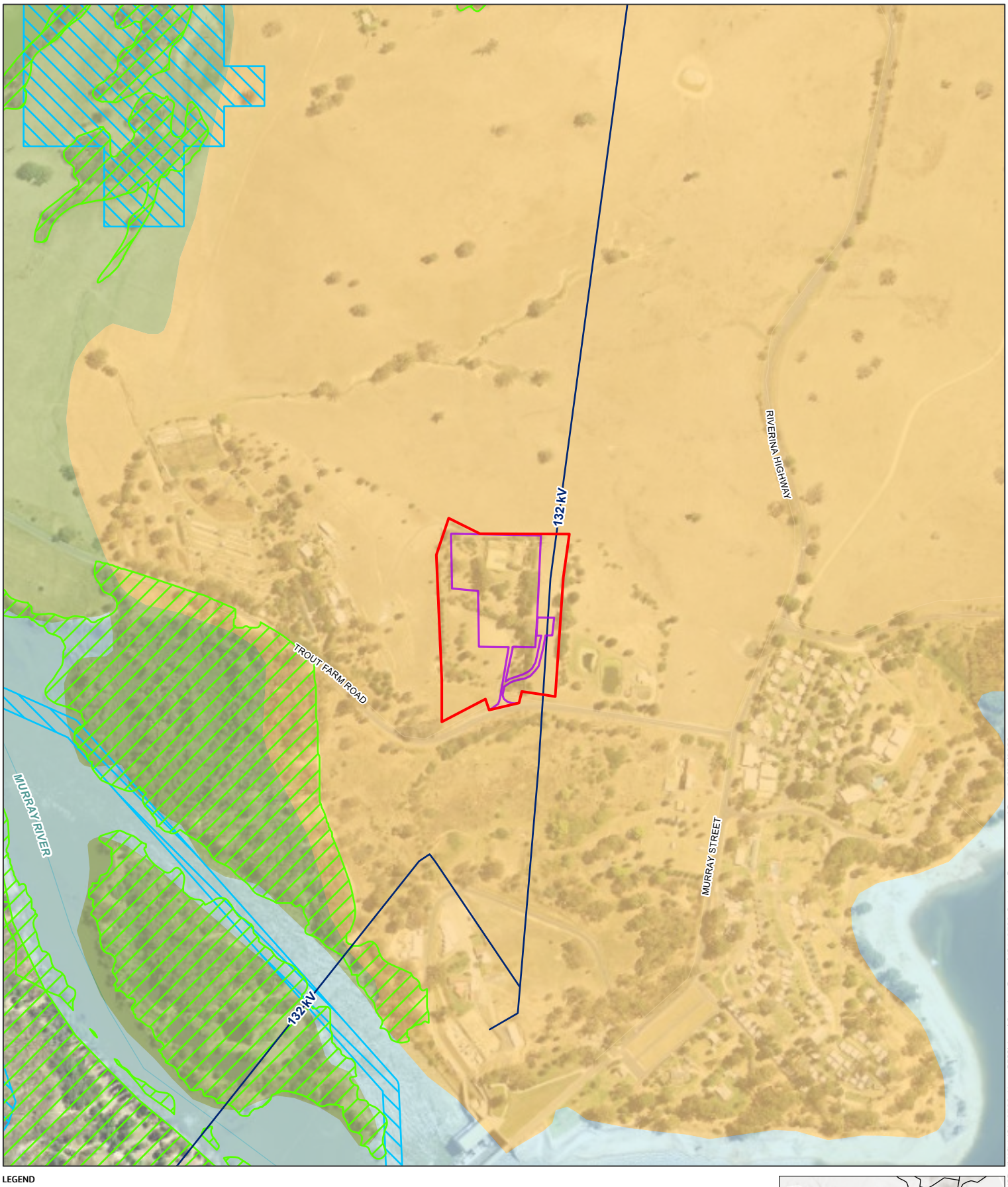
6.8.2 Potential impacts

The Project is expected to have minimal existing site contamination and acid sulfate soil risks. Potential impacts to soils during construction and decommissioning phases of the Project could include soils erosion and sediment transfer, as well as physical change to soil quality locally. Potential contamination impacts during construction, operation and decommission of the Project could result from accidental leaks or spills of fuels, demolition of dwelling and structures such as sheds (dependant on age and materials), chemicals or wastewater, and mobilisation of pre-existing contaminants.

6.8.3 Assessment approach

The Project has potential to impact on existing soils and landform during construction and decommissioning phases, including introducing soil erosion risks, ground stability and water quality risks from excavation or disturbance activities such as road upgrades.

The EIS will include an assessment of soils, erosion risk as well as potential land contamination impacts related to the construction and operation of the Project. A qualitative assessment of land use conflict will also be carried out in accordance with the Land Use Conflict Risk Assessment Guide (DPI, 2011). The assessment will also outline mitigation measures proposed to avoid or minimise potential impacts to land resources.



LEGEND

- Project area
- Development area

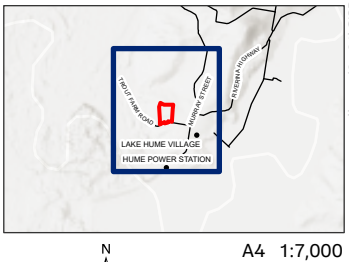
Groundwater dependent ecosystems

- Terrestrial
- Aquatic

Land and soil capability mapping of NSW

- 3 - Moderate limitations
- 6 - Very severe limitations
- Water

- Electricity transmission line



N

A4 1:7,000

GDA 1994 MGA Zone 55

0 100 200

Metres

\\ausydvs01\GISProj\NSW_JS460700_HumeBESS\Apps\Scoping_Report\JS460700_Scoping_Report_v1.aprx | Date: 27/07/2023

Figure 6-6: Land resources

Data Sources: NSW Department of Planning and Environment (2023); Imagery Sources: ESRI Online Imagery Services; JACOBS (2023), Bureau of Meteorology (2023)

6.9 Water

6.9.1 Existing environment

The Project is located within the Murray-Riverina Catchment, where the regulated portion of the Murray River is between the Hume Dam and the downstream Murrumbidgee River junction. The Murray River is a major arm of the Murray-Darling Basin and the river forms the NSW-Victorian border for 1,880 km.

There are no mapped waterways in the Project area. There is a system of Strahler first- and second- order streams about 300 m north of the Project area, flowing into the Murray River west of the Project area. The Murray River is the closest major waterway to the Project area, flowing west from the Hume Dam, and at the closest distance is 330 m south-west of the Project area southern boundary.

There is an artificial pond located within the Project area west of the existing dwelling, and there are also ponds associated with the Hume Weir Village Wastewater Treatment Plant located 36 m east of the Project area. The former Hume Weir Trout Farm is located about 330 m west of the Project area, being previously used for recreational and aquaculture purposes. The fish farm is not operational and existing ponding areas are dry.

There are no groundwater bores mapped within or in the vicinity of the Project area. The mapped GDEs near the Project area are discussed in **Section 6.2.1**.

6.9.2 Potential impacts

The Project would require a water supply during the construction, operational and decommissioning phases which would likely be sourced from a private commercial supplier and transported to the Project area in water trucks.

During construction, water would primarily be used for the establishment of the BESS infrastructure and dust suppression. Water requirement during operation and decommissioning phases would be reduced compared to the construction period. Potential impacts to surface water quality may result from pollution of runoff with sediments or leaked fuels and discharge of water from site activities if not managed appropriately. The Project is expected to have negligible impacts on groundwater or flooding behaviour in the Project area, and the Project is also not expected to be impacted by any flood flows.

As the Project is located downstream from the Hume Dam and Lake Hume, it would not impact on the water quality or hydrology of the lake and would not directly impact on the Murray River provided the appropriate water quality mitigation and management measures are in place during construction, operation and decommissioning of the Project.

6.9.3 Assessment approach

The siting and design of the Project will require consideration of potential surface water quality, run off and sediment controls associated with the Project, with a need to avoid potential impacts to any downstream receiving environments. It is not anticipated that any watercourse crossing or groundwater extraction will be required for the Project, however potential impacts to water quality, potential increased demand for water and discharge of any wastewater will require further assessment.

The EIS will include consideration of potential surface water, groundwater and flooding impacts associated with the construction, operation and decommissioning of the Project. The assessment will outline mitigation measures proposed to avoid or minimise potential impacts to water resources.

6.10 Hazards and risks

6.10.1 Existing environment

The characteristics of the existing site include:

- The Project area contains mapped bush fire prone land
- The existing transmission lines across the Project area at the eastern boundary are current sources of electromagnetic fields (EMF) and present exposure to electrical voltage
- There are no historical sources of contamination and no current hazardous materials in the Project area.

6.10.2 Potential impacts

Potential hazards and risks associated with the Project include bush fire risk, battery storage with potentially hazardous substances, and exposure to EMF.

There is a risk that construction activities, plant, equipment and infrastructure could be impacted by bushfire as well as a risk that construction activities could initiate bushfires. During operation, the spread of bushfire near the Project area could also impact on BESS infrastructure and transmission lines. Ongoing vegetation management and the implementation of an Asset Protection Zone (APZ) would be maintained to minimise bushfire risk.

The Project would introduce new transmission connection infrastructure, substation and BESS infrastructure which would introduce additional EMF exposure within the Project area. The Project EMF risk and exposure levels are considered minimal, however further assessment of potential impacts on sensitive receivers will be carried out as part of the EIS.

6.10.3 Assessment approach

6.10.3.1 Bush fire

The EIS will include a bush fire assessment to assess bush fire hazard and risks and the potential impacts of the Project related to such risks. The bush fire risks will be identified in accordance with the requirements of Planning for Bush Fire Protection 2019 (NSW RFS, 2019) and prioritise the identification of necessary asset protection zones.

It is expected that the operation of the Project would not introduce new bush fire risks to the Project area on the basis that fire prevention systems will be built into the design of the BESS and appropriate APZs will be set up. Key stakeholders including NSW State Emergency Service and NSW RFS will be consulted during the EIS preparation in relation to battery technology and associated hazards and risks during construction and operation.

6.10.3.2 Battery storage and EMF

The EIS will include a Preliminary Hazard Analysis (PHA) to assess potential hazards and events related to the construction and operation of the Project, including consideration of exposure to EMF, hazardous materials release and battery thermal runaway risks. The PHA will be prepared in accordance with the Hazardous Industry Planning Advisory Paper (HIPAP) No. 6 Guideline for Hazard Analysis and the Multi-Level Risk Assessment (Department of Planning 2011a; 2011b). Assessment of EMF will also be in line with the International Commission on Non-Ionizing Radiation Protection (ICNIRP) Guidelines for limiting exposure to Time-varying Electric, Magnetic and Electromagnetic Fields (ICNIRP, 2010).

6.11 Air quality

6.11.1 Existing environment

The Project area is in a semi-rural area with agricultural, residential, energy infrastructure land uses in the local context. Existing sources of air emissions are limited, mainly from vehicle or machinery exhaust and dust.

6.11.2 Potential impacts

During construction and decommissioning, local air quality within the Project area may be temporarily affected by particulate (dust) emissions during activities such as vegetation clearance, earthworks, access track construction, road upgrade, and traffic movement along roads/tracks. There is also the potential for localised gaseous emissions generated by the combustion of fuel in construction plant, machinery and emissions.

Air quality impacts from construction are expected to be minor and short term due to the relatively small scale of construction works required and distance from sensitive receivers. During operation, the Project is anticipated to have a negligible impact on local air quality.

6.11.3 Assessment approach

The Project would not generate significant air quality impacts during construction, operation or decommissioning and emissions impacts are expected to be localised. A detailed air quality assessment is not expected to be required as part of the EIS however mitigation measures will be proposed to avoid, minimise or manage air quality impacts.

6.12 Waste

6.12.1 Potential impacts

The Project would produce several waste streams during the construction and decommissioning phases. Minor quantities of waste would also continue to be generated during the operation of the Project. The waste expected to be generated during the Project construction include:

- Sewage
- Domestic rubbish
- Excavated material and soils
- Plastic or paper packaging material
- Construction debris
- Green waste.

Waste management on site would be under specific waste management plans that will be developed prior to construction of the Project. End of life recycling and reuse opportunities will also be investigated and documented prior to construction of the Project and any management plans and rehabilitation plans will be updated throughout the construction, operation and decommissioning phases of the Project.

6.12.2 Assessment approach

The EIS will include an assessment of waste and resource impacts to identify waste streams and classify potential waste expected to be generated, identify available waste management facilities near the Project and recommend mitigation measures in accordance with the Waste Avoidance and Resource Recovery Strategy (NSW EPA, 2018).

6.13 Cumulative impacts

Cumulative impacts are a result of incremental, sustained and combined effects of human action and natural variations over time and can be both positive and negative. Based on a review of NSW DPE Major Projects website and other searches of relevant development near the Project, at the time of preparing this Scoping Report there are unlikely to be any large-scale development in the vicinity of the Project which can lead to cumulative impacts. Further assessment of potential cumulative impacts, including review of proposed development will be carried out as part of the EIS, in accordance with the Cumulative Impact Assessment Guidelines for Significant Projects (DPIE, 2021a).

As discussed in **Section 1.2**, the existing approval for the approved Hume BESS development) (SSD-10460) would be voluntarily surrendered under Section 4.63 of the EP&A Act, should the proposed Project be approved at the new location. As only one BESS would end up being developed, the Project would not result in cumulative impacts with the previously approved development.

7. References

ABS (2021). *2021 Census All persons QuickStats,* Australian Bureau of Statistics.

AEMO (2022). *2022 Integrated System Plan*, Australian Energy Market Operator.

ANZECC/ARMCANZ (2018). *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*, Australian and New Zealand Environment and Conservation Council

Austroads (2017). *Guide to Traffic Management – Part 3 Traffic Studies and Analysis*, Austroads.

BOM (2023). *Groundwater Dependent Ecosystems Atlas,* Bureau of Meteorology, accessed 10 May 2023 from http://www.bom.gov.au/water/groundwater/gde/

Commonwealth of Australia (2013). *Matters of National Environmental Significance Significant impact guidelines 1.1*, Commonwealth of Australia.

DCCEEW (2023), *EPBC Act Protected Matters Search Tool*, Department of Climate Change, Energy, the Environment and Water, accessed 10 May 2023 from https://pmst.awe.gov.au/

DEC (2004). *Approved Methods for the Sampling and Analysis of Water Pollutants in NSW*, Department of Environment and Conservation.

DEC (2006a). *Assessing Vibration: A Technical Guideline*, Department of Environment and Conservation.

DEC (2006b). *Using the ANZECC Guidelines and Water Quality Objectives in NSW*, Department of Environment and Conservation.

DECC (2008). *Managing Urban Stormwater: Soils and Construction Volume 2*, Department of Environment and Climate Change.

DECC (2009). *Interim Construction Noise Guidelines*, Department of Environment and Climate Change.

DECCW (2010a). *The Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010*, Department of Environment, Climate Change and Water.

DECCW (2010b). *The Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW*, Department of Environment, Climate Change and Water.

DECCW (2011). *NSW Road Noise Policy*, Department of Environment, Climate Change and Water.

Department of Planning (2008). *Acid Sulfate Soils Assessment Guidelines*, Department of Planning.

Department of Planning (2011a). *Applying SEPP 33 – Hazardous and Offensive Development Application Guidelines*, Department of Planning.

DUAP and NSW EPA (1998). *Managing Land Contamination: Planning Guidelines SEPP 55 – Remediation of Land*, Department of Urban Affairs.

DPE (2011a). *Hazardous Industry Planning Advisory Paper No. 6 Guidelines of Hazard Analysis*, Department of Planning and Environment.

DPE (2011b). *Hazardous Industry Planning Advisory Paper No. 10 Land Use Safety Planning*, Department of Planning and Environment.

DPE (2023a). *Biodiversity Values Map and Threshold Tool*, Department of Planning and Environment, accessed 10 May 2023 from https://www.lmbc.nsw.gov.au/Maps/index.html?viewer=BOSETMap

DPE (2023b). Riverina Murray Regional Plan 2041, Department of Planning and Environment, accessed 10 May 2023 from https://www.planning.nsw.gov.au/sites/default/files/2023-03/riverina-murray-regional-plan-2041.pdf

DPE (2022d). *Large-Scale Solar Energy Guideline*, Department of Planning and Environment.

DPI (2011). *Land Use Conflict Risk Assessment Guide,* Department of Primary Industries.

DPI (2021). *Spatial Dataset Profile Southern Spotted Gudgeon*, Department of Primary Industries, accessed 10 May 2023 from https://www.dpi.nsw.gov.au/__data/assets/pdf_file/0009/670347/Spatial-Dataset-Profile-Southern-Purple-Spotted-Gudgeon.pdf

DPI (2023). *Fisheries Spatial Data Portal*, Department of Primary Industries, accessed 10 May 2023 from https://webmap.industry.nsw.gov.au/Html5Viewer/index.html?viewer=Fisheries_Data_Portal

DPIE (2020). *The Biodiversity Assessment Method 2020*, Department of Planning, Industry and Environment.

DPIE (2021a). *Cumulative Impact Assessment Guidelines for State Significant Projects*, Department of Planning, Industry and Environment.

DPIE (2021b). *Social Impact Assessment Guideline for State Significant Projects*, Department of Planning, Industry and Environment.

DPIE (2021c). *State Significant Development Guidelines – Preparing a Scoping Report*, Department of Planning, Industry and Environment.

DPIE (2021d). *Undertaking Engagement Guidelines for State Significant Projects*, Department of Planning, Industry and Environment.

Energy Networks Australia (2016). *Electromagnetic Fields Management Handbook*, Energy Networks Australia.

ICNIRP (2010). *Guidelines for Limiting Exposure to Time-varying Electric, Magnetic and Electromagnetic Fields*, International Commission on Non-Ionizing Radiation Protection.

Id community (2021). *Albury City Community Profile*, Id community, accessed 10 May 2023 from https://profile.id.com.au/albury/age-sex-pyramid?BMID=40

Landcom (2004). *Managing Urban Stormwater: Soils and Construction Volume 1*, Landcom.

Murphy, BW & Lawrie, JW (1998). *Wagra – Soil Landscapes of the Dubbo 1:250 000 Sheet*, Department of Land and Water Conservation.

NEPC (1998). *National Environment Protection (Ambient Air Quality) Measure*, National Environment Protection Council.

NEPC (2013). *National Environment Protection (Assessment of Site Contamination) Measure*, National Environment Protection Council.

NSW EPA (2014a). *Waste Avoidance and Resource Recovery Strategy 2014-21*, NSW Environment Protection Authority.

NSW EPA (2014b). *Waste Classification Guidelines Part 1: Classifying Waste*, NSW Environment Protection Authority.

NSW EPA (2015). *Guidelines on the Duty to Report Contamination Under the Contaminated Land Management Act 1997*, NSW Environment Protection Authority.

NSW EPA (2016). *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales*, NSW Environment Protection Authority.

NSW EPA (2017). *NSW Noise Policy for Industry*, NSW Environment Protection Authority.

NSW EPA (2020). *Guidelines for Consultants Reporting on Contaminated Land: Contaminated Land Guidelines*, NSW Environment Protection Authority.

NSW EPA (2021). *Draft Construction Noise Guideline*, NSW Environment Protection Authority.

NSW Heritage Branch (2009). *Assessing Significance for Historical Archaeological Sites and 'Relics'.* NSW Heritage Branch of the Department of Planning.

NSW Heritage Office and Department of Urban Affairs and Planning (1996). *NSW Heritage Manual*, NSW Heritage Office.

NSW Government (2019). *NSW Electricity Strategy,* NSW Government.

NSW Government (2020). *NSW Net Zero Plan Stage 1: 2020-2030,* Department of Planning, Industry and Environment.

NSW Government (2022a). *Population Projections*, NSW Government, accessed 10 May 2023 from https://www.planning.nsw.gov.au/research-and-demography/population-projections

NSW Government (2022b). *Practice Note – Engaging with Aboriginal Communities,* NSW Government.

NSW RFS (2015). *NSW Rural Fire Service Guideline for Bushfire Prone Land Mapping,* NSW Rural Fire Service.

NSW RFS (2019). *Planning for Bush Fire Protection 2019,* NSW Rural Fire Service.

OEH (2011). *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW,* Office of Environment and Heritage.

OzArk (2023). *Site reconnaissance memorandum Hume BESS*, OzArk

Remplan (2023). *Albury City Economy, Jobs and Business Insights*, accessed 10 May 2023 from https://app.remplan.com.au/albury/economy/industries/gross-regional-product?state=DGPzsn!d42WFB5qosDqQ1wIoDqQjfLugSvZ2T1S8S4hnS3a5

RTA (2002). *Guide to Traffic Generating Developments Version 2.2*, Roads and Traffic Authority.

TfNSW (2012). *Construction Noise Strategy*, Transport for NSW.

Appendix A. Scoping summary table

Level of assessment	Matter	Cumulative Impact Assessment	Engagement	Relevant government plans, policies and guidelines	Scoping Report reference
Detailed	Noise and vibration	No	General	▪ Draft Construction Noise Guideline (NSW EPA, 2021) at https://www.epa.nsw.gov.au/-/media/epa/corporate-site/resources/noise/20p2281-draft-construction-noise-guideline.pdf?la=en&hash=08B7AFCA1EABA290F78D720722E14F1F239FE6F8 ▪ Construction Noise Strategy (Transport for NSW, 2012) ▪ NSW Noise Policy for Industry (NSW EPA, 2017) ▪ Assessing Vibration: A Technical Guideline (Department of Environment and Conservation, 2006) ▪ German Standard DIN 4150-3: Structural Vibration – Effects of Vibration on Structures ▪ NSW Road Noise Policy (DECCW, 2011) ▪ Interim Construction Noise Guidelines (DECC, 2009) ▪ Environmental Noise Management Assessing Vibration: A Technical Guideline (Department of Environment and Conservation, 2006)	**Section 6.1**
Standard	Biodiversity	No	General	▪ Commonwealth EPBC 1.1 Significant Impact Guidelines – Matters of National Environmental Significance ▪ Commonwealth Department of the Environment – Nationally Threatened Ecological Communities and Threatened Species Guidelines (various) ▪ Threatened Species Survey and Assessment Guidelines at http://www.environment.nsw.gov.au/threatenedspecies/surveyassessmentgdlns.htm ▪ Biodiversity Assessment Method (Department of Planning, Industry and Environment, 2020)	**Section 6.2**
Standard	Visual amenity	No	General	▪ Large-Scale Solar Energy Guideline (DPE, 2022)	**Section 6.3**
Standard	Aboriginal heritage	No	Specific	▪ Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW (Department of Environment, Climate Change and Water, 2011) ▪ Aboriginal Cultural Heritage Consultation requirements for proponents (Department of Environment, Climate Change and Water, 2010) ▪ Code of practice for archaeological investigation of Aboriginal objects in NSW (Department of Environment, Climate Change and Water, 2010) ▪ Practice Note – Engaging with Aboriginal Communities (NSW Government, 2022b).	**Section 6.4**
Standard	Historical heritage	No	General	▪ NSW Heritage Manual (NSW Heritage Office and Department of Urban Affairs and Planning, 1996) ▪ Assessing Heritage Significance (NSW Heritage Office, 2001) ▪ Statement of Heritage Impact (NSW Heritage Office, 2002) ▪ Criteria for the assessment of excavation directors (NSW Heritage Council, 2011) ▪ Assessing significance for historical archaeological sites and relics (NSW Heritage Branch, 2009).	**Section 6.5**

Level of assessment	Matter	Cumulative Impact Assessment	Engagement	Relevant government plans, policies and guidelines	Scoping Report reference
Standard	Traffic and transport	No	General	▪ Guide to Traffic Management – Part 3 Traffic Studies and Analysis (Austroads, 2017) ▪ Guide to Traffic Generating Developments Version 2.2 (Roads and Traffic Authority, 2002).	**Section 6.6**
Standard	Social and economic impacts	No	Specific	▪ Social Impact Assessment Guidelines for State Significant Projects (DPIE, 2021b) ▪ Community Consultative Committee Guidelines for State Significant Projects (NSW Government, 2019) ▪ Undertaking Engagement Guidelines for State Significant Projects (DPIE, 2021d).	**Section 6.7**
Standard	Land	No	General	▪ Acid Sulfate 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) ▪ National Environment Protection (Assessment of Site Contamination) Measure (National Environment Protection Council, 2013) ▪ Guidelines for Consultants reporting on contaminated Land: Contaminated land guidelines (NSW EPA, 2020) ▪ Guidelines on the duty to Report Contamination under the Contaminated Land Management Act 1997 (NSW EPA, 2015).	**Section 6.8**
Standard	Water	No	General	▪ Managing Urban Stormwater: Soils and Construction Volume 1 (Landcom, 2004) and 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 Conservation, 2004) ▪ Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC/ARMCANZ, 2018) ▪ Using the ANZECC Guidelines and Water Quality Objectives in NSW (Department of Environment and Conservation, 2006b).	**Section 6.9**
Standard	Hazards and risks	No	General	▪ Electromagnetic Fields Management Handbook (Energy Networks Australia, 2016) ▪ Guidelines for limiting exposure to Time-varying Electric, magnetic and Electromagnetic Fields (ICNIRP, 2010) ▪ Applying SEPP 33 – Hazardous and Offensive Development Application Guidelines (Department of Planning, 2011a) ▪ Assessment Guideline: Multi-Level Risk Assessment (Department of Planning and Infrastructure, 2011) ▪ Hazardous Industry Planning Advisory Paper No. 4 Risk Criteria for Land Use Safety Planning (DPE, 2011) ▪ Hazardous Industry Planning Advisory Paper No. 6 Guidelines of Hazard Analysis (DPE, 2011) ▪ Hazardous Industry Planning Advisory Paper No. 10 Land Use Safety Planning (DPE, 2011) ▪ Planning for Bush Fire Protection 2019 (NSW RFS, 2019) ▪ Australian Standard 3959-2018 Construction of Buildings in Bush fire Prone Areas ▪ NSW Rural Fire Service Guideline for Bush fire Prone Land Mapping (NSW RFS, 2015).	**Section 6.10**

Level of assessment	Matter	Cumulative Impact Assessment	Engagement	Relevant government plans, policies and guidelines	Scoping Report reference
Standard	Air quality	No	General	▪ National Environment Protection (Ambient Air Quality) Measure (National Environment Protection Council, 1998) ▪ Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales (NSW EPA, 2016)	**Section 6.11**
Standard	Waste	No	General	▪ Waste Classification Guidelines Part 1: Classifying Waste (NSW Environment Protection Authority, 2014) ▪ NSW Waste Avoidance and Resource Recovery Strategy 2014-21 (NSW EPA, 2014).	**Section 6.12**
Standard	Cumulative	Yes	General	▪ Cumulative Impact Assessment Guidelines for State Significant Projects (DPIE, 2021a).	**Section 6.13**

Appendix B. Aboriginal cultural heritage site reconnaissance memorandum

OzArk Environment & Heritage ABN 59 104 582 354

Dubbo
Queanbeyan
Newcastle

T: 02 6882 0118
enquiry@ozarkehm.com.au
www.ozarkehm.com.au

145 Wingewarra St
PO Box 2069
DUBBO NSW 2830

12 May 2023

SITE RECONNAISSANCE MEMORANDUM
HUME BESS

OzArk Environment & Heritage (OzArk) have been engaged by Jacobs (the client) on behalf of ARIF Hume BESS Holdings Trust (the proponent) to conduct a standalone heritage site inspection at the proposed location for the Hume Battery Energy Storage System (BESS, the project). The project is located within the Albury City Council Local Government Area.

The following memorandum provides a summary of the site inspection undertaken to identify areas of potential archaeological significance within the project area. The results of the site inspection will inform the scoping report and early design works for the project.

1 BACKGROUND

The project is located on Trout Farm Road approximately 11 kilometres (km) east of Albury in New South Wales and 350 metres (m) west of the village of Lake Hume.

An Environmental Impact Statement (EIS) was approved by the Department of Planning and Environment in 2020, however, the location and size of the project has now changed. Given the new location of the project, a new project approval will most likely be required. The project would be assessed as a State Significant Development (SSD).

The project comprises of an approximate 55-megawatt/110 megawatt/hour standalone BESS, an associated substation, and grid interconnection infrastructure to connect into Transgrid's existing 132 kilovolt transmission network.

A preliminary desktop search of the Aboriginal Heritage Information Management System (AHIMS) on 26 April 2023 was undertaken over a 10 x 10 km search area (GDA zone 55 Eastings 497950–507950 Northings 6000000–6010000). The search returned 57 previously recorded Aboriginal sites within the search area; however, none are located within the study area.

The types and frequencies of sites located by the search area provided in **Table 1-1** while the location of sites near the study area are shown on Figure 1-1.

The closest site to the study area (AHIMS #61-1-0289) is located to the south of the study area associated with an area of potential archaeological deposit (PAD) recorded by Jacobs (2020). The site was investigated by a test excavation program the following year (Jacobs 2021) and the excavations recorded six quartz flakes. The PAD was recorded on a near-level landform on the crest of a ridge situated in proximity to the Murray River (**Figure 1-2**).

Table 1-1: Site types and frequencies of AHIMS sites near the study area.

Site Type	Number	% Frequency
Artefact site (quantity unspecified)	25	44
Modified tree (carved or scarred)	12	21
Isolated find	11	19
Artefact & Potential archaeological deposit (PAD)	9	16
Total	**57**	**100**

Figure 1-1: Previously recorded sites in relation to the new study area.

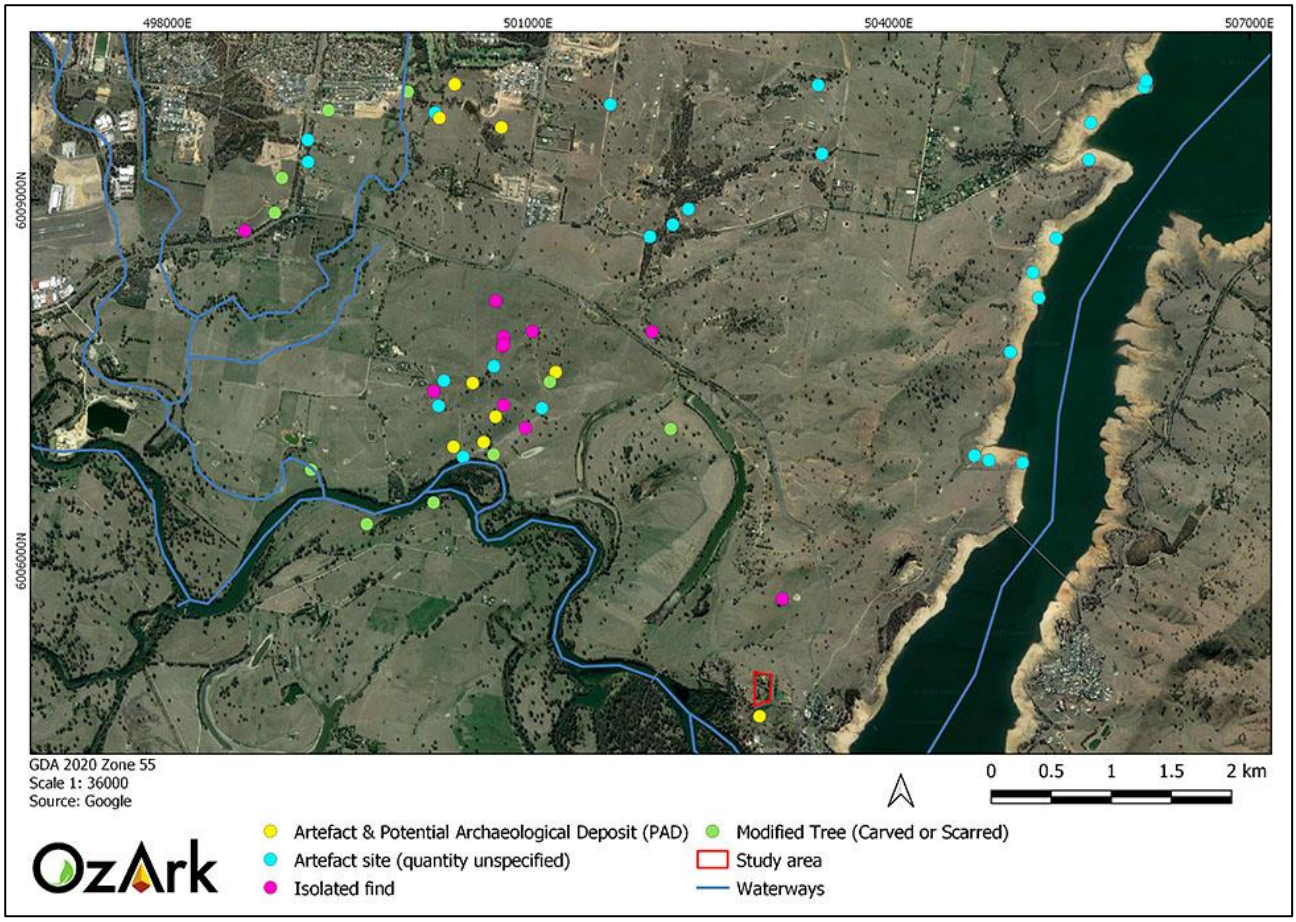


Figure 1-2: Aerial of AHIMS #61-1-0289 in relation to the study area.

2 DATE OF FIELDWORK

The site inspection was undertaken by OzArk Principal Archaeologist, Ben Churcher, on 26 April 2023.

3 RESULTS

Landforms within the study area were moderately sloping in the south (**Plate 1**), and in the north, the ridge landform has been disturbed by the construction of a large rural occupancy and garage with associated sheds and a tennis court (**Plate 2**). The strip of land to the east of the residence is currently used for an electricity transmission line (ETL) easement. This land is cleared and grazed. It occupies the apex of a broad ridge, also occupied by the residence within the study area.

Ground surface visibility (GSV) throughout the study area was low (0-10%) due to large areas of thick ground cover (**Plate 3**). Several varieties of immature vegetation are also present surrounding the residence; however, two examples of mature native trees remain. Both were inspected for signs of cultural modification and no scarring or cultural modification was identified (**Plate 4**).

The ETL easement contains equally low GSV and has been historically used for grazing (**Plate 5**). A field located to the southwest of the residence also consists of a grazed paddock, however this area contains much thicker and longer ground cover then the gardens surrounding the house or ETL easement (**Plate 6**).

As the south of the study area is situated on moderately sloping landforms at distance from waterways, the potential for PAD to be recorded is greatly decreased. In the north of the study area on the broad ridge landform there has been considerable disturbance from the construction of the residence, landscaping, and other built items such as sheds, tennis court, and driveways. The flatter areas of the study area are all associated with these disturbances, and this landform has a low archaeological potential as the ridge is localised (i.e. not part of a pathway) and separated from distant water by moderately steep slopes (i.e. not a good camping location).

The site inspection did not identify any Aboriginal objects, areas of PAD, or items of historic heritage value. All sections of the study area were confirmed as having low surface and subsurface archaeological potential.

4 RECOMMENDATIONS

Although the Secretary's Environmental Assessment Requirements (SEARs) for the project have not yet been received, OzArk expects that full community consultation following the *Aboriginal cultural heritage consultation requirements for proponents* and an assessment in accordance with the *Code of Practice for Archaeological Investigations of Objects in NSW* (the Code, DECCW 2010) will be required.

However, given the result of the site inspection, a feasible alternative is to undertake an additional site inspection with a member of the Aboriginal community, such as a member of the Albury Local Aboriginal Land Council (LALC), to ensure that no heritage values, tangible or intangible, will be harmed by the project.

- If during the site inspection, Aboriginal cultural values are identified at the study area, full community consultation will commence immediately.
- If during the site inspection, no Aboriginal cultural values are identified, the production of an Archaeological Technical Report (ATR) will sufficiently describe the inspection undertaken without the need for full Aboriginal community consultation.

Confirmation whether this second course of action is appropriate will have to wait until the SEARs can be consulted.

REFERENCES

DECCW 2010 — DECCW. 2010. *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW*. Department of Environment, Climate Change and Water, Sydney.

Jacobs 2020 — Jacobs. 2020. *Hume Dam Battery Energy Storage System Aboriginal Cutural Heritage Assessment.* Report to: Meridian Energy Australia.

Jacobs 2021 — Jacobs. 2021. Hume Battery Storage Aboriginal Cultural Heritage Assessment Report – test excavation stage. Report to: Meridian Energy Australia.

OEH 2011 — Office of Environment and Heritage. 2011. *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in New South Wales.* Department of Environment, Climate Change and Water, Sydney.

APPENDIX 1: PLATES

PLATE 1: VIEW OF SLOPING LANDFORMS PRESENT WITH MATURE NATIVE TREE ON RIGHT.

PLATE 2: VIEW OF RESIDENCE ON LEVELLED RIDGE LANDFORM.

PLATE 3: VIEW NORTHWEST OF RESIDENCE WITH AREA OF INCREASED GSV IN FOREGROUND.

PLATE 4: VIEW OF MATURE NATIVE VEGETATION PRESENT ON RIGHT.

PLATE 5: VIEW NORTH OF ETL EASEMENT PADDOCK.

PLATE 6: VIEW OF PADDOCK WITH THICK GROUND COVER PRESENT.

Appendix C. Social impact scoping worksheet

500 **Social Impact Assessment (SIA) Worksheet** Project name: Hume North BESS Date: 3/05/2023

PROJECT ACTIVITIES	CATEGORIES OF SOCIAL IMPACTS	POTENTIAL IMPACTS ON PEOPLE		PREVIOUS INVESTIGATION OF IMPACT		CUMULATIVE IMPACTS		ELEMENTS OF IMPACTS - Based on preliminary investigation					ASSESSMENT LEVEL FOR EACH IMPACT				PROJECT REFINEMENT	MITIGATION / ENHANCEMENT MEASURES
Which **project activity / activities** could produce social impacts ?	what **social impact categories** could be affected by the project activities	What impacts are likely, and what concerns/aspirations have people expressed about the impact? Summarise how each relevant stakeholder group might experience the impact.	Is the impact expected to be **positive or negative**	Has this impact previously been investigated (on this or other project/s)?	If "yes - this project," briefly describe the previous investigation. If "yes - other project," identify the other project and investigation	Will this impact combine with others from this project (think about when and where), and/or with impacts from other projects (cumulative)?	If yes, identify which other impacts and/or projects	Will the project activity (without mitigation or enhancement) cause a material social impact in terms of its: You can also consider the various magnitudes of these characteristics					Level of assessment for each social impact	What methods and data sources will be used to investigate this impact?			Has the project been refined in response to preliminary impact evaluation or stakeholder feedback?	What **mitigation / enhancement measures** are being considered?
								extent i.e. number of people potentially affected?	**duration** of expected impacts? (i.e. construction vs operational phase)	**intensity** of expected impacts i.e. scale or degree of change?	**sensitivity** or vulnerability of people potentially affected?	**level of concern/interest** of people potentially affected?		Secondary data	Primary Data - Consultation	Primary Data - Research		
CONSTRUCTION																		
Use of local and regional roads for transport of Project components, materials, equipment and people	surroundings	Potential impacts from **increased traffic and over sized loads** during construction could include disruption to local roads, cause damage to roads and increase safety risks (perceived or actual) to road user or pedestrians	Negative	Yes - other project	Approved Hume BESS development	No	N/A	No	Yes	No	No	Unknown	Standard assessment of the impact	Required	Targeted consultation	Potentially targeted research	No	Conduct timely and appropriate engagement to feed into project design, so impacts can be minimised wherever possible through project design. Ensure construction activities are carried out in accordance with the relevant legislation, including as outlined in a CEMP.
	access	Potential **traffic disruption or diversions** during construction could change local community's access to services, employment, other needs	Negative	Yes - other project	Approved Hume BESS development	No	N/A	Yes	Yes	Yes	Unknown	Yes	Detailed assessment of the impact	Required	Broad consultation	Targeted research	No	Conduct timely and appropriate engagement to feed into project design, so impacts can be minimised wherever possible through project design. Ensure construction activities are carried out in accordance with the relevant legislation, including as outlined in a CEMP.
Constructing Project components, laydown areas, ancillary infrastructure	way of life	Potential **changes to visual and acoustic amenity** for sensitive receivers closest to the Project and for local road users, due to the presence of construction activities, traffic, equipment and machinery, which can lead to loss of enjoyment and use at properties and from public viewpoints	Negative	Yes - other project	Approved Hume BESS development	No	N/A	Yes	Yes	Yes	Unknown	Unknown	Detailed assessment of the impact	Required	Broad consultation	Targeted research	No	Conduct timely and appropriate engagement to feed into project design, so impacts can be minimised wherever possible through project design. Ensure construction activities are carried out in accordance with the relevant legislation, including as outlined in a CEMP.
	health and wellbeing	Potential **air quality and acoustic impacts** during construction could affect the nearest sensitive receivers' physical and mental health, if not managed appropriately	Negative	Yes - other project	Approved Hume BESS development	No	N/A	Yes	Yes	Yes	Yes	Unknown	Detailed assessment of the impact	Required	Broad consultation	Targeted research	No	Conduct timely and appropriate engagement to feed into project design, so impacts can be minimised wherever possible through project design. Ensure construction activities are carried out in accordance with the relevant legislation, including as outlined in a CEMP.
Influx of non-local construction workers	access	Increased **demand for services and facilities, including local accommodation** from the construction workforce, potentially affecting access to social infrastructure, affordable housing, and community services by local residents and visitors	Negative	Yes - other project	Approved Hume BESS development	No	N/A	No	Yes	Unknown	Yes	Unknown	Detailed assessment of the impact	Required	Broad consultation	Targeted research	No	Consultation with local Council and community will allow mitigation to be built into the project design and appropriate resource management planning prior to construction commencing.
Project information sharing and updates	health and wellbeing	Potential increase in **community anxiety or stress** in response to perceived inability for people to influence Project construction activities/design/decisions	Negative	Yes - other project	Other BESS projects	No	N/A	Unknown	Unknown	Unknown	Unknown	Unknown	Detailed assessment of the impact	Required	Broad consultation	Targeted research	No	Stakeholder engagement and consultation activities have begun and will continue throughout the Project development. Communication channels such as phone and email, websites for community information have been established to help provide Project updates to interested parties. Consultation with community and agency stakeholders will continue as part of the Project development and EIS preparation phase.
Increased business opportunities and economic investment in the local/regional area	livelihoods	Potential for increased trade for **businesses including trades, accommodation providers, hospitality and logistics services,** boosting economic opportunities and spending, and indirectly supporting employment opportunities	Positive	Yes - other project	Other BESS projects	No	N/A	Yes	Yes	Yes	Unknown	Unknown	Detailed assessment of the impact	Required	Broad consultation	Targeted research	No	Consultation with local Council and community will allow mitigation to be built into the project design and appropriate resource management planning prior to construction commencing.
Direct and indirect employment opportunities	livelihoods	Potential increased direct and indirect **local employment opportunities, skills development**, flow on economic benefits for regional community through the use of local/regional labour and materials where feasible	Positive	Yes - other project	Other BESS projects	No	N/A	Yes	Yes	Yes	Unknown	Yes	Detailed assessment of the impact	Required	Broad consultation	Targeted research	No	Consultation with local Council and community will allow mitigation to be built into the project design and appropriate resource management planning prior to construction commencing.
OPERATION																		
Operation of the Project within permanent disturbance footprint	surroundings	Changes to existing land use resulting in **impacts to biodiversity**, potential loss of habitat for fauna and native vegetation, leading to perceived impact on quality of the natural/rural setting	Negative	Yes - other project	Approved Hume BESS development	No	N/A	No	No	No	No	Unknown	Minor assessment of the impact	Required	Limited - if required (e.g. local council)	Not required	No	Consultation with local Council and community will allow mitigation to be built into the project design and appropriate resource management planning prior to construction commencing.
	health and wellbeing	**Operational noise emissions** have the potential to cause sleep disruption or irritation to nearby residents, within their homes or within their property boundaries. **Operational bushfire or thermal runaway hazards** can result in perceived risks to health and wellbeing of nearby dwellings.	Negative	Yes - other project	Approved Hume BESS development	No	N/A	Yes	Yes	Yes	Unknown	Unknown	Detailed assessment of the impact	Required	Broad consultation	Targeted research	No	Consultation with local Council and community will allow mitigation to be built into the project design and appropriate resource management planning prior to construction commencing.
Project information sharing and updates	decision-making systems	Perceived lack of ability for community or stakeholders to **make informed decisions, or inability to access enquiry and complaint processes**, leading to leading to frustration or a sense of lack of control for some individuals	Negative	Yes - other project	Other BESS projects	No	N/A	Unknown	Yes	Yes	Unknown	Unknown	Detailed assessment of the impact	Required	Broad consultation	Targeted research	No	Stakeholder engagement and consultation activities have begun and will continue throughout the Project development. Communication channels such as phone and email, websites for community information have been established to help provide Project updates to interested parties. Consultation with community and agency stakeholders will continue as part of the Project development and EIS preparation phase.