

Prepared for Flow Power (Utilacor Pty Ltd)

Environmental Impact Statement

Corowa Battery Energy Storage System

March 2026

Project Number: 250425

Document verification

Project Title: Corowa Battery Energy Storage System

Project Number: 250425

Project File Name: 250425_Corowa BESS EIS

Revision	Date	Prepared by	Approved by
Draft	19/12/2025	T. Miller S. Caulfield	B. Marshall
Final v1	21/01/2026	T. Miller S. Caulfield	B. Marshall
Final v2	06/03/2026	S.Caulfield	S.Caulfield

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REAP declaration

This Environmental Impact Statement has been prepared by NGH Pty Ltd for Flow Power (Utilacor Pty Ltd) on behalf of Corowa Energy Pty Ltd as trustee for the Corowa Energy Project Trust with the assistance of a range of specialists.

Declaration of registered environmental assessment practitioner	
Name	Brooke Marshall
Registration number	General and Impact Assessment Specialist + Registered Environmental Assessment Practitioner (REAP) certification (IA11090 and REAP certification R80042)
Organisation registered with	NGH Consulting
The undersigned declares that this EIS: • Has been prepared in accordance with Schedule 2 of the <i>Environmental Planning and Assessment Regulation 2021</i> • Contains all available information relevant to the environmental assessment of the development, activity or infrastructure to which the EIS relates • Does not contain information that is false or misleading • Addresses the Secretary's Environmental Assessment Requirements (SEARs) for the Project • Identifies and addresses the relevant statutory requirements for the Project, including any relevant matters for consideration in environmental planning instruments • Has been prepared having regard to the Department's <i>State Significant Development Guidelines - Preparing an Environmental Impact Statement</i> • Contains a simple and easy to understand summary of the Project as a whole, having regard to the economic, environmental and social impacts of the Project and the principles of ecologically sustainable development • Contains a consolidated description of the Project in a single chapter of the EIS • Contains an accurate summary of the findings of any community engagement • Contains an accurate summary of the detailed technical assessment of the impacts of the Project as a whole.	
Signature: 	
Date: 6/3/2026	

Authors qualifications

Author	Qualifications
Brooke Marshall	Bachelor of Natural Resources (Hons1)
Sarah Caufield	BSc (Environmental Science) BSc Hons (Environmental Science) LLM (Environmental Law)
Terence Miller	Certificate III Arboriculture Diploma of Environmental Studies

Acronyms and abbreviations

AEMO	Australian Energy Market Operator
AEMI	Australian Emergency Management Institute
AEP	Annual Exceedance Probability
AHD	Australian Height Datum
AHIMS	Aboriginal Heritage Information Management System
APZ	Asset Protection Zone
BAM	Biodiversity Assessment Method 2020
BC Act	<i>Biodiversity Conservation Act 2016 (NSW)</i>
BMS	Battery Management System
CBF	Community Benefit Fund
CE	Critically Endangered
CPHR	Conservation Programs, Heritage and Regulation
Cth	Commonwealth
DA	Development Application
DCCEEW	Department of Climate Change, Energy, the Environment and Water (Cth) (formerly DAWE)
DCCEEW	Department of Climate Change, Energy, the Environment and Water (NSW) (formerly DPE)
DPHI	Department of Planning, Housing and Infrastructure (NSW) (formerly DPE)
ELF	Extremely Low Frequency
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
EMF	Electromagnetic Field
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999 (Cth)</i>
EP&A Act	<i>Environmental Planning and Assessment Act 1979 (NSW)</i>
ESD	Ecologically Sustainable Development
FM Act	<i>Fisheries Management Act 1994 (NSW)</i>
FSS	Fire Suppression System
GDA	Geographic Datum of Australia
GDE	Groundwater Dependent Ecosystems
GIS	Geographic information system

GPS	Geographical positioning system
ha	Hectares
Heritage Act	<i>Heritage Act 1977 (NSW)</i>
ICNG	Interim Construction Noise Guideline
IFD	Intensity Frequency Duration
ISEPP	State Environmental Planning Policy (Infrastructure) 2007 (NSW)
ISP	Integrated Systems Plan
KFH	Key Fish Habitat
km	Kilometres
LALC	Local Aboriginal Land Council
LCZ	Landscape Character Zone
LEP	Local Environment Plan
LFP	Lithium Iron Phosphate (LiFePO ₄)
LGA	Local Government Area
LOS	Level of Service
m	Metres
MVPS	Medium Voltage Power Station
MW	Megawatt
MWh	Megawatt hour
NEM	National Energy Market
NML	Noise Management Level
NPfi	Noise Policy for Industry
NPW Act	<i>National Parks and Wildlife Act 1974 (NSW)</i>
PHA	Preliminary Hazard Analysis
POC	Point of Connection (to the existing substation)
PRS	Preliminary Risk Screening
RBL	Rating Background Level
TEC	Threatened Ecological Community – a general term given to both Commonwealth and NSW listed ecological communities
TISEPP	State Environmental Planning Policy (Transport and Infrastructure) 2021
TMS	Thermal Management System
VPA	Voluntary Planning Agreement

Terms used in this report

Corowa Battery Energy Storage System	The development, construction, operation and decommissioning of a 100MW/200MWh (2 hours) Battery Energy Storage System (BESS), generally comprising temporary construction areas, battery storage units, inverters, transformers, access roads, underground and above ground cables, connection to the existing Essential Energy Corowa Substation, associated operational facilities and all auxiliary works.
The Project	Corowa Battery Energy Storage System (Corowa BESS)
The Applicant	Flow Power (Utilacor Pty Ltd) on behalf of Corowa Energy Pty Ltd as trustee for the Corowa Energy Project Trust
Involved lots	All lots which are intersected by the Project, as listed in Table 1-2.
Subject lot	The Lot associated with the siting of the Corowa BESS, being Lot 12 DP1115583.
Project Site	The area of land that was investigated for the siting of the Project. In total the Project Site covers an area of approximately 42.3ha .
Development Footprint	The area that would be impacted directly by the Project (including road upgrades and temporary construction impacts). In total the Development Footprint covers an area of approximately 10.34ha .
Indicative layout	The indicative layout shown in this EIS will be subject to minor changes and refinements during detailed design after Project approval however, it would be located wholly within the Development Footprint.
Associated receiver	Receivers, usually dwellings, on privately-owned land where the owner has reached an agreement with the Applicant in relation to the development and the management of impacts. They are considered 'Project Associated' and are not required to be assessed for the impacts covered specifically by the agreement.
Non-associated receiver	Receivers, usually dwellings, on privately-owned land, where the owner does not have an agreement with the Applicant in relation to the development or the management of impacts. Non-associated receivers are fully assessed for all environmental impacts that may be generated by the Project.

Executive Summary

Project overview

Flow Power (Utilacor Pty Ltd) on behalf of Corowa Energy Pty Ltd as trustee for the Corowa Energy Project Trust (the Applicant) is proposing the development of a 100MW / 200MWh (2-hour) Battery Energy Storage System (BESS) near Corowa, NSW (the Project).

The Project is located approximately 3km north from the Corowa town centre, within the Federation Local Government Area (LGA). The street address is 275 Whitehead Street, Corowa NSW, 2646. Access is currently provided to the Project Site via a private driveway off Whitehead Street, which would be upgraded. The intersection at Honour Avenue / Bullecourt Road will also be upgraded to accommodate the construction traffic.

The Project would connect to the Essential Energy Corowa 132/22 kV Substation in the south-eastern corner of the Project Site and is also accessed from Whitehead Street.

The Applicant would enter into a long-term lease with the host landholder, and no formal subdivision is required over the BESS site to enable this lease. A subdivision is however proposed as part of this Project, over Lot 12 DP1115583, to create a new small land parcel adjacent to the Essential Energy Substation, to facilitate new grid connection infrastructure. The new land parcel created, along with the grid connection infrastructure would be gifted to Essential Energy.

During operation, the facility will be run remotely. With the exception of the Essential Energy connection assets, the area would be returned to a safe, stable, non-polluting condition during decommissioning, in about 20 years (or the Project may be recommissioned and continue to operate).

The Applicant has worked with local stakeholders and Federation Council to develop and co-design Community Benefit Sharing Initiatives, as is required for State Significant Developments. These include a Neighbour Benefit Offer Program valued at up to \$250,000 for residents within 1 km of the project site, and a proposed \$800,000 Community Enhancement Fund, which will exceed NSW government recommendations of \$600,000 in total.

Key components of the Project are summarised in Table 3-1, shown in Figure 3-1 and are described in detail within this Environmental Impact Statement (EIS) and supporting specialist studies.

Strategic justification for the Project

The Project aligns with the current strategic direction of the Commonwealth, NSW and Local Governments, which supports investment in renewable energy and storage to ensure secure and reliable energy. The Project as presented in this EIS would:

- Build on the aims of the NSW Electricity Infrastructure Roadmap to transition away from coal-fired energy, towards greater levels of renewable energy within the grid.
- Assist to stabilise and secure the supply of electricity for residents, business owners and service providers. It is estimated that the Project would have the capacity to power approximately 112,400

households for a 2-hour period during a full discharge (assuming 21.355kWh/day usage) (AER, 2023).

- Assist to drive down the wholesale electricity prices for energy consumers.
- Expand and underwrite innovative retail offerings for NSW energy consumers, pairing renewable offtake and large-scale storage for firmed renewable retail supply for NSW businesses
- Generate local employment, economic stimulus and other local economic benefits.

Table ES1 Project summary of the key features of the Corowa BESS Project

Feature	Description
Battery Energy Storage System (BESS)	100MW / 200MWh (2-hours) storage capacity Battery storage units comprised of Lithium Iron Phosphate (LFP) cells¹ and enclosed in 60 containers (up to 5,000 cells per container) 30 x Medium Voltage Power Stations (MVPS) that include Power Conversion Systems (PCS)
Substation and switchyard	Switch room, High Voltage (HV) transformers and HV switchgear, Harmonic filter
Transmission line connections	Above ground, below ground (or a combination of both) transmission connection from the proposed BESS to the existing 132 / 22 kV Essential Energy Corowa Substation site
Permanent ancillary infrastructure	Operation and maintenance facility including site office A Battery Management System to monitor individual battery cell health and integrated fire monitoring and control systems Internal vehicle access tracks and parking Security fencing, lighting, signage and lightning protection Water tanks
Site access and intersection upgrades	The site access off Whitehead Street and the intersection between Honour Avenue and Bullecourt Rd will require upgrade.
Temporary works areas	Construction compound and laydown areas, temporary vehicle access tracks and parking.
Environmental management provisions	Screening vegetation A noise wall and amenity (solid) screening fence.
Employment	Construction phase: 117 Full time equivalent Operation: 1.5 full time equivalent (FTE) (0 onsite as the BESS will be operated entirely remotely)

¹ Preferred option at this time.

Feature	Description
Construction timing and hours	Construction occurring over 18 months Monday – Friday: 7am – 6pm; Saturday: 8am – 1pm; Sundays and public holidays: no work
Operational lifespan and hours	Expected operational lifespan of 20 years; 24 hours/day
Decommissioning and rehabilitation	When that lifespan is reached, an upgrade of the BESS could be undertaken and consequently either request an extension or lodge a new DA with a more current technology. If the site is not repowered at the end of its useful life, then it would be decommissioned.

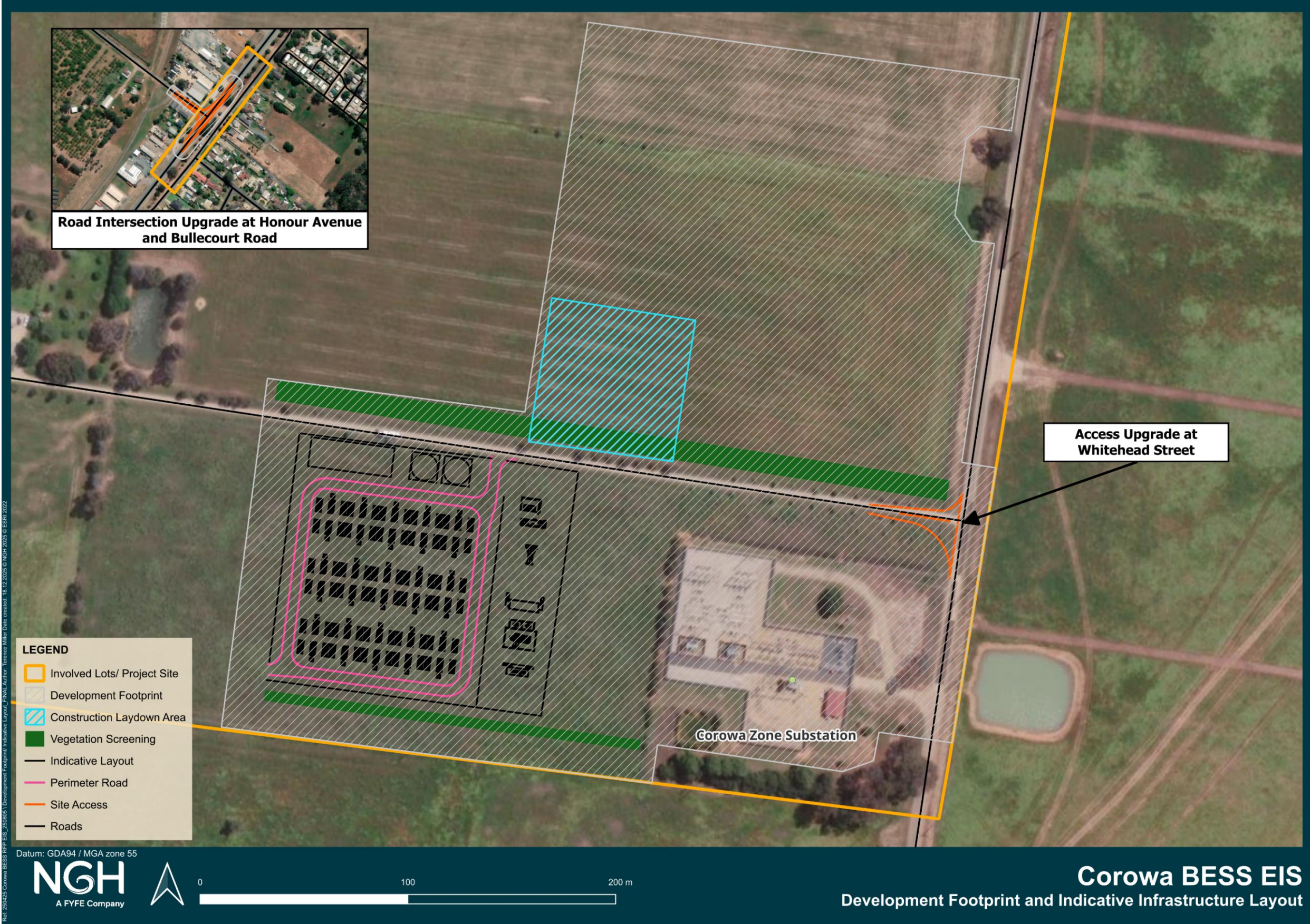


Figure ES1 Corowa BESS Development Footprint and indicative infrastructure layout

Engagement

The Applicant has engaged directly and openly with a wide range of stakeholders, including neighbouring residents, local community groups, Traditional Owners, businesses, and other relevant parties.

Proactive agency consultation has been undertaken to assist the Project assessment. This has included communications to Conservation Programs, Heritage and Regulation Transport for NSW, and Rural Fire Service. A summary of agency engagement is provided in Section 5.3.

Responsiveness to community feedback and site constraints

The Project Site was defined broadly to ensure the Project could be developed to be responsive to environmental and social constraints. The smaller Development Footprint, within which infrastructure and Project activities would occur, has now been defined in response to the following key matters:

- Visual amenity – early consultation with the community identified that several dwelling entitlements exist on the western side of Whitehead Street. These, and other local views, have all been assessed for visual impacts. The Project includes a commitment to visual screen plantings and their maintenance.
- Noise amenity – early noise modelling demonstrated that a noise wall would be required to ensure operational noise compliance at all non-associated receivers. This has been adopted by the Project and operational noise compliance is now predicted at all non-associated receivers.
- Bushfire and fire safety – This has been a key issue of interest to the local community. Design of Asset Protection Zones and consultation with the RFS has commenced. In addressing the requirements for NSW RFS *Planning for Bush Fire Protection 2019* (PBP) (NSW RFS, 2019), site and perimeter access, visual screening and the location of the noise wall have been considered. Regarding management of water that would be used during firefighting, the Victorian Country Fire Authority's (CFA's) large-scale renewable facility *Design Guidelines and model requirements for Renewable Energy Facilities* (CFA, 2023) has been referenced. This is not an NSW RFS guideline, but this is the guideline that speaks to the risk of containing any contaminated water most appropriately.
- Biodiversity – limited native vegetation occurs within the Project site. Even so, the Project has identified 'no go' zones around key remnants / features of habitat value.
- Grid connection – ongoing negotiations with Essential Energy to ensure suitable point of connection.

Otherwise, the environmental assessments have demonstrated the site has low constraints to the development of a BESS:

- Flooding risks can be managed by including a 500mm freeboard above the 1% Annual Exceedance Probability (AEP) flood level. Modelling has confirmed that the Project does not exacerbate flooding.
- No Aboriginal cultural heritage values were identified within the assessment area, through site surveys and in consultation with the Aboriginal community representatives.
- No contamination was identified, from past agricultural or adjacent substation works.

Purpose of this Environmental Impact Statement (EIS)

The Project is considered a State Significant Development because it is a private electricity generating project (which includes energy storage) with a capital investment value greater than \$30 million. The *State Environmental Planning Policy (Planning Systems) 2021* dictates the environmental assessment must be undertaken in accordance with:

- Part 4 of the NSW *Environmental Planning and Assessment Act 1979*.
- Schedule 2 of the NSW *Environmental Planning and Assessment Regulation 2021*.
- The Project-specific Secretary's Environmental Assessment Requirements (refer to Appendix A to see where SEARs requirements are addressed in this EIS).

The purpose of this Environmental Impact Statement (EIS) is to assess the economic, environmental and social impacts of the Project. Specialist assessments have helped to shape the Project with the key results summarised below.

Table ES2 Summary of the key assessment outcomes for the Corowa BESS Project

Feature	Description
Visual impacts	The Project is sited to take advantage of the existing screening provided by the Corowa substation and road site and perimeter plantings. Without mitigation, all viewpoints (including from nearby dwelling entitlements) were assessed as having low impact. Even so, additional areas of screen planting will be established and maintained for the life of the Project.
Noise impacts	The Project will include noise walls to ensure operational noise compliance at all non-associated receivers. The potential for temporary exceedances during construction will be managed in consultation with affected neighbours and reasonable and practical measures implemented to further reduce noise.
Hazards and risks	Design of the facility in accordance with the recommendations of the Preliminary Hazard Assessment, Bushfire Assessment and best practice guidelines will ensure risks are managed.
Biodiversity	Nearby remnant vegetation is listed as an NSW Threatened Ecological Community: <i>Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions</i>. Two threatened species were recorded during targeted surveys within the Project site: • Large Bent-winged Bat (<i>Miniopterus orianae oceanensis</i>) • Southern Myotis (<i>Myotis macropus</i>). Native vegetation and habitat for threatened species have been avoided by the Project. Protocols have been developed to protect nearby habitats, known to contain the Endangered Sloane's Froglet (<i>Crinia sloanei</i>). No offset obligation is generated for the Project.
Soils and contamination	The direct impacts of the Project will be relatively small (~10 ha) but occur on important agricultural land. Rehabilitation will occur progressively during construction and as part of decommissioning, informed by the soil surveys undertaken in accordance with best practice guidelines.

Feature	Description
Land use compatibility	The site is capable of sustained cropping and is currently used for agriculture. The cost benefit economic analysis demonstrates the site is more profitable as a BESS. Adjacent lands include the Corowa substation, small lot rural residential lots, as well as grazing and cropping enterprises. Identified land use conflict risks can be managed using standard protocols with high confidence – these relate to potential contaminants, weeds and pests, dust, noise and bushfire.
Aboriginal cultural heritage	Field surveys carried out with an archaeologist and a representative from Registered Aboriginal Parties (RAPs) did not identify any Aboriginal artefacts or sites within the Project Site. Unexpected finds protocols will apply during works and will be included in relevant Management Plans.
Traffic and access	With the adoption of two upgrades (site access and intersection of Honour Avenue and Bullecourt Road in Corowa), the road network is considered able to accommodate the Project's construction traffic. A Traffic Management Plan will be developed in consultation with Transport for NSW and Federation Council, and additional permitting will apply to Oversize Overmass vehicles as required.
Hydrology	A portion of the Project is located within the mapped 1% AEP flooding for the area. To address this, it is proposed to raise the Project Site to accommodate 500mm freeboard. Modelling results indicate that, in the post-development scenario, the implementation of an elevated hardstand is sufficient mitigation to protect the Project Site from flooding in the 1% AEP scenario. The extent of overland flooding is not impacted by the introduction of the Project and the elevated hardstand, with no new properties inundated, or increases in depth or velocity elsewhere in the floodplain. In the climate change scenario of a 1% AEP storm event, the proposed elevated hardstand still provides sufficient protection and 500mm freeboard from flooding.
Social and economic impacts	The Project is expected to deliver tangible local and regional benefits. Only two impacts, relating to accommodation and housing, and temporary population changes, are expected to persist at a medium level despite mitigation. All other negative residual impacts are expected to be of low or negligible significance. The Applicant has provided a draft Workforce Accommodation Plan to Council and continues to work with Council on the development of a successful Accommodation and Employment Strategy for the Project.

Feature	Description
Cumulative	While most cumulative impacts are best mitigated on a project-by-project basis, traffic and social impacts were regarded as the most uncertain. The Applicant's best understanding of timing is presented in this EIS as well as the stated timing of nearby projects which may coincide. While the chance of overlap cannot be known with certainty at this time, the period of overlap of peak construction traffic is not considered significant in terms of the ability of the local road network to handle this overlap. Cumulative traffic impacts will require more accurate data, closer to construction with regard to managing potential for overlapping construction schedules. As stated above, a Workforce Accommodation Plan draft has been provided to Council. At a strategic level, it is important to note that cumulative benefits also accrue from the Project's alignment with federal and state renewable energy policies and the ability to 'firm' the grid for the benefit of local and regional electricity consumers.

Justification

The Project supports the State's transition to a more reliable, lower-emissions electricity system while aligning with local aspirations for economic resilience, grid stability and investment in regional infrastructure.

The Project can proceed with confidence that its social and economic risks are well understood, responsibly managed and offset by meaningful local and regional benefits. With the recommended mitigation actions, ongoing engagement, and adaptive monitoring in place, the Project will support a more resilient energy network while contributing positively to community wellbeing and regional economic growth.

Community Benefit Initiatives are being designed in collaboration with Federation Council and the local community. Benefit Initiatives will be available for the duration of the Project's lifecycle, including a Neighbour Benefit Sharing Initiative which considers potential impacts to nearby residents.

The Project as presented in this EIS meets all relevant planning provisions and guidelines and is considered justifiable and acceptable. On balance, the Project is considered appropriate to both:

- The site's location, which is located adjacent to an existing substation that would benefit from the grid services provided by this storage facility, and good access, requiring minimal road upgrades.
- The site's environmental values, which will allow the development of a Project with low impacts on neighbours, biodiversity, cultural heritage, soils and water resources.

Where to from here?

During the public exhibition of this EIS, the community, local council and government agencies are invited to make informed submissions in relation to the Project. The consent authority would consider any formal submissions made during the exhibition period. The Applicant's response to all matters raised in submissions will also be exhibited as Department of Planning, Housing and Infrastructure (DPHI) commence preparation of their own assessment of the Project's impacts and its merits and make a recommendation regarding its ability to be approved.

Please take the opportunity to make a submission directly to the DPHI and to participate in the future engagement activities planned prior to the Project's determination.

01 Introduction



1. Introduction

1.1. Format of this Environmental Impact Statement (EIS)

The purpose of this Environmental Impact Statement (EIS) is to assess the economic, environmental and social impacts of the Corowa Battery Energy Storage System (BESS) Project (the Project). This EIS is structured to help the community, local council, government agencies and the consent authority understand the Project and its impacts, so they can make informed submissions or decisions on the merits of the Project.

The EIS has been prepared in line with the following guidance documentation:

- State Significant Development Guidelines (DPHI, 2024)
- State Significant Development Guidelines Appendix B– Preparing an Environmental Impact Statement (DPHI, 2022)
- Undertaking Engagement Guidelines for State Significant Projects (DPHI, 2024)
- Cumulative Impact Assessment Guidelines for State Significant Projects (DPHI, 2022)
- Social Impact Assessment Guidelines for State Significant Projects (DPHE, 2023)

It has been prepared in two parts:

1. The main report describes the Project, summarises the findings of consultation activities and the results of detailed environmental assessments. It includes all mitigation measures proposed to manage the impacts on the community and the environment.
2. The supporting appendices include more detail in relation to:
 - i) The Project specific Secretary's Environmental Assessment Requirements (SEARs) which prescribe the structure and content of the EIS, including a cross reference to where each requirement is addressed in the EIS
 - ii) Statutory compliance of the Project
 - iii) Engagement activities and outcomes, with the community and agencies
 - iv) Detailed specialist assessments (each provided in full).

The appendices also include a consolidated table of all proposed mitigation measures to manage the impacts on the community and the environment. These form part of the Project description, and would be required to be implemented, pending Project approval. The supporting appendices include:

- Appendix A Project SEARs
- Appendix B Consolidated mitigation measures
- Appendix C Statutory compliance table
- Appendix D Community and stakeholder engagement
- Appendix E Specialist reports
 - E1 Biodiversity Development Assessment Report
 - E2 Aboriginal Cultural Heritage Assessment Report
 - E3 Traffic Impact Assessment Report
 - E4 Preliminary Hazards Assessment
 - E5 Bushfire Assessment Report

- E6 Landscape Character and Visual Impact Assessment Report
- E7 Landscaping Plan
- E8 Noise and Vibration Impact Assessment Report
- E9 Desktop Flood Review and Hydrological Investigation
- E10 Soil Technical Report and Land Use Conflict Risk Assessment
- E11 Preliminary Site Investigation
- E12 Social and Economic Impact Assessment.

1.2. Project outline

Flow Power (Utilacor Pty Ltd) on behalf of Corowa Energy Pty Ltd as trustee for the Corowa Energy Project Trust (the Applicant) is proposing the development of the Corowa BESS at 275 Whitehead Street, Corowa NSW, 2646.

The Project would involve construction, operational and eventual decommissioning of a 100MW / 200MWh (2-hours) Battery Energy Storage System (BESS). It would include the following key infrastructure components:

- Lithium Iron Phosphate (LFP)² battery storage units, enclosed in 60 containers (up to 5,000 cells per container)
- Associated switch room, High Voltage (HV) transformers and HV switchgear
- 30 x Medium Voltage (MV) power station Power Conversion Systems (PCUs)
- Harmonic filter
- Operations and Maintenance (O&M) building
- Internal access and parking, fencing and security infrastructure
- Connection (above / below ground) to the existing 132 / 122kV Essential Energy Corowa Substation.

The Project stores energy during periods of excess generation and then supplies electricity to the National Electricity Market (NEM).

1.3. Project objectives

The objectives of the Corowa BESS include the following:

- Provide local energy storage capacity to respond to the increasing need to reinforce the NSW electricity transmission system (provide grid stability, security, and reliability)
- Provide a short-term dispatchable peaking supply of electricity during peak demand periods and reduce the risk of loadshedding or blackouts
- Utilise existing transmission infrastructure, to minimise potential environmental and social impacts
- Provide both direct and indirect employment opportunities during construction and operation

² The most suitable battery technology for the Project, to meet capacity and other requirements, is still being determined. This is the currently preferred option under consideration.

- Work with the local community and stakeholders in the identification and mitigation of any potential environmental and social impacts and ensure quality, safety, and environmental standards are maintained.
- Expand and underwrite innovative retail offerings for NSW energy consumers, pairing renewable offtake and large-scale storage for firmed renewable retail supply for NSW businesses

1.4. Applicant details

The Project is being developed by Flow Power (Utilacor Pty Ltd) on behalf of Corowa Energy Pty Ltd as trustee for the Corowa Energy Project Trust. Details of the Applicant are set out in Table 1-1.

Flow Power is an Australian electricity retailer who is developing a portfolio of renewable energy generation and storage projects around Australia. Flow Power is focussed on accelerating Australia's progression to 100% renewable energy. Since 2009, Flow Power has partnered with Australian businesses to reshape how they manage energy; from retailing and generating electricity to providing forward-thinking technology. Flow Power is building and supporting clean energy generation projects, with a mix of wind, solar and storage across its renewable energy project portfolio. Flow Power's renewable energy project portfolio spans Victoria, New South Wales, Queensland and South Australia. These energy projects are helping accelerate Australia's transition to a renewable future, providing energy to the National Electricity Market (NEM) and supporting surrounding communities through employment, education, community funding, and financial opportunities.

Flow Power owns and operates its projects, which support its electricity retail activities. This means Flow Power intends to be a long-term part of the communities in which it operates – a key differentiator and a clear incentive to make its projects as responsive and appropriate to the local community as possible.

Table 1-1 Applicant details

Applicant Details	Detail
The Applicant	Flow Power (Utilacor Pty Ltd) on behalf of Corowa Energy Pty Ltd as trustee for the Corowa Energy Project Trust
Office Address	Ground Floor, 109-133 Burwood Road, Hawthorn Victoria 3122
ABN	88 077 006 850
ACN	077 006 850

1.5. Project site overview

1.5.1. The location

The Project and associated ancillary infrastructure would be located at 275 Whitehead Street, Corowa NSW, 2646. Access is currently provided to the Project Site via a private driveway off Whitehead

Street, which runs along the eastern boundary of the Project Site. The Essential Energy Corowa 132/22 kV Substation is within the south-eastern corner of the Project Site and is also accessed from Whitehead Street. An easement containing network distribution infrastructure runs along the southern boundary of the lot.

The Project is located approximately 3km north from the Corowa town centre, within the Federation Local Government Area (LGA). The Project includes one road upgrade in Corowa, at the intersection of Honour Avenue / Bullecourt Road.

Other nearby towns include Rutherglen, located approximately 9km to the south-east, Howlong, located approximately 20km to the east, Mulwala, located approximately 36km to the west, and Berrigan, located approximately 65km to the north-west (refer Figure 1-1).

1.5.2. Tenure and zoning

The Project will primarily be located on a privately owned lot (Lot 12 DP1115583) on a property named 'Yanina'.

Project connection works will be required within the Essential Energy's Corowa Substation lot (Lot 11 DP1115583).

Road upgrades will be required on Whitehead Street, Corowa and the Honour Avenue / Bullecourt Road intersection, Corowa.

The zoning and tenure of affected lots is set out below. The Development Footprint (the area that may be impacted directly by the Project, including temporary construction impacts) is also tabulated and totals approximately **10.34ha** in extent.

Table 1-2 Lots and easements within the Development Footprint

Address	Ownership	Zoning	Proposed usage for the Project	Lot/DP	Development Footprint (ha)
'Yanina', 275 Whitehead Street, Corowa, NSW 2646 Australia	Freehold	RU1 Primary Production	Corowa BESS and Project Site access	Lot 12 DP1115583	7.85
267 Whitehead Street, Corowa, NSW 2646 Australia	Essential Energy	RU1 Primary Production	Essential Energy Corowa Substation (connecting works)	Lot 11 DP1115583	1.33
Honour Avenue / Bullecourt Road	Federation Council	NA	Road upgrades	NA	0.88
Whitehead Street	Federation Council	NA	Road upgrades	NA	0.28
'Yanina', 275 Whitehead Street, Corowa, NSW 2646 Australia	Easement over freehold land benefitting Essential Energy	RU1 Primary Production	Transmission line easement within private lot	Lot 12 DP1115583	(0.31 ³)
Total area					10.34

³ Included within freehold Lot 12 DP1115583.

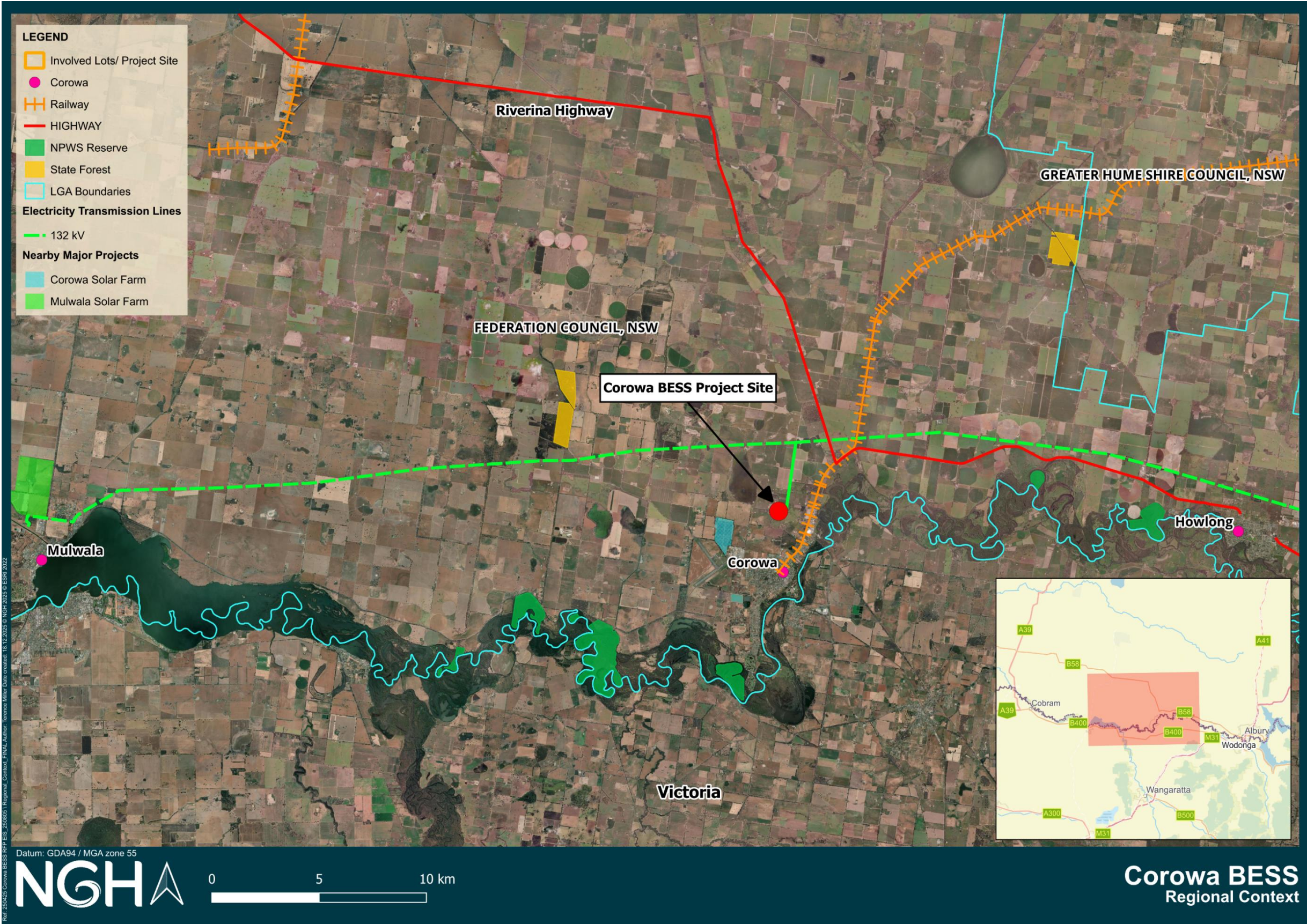


Figure 1-1 Regional context, showing the already developed Corowa Solar Farm to the west of the proposed Corowa BESS.

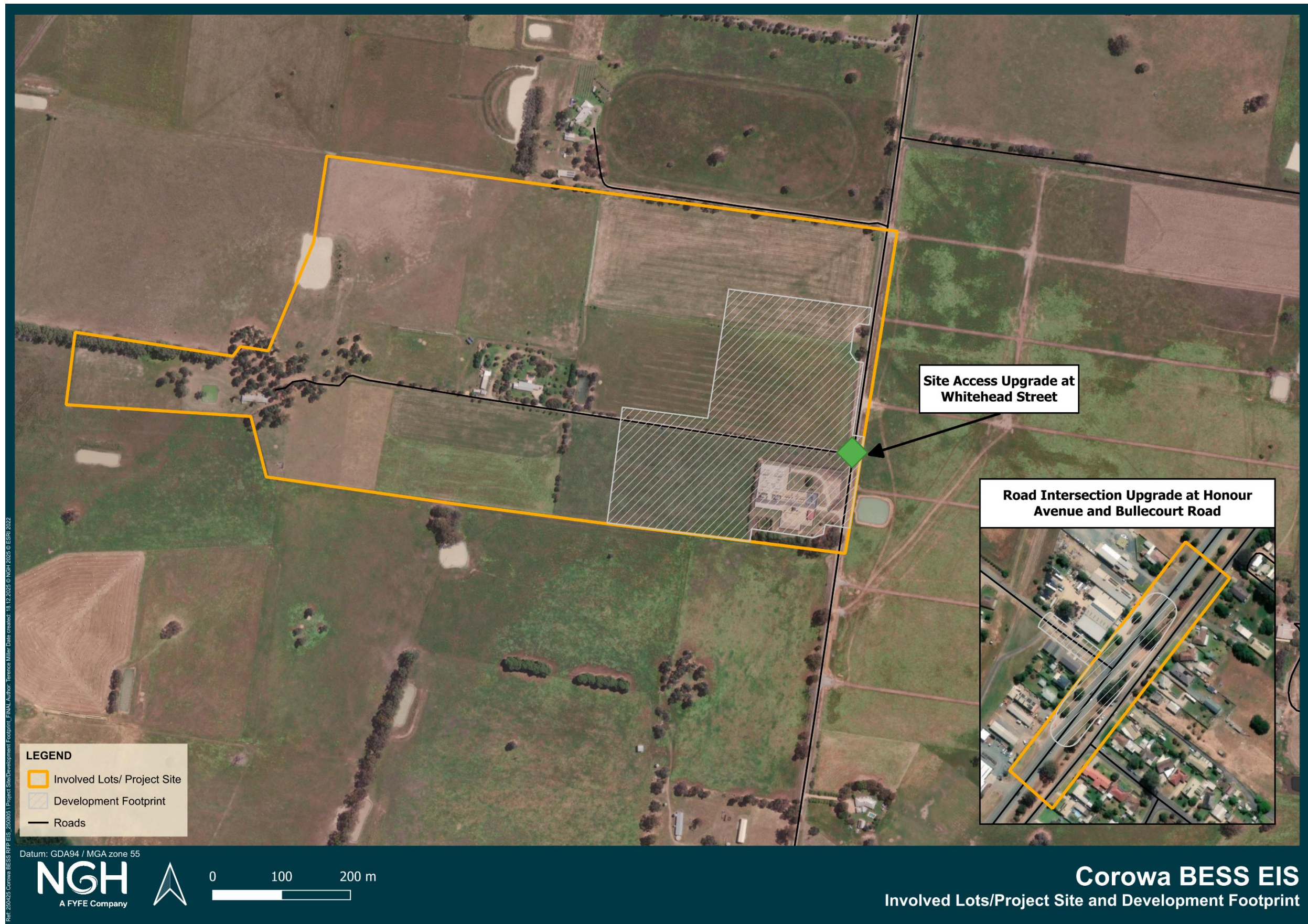


Figure 1-2 Project Site and Development Footprint

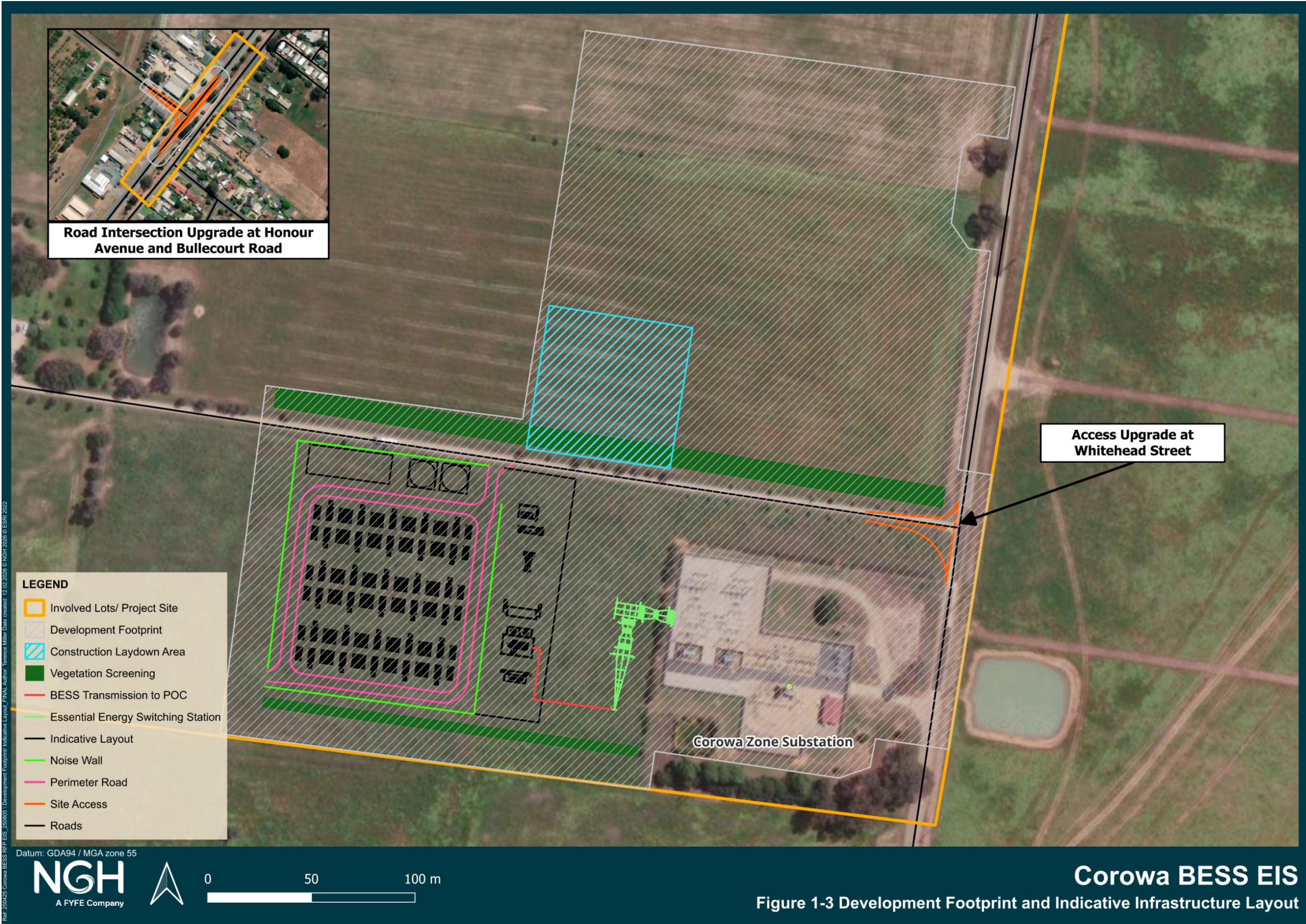


Figure 1-3 Development Footprint and Indicative Infrastructure Layout



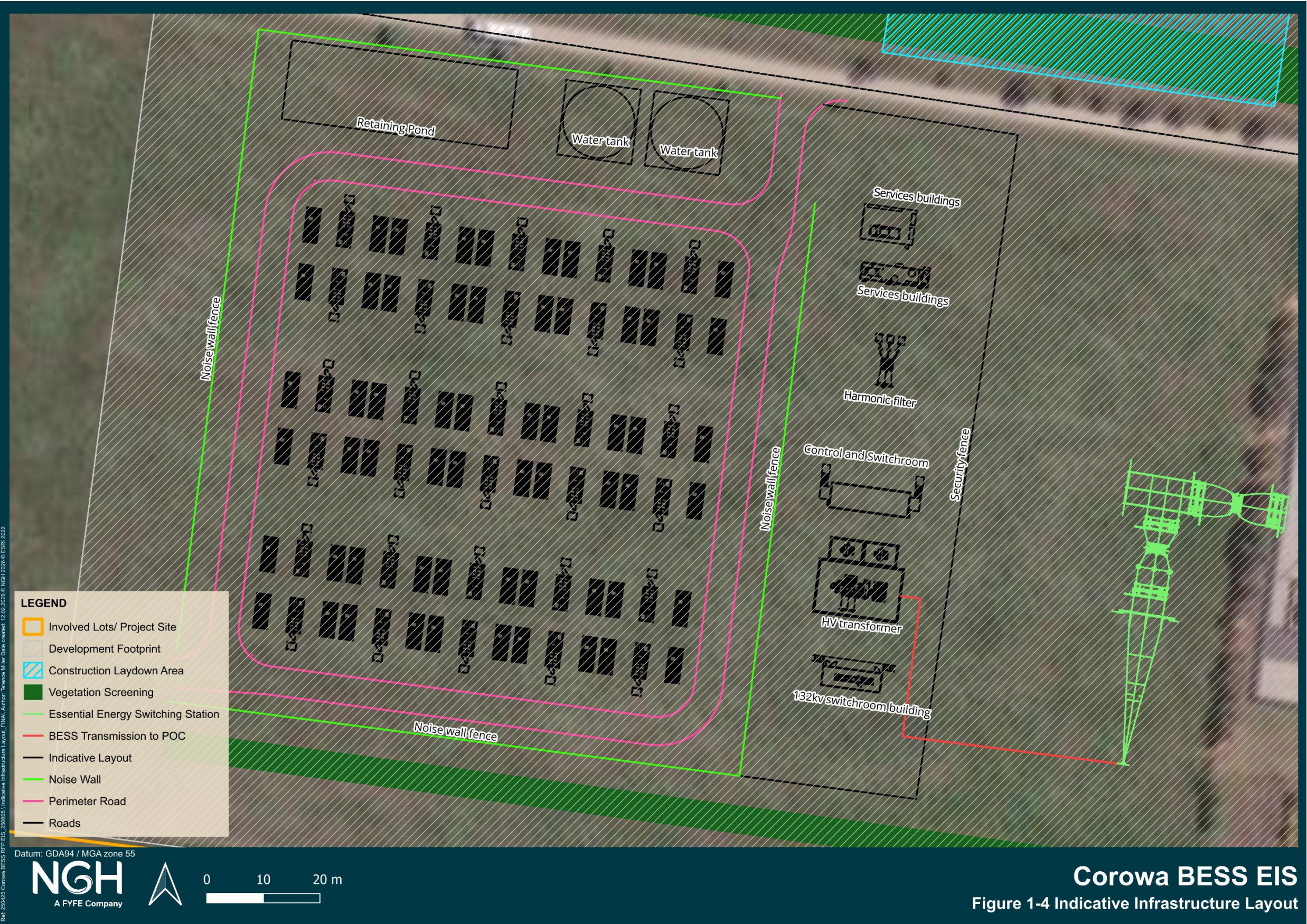


Figure 1-4 Indicative Infrastructure Layout; close up of the operational BESS area

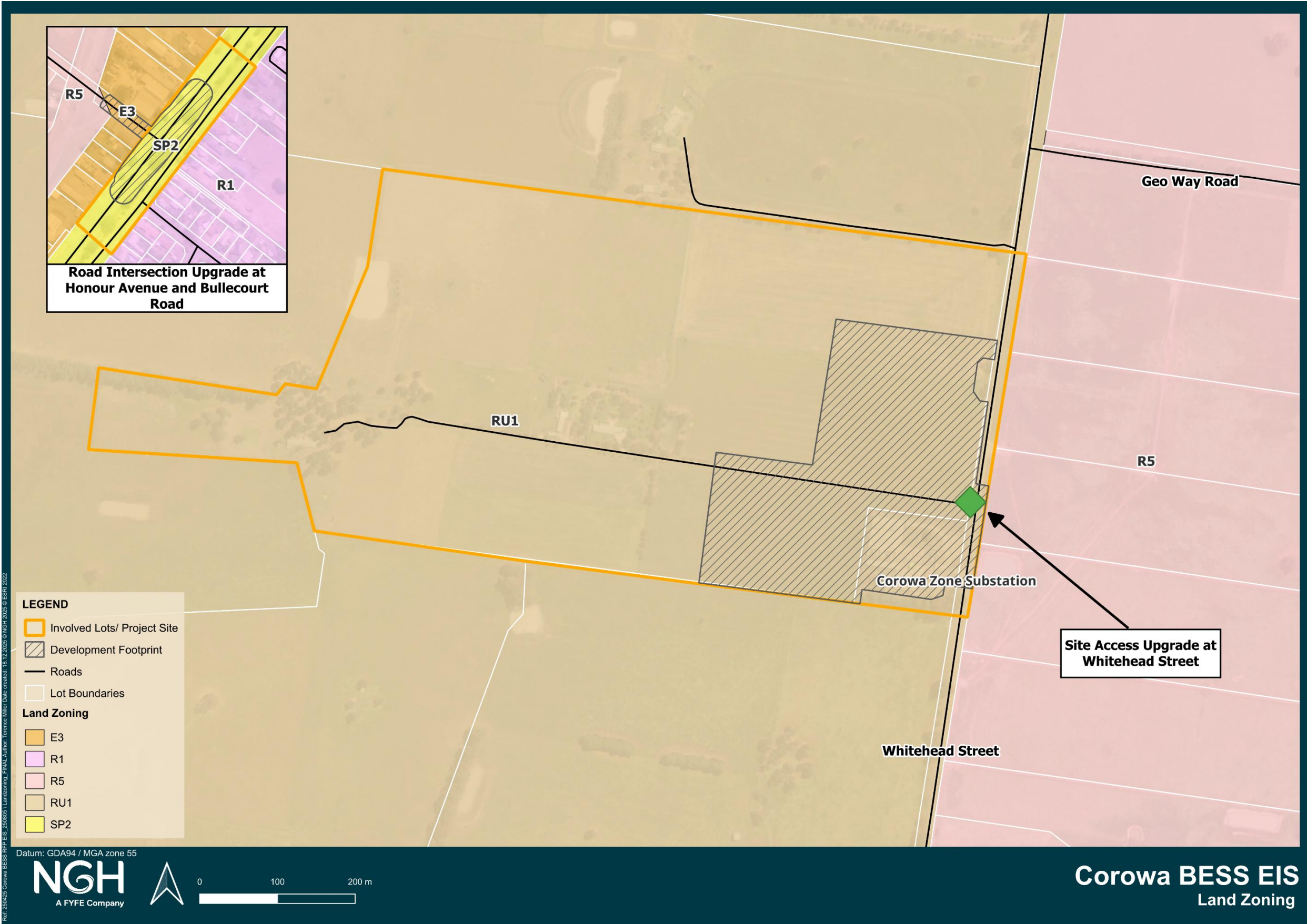


Figure 1-5 Land Zoning

1.6. Background to site selection and project design

1.6.1. Site selection

The location proposed for the Project was initially selected following a detailed desktop analysis of the region. This considered proximity to grid connection infrastructure, the transfer capacity of that infrastructure to connect to the broader network, as well as access for construction traffic. The site also needed to be located on freehold land with appropriate zoning, where the landowner was interested in entering into a long-term lease agreement to host Project infrastructure.

The Project Site, being located directly adjacent to the Corowa Zone Substation, allows for direct connection to existing infrastructure and has sufficient power transfer capacity to allow delivery of energy when it is required. The Corowa Zone Substation has one of the highest percentages of distributed solar generation exporting into the transmission network out of all Essential Energy distribution zone substations, driven by high levels of rooftop solar and the distribution-connected Corowa Solar Farm. A BESS is therefore highly suitable in this location and, when connected, would allow for storage of surplus renewable energy and would support the connection of future loads in the region.

Considering traffic access requirements, the Project Site is well connected to regional centres and the broader Australian road network, with access to the Hume Highway (M31), Australia's primary road freight haulage route between Melbourne and Sydney via the Riverina Highway (B58) (NSW), Federation Way (C375) and Murray Valley Highway (B400) (Victoria). Early consideration of haulage route options identified Melbourne ports as the most likely for larger infrastructure components and confirmed that minimal local road upgrades would be required.

The Project Site is located on freehold land with rural land zoning provisions. The land holder is amenable to a long-term lease agreement to host Project infrastructure.

1.6.2. Responsiveness to site constraints

The Project Site (the area of land that was investigated for the siting of the Project) was defined broadly to ensure the Project could be developed to be responsive to environmental and social constraints. The smaller Development Footprint (within which infrastructure would be located), has now been defined in response to the following key matters:

- Visual amenity - Early consultation with the community identified that several dwelling entitlements exist on the western side of Whitehead Street. These, and other local viewpoints, have all been assessed for visual impacts. While the results concluded that a low visual impact can be achieved without the need for visual impact mitigation, the Project includes a commitment to visual screen plantings and their maintenance, in order to further minimise views of the infrastructure and supplement existing plantings. This has been the key issue raised by the community and is considered an important Project commitment. Screening is shown on the Indicative Infrastructure Layout and has been considered by the bushfire assessment.
- Noise amenity – early noise modelling demonstrated that a noise wall would be required to ensure operational noise compliance at all non-associated receivers. This has been adopted by the Project and operational noise compliance is now predicted at all non-associated receivers. The location of

the noise wall is shown on the Indicative Infrastructure Layout and has been considered by the visual and bushfire assessments.

- Bushfire and fire safety – This has been a key issue raised by the local community. Design of Asset Protection Zones (APZs), water storage and containment has commenced, and communication has been sent to the RFS. In addressing the requirements for NSW RFS *Planning for Bush Fire Protection 2019* (PBP) (NSW RFS, 2019), the site and perimeter access, visual screening and the location of the noise wall have all been considered. Regarding management of water that would be used during firefighting, the Victorian Country Fire Authority's (CFA's) large-scale renewable facility *Design Guidelines and model requirements for Renewable Energy Facilities* (CFA, 2023) has been referenced. This is not an NSW RFS guideline, but this is the guideline that speaks to the risk of containing any contaminated water most appropriately.
- Biodiversity – limited native vegetation occurs within the Project site. Even so, the Project has identified 'no go' zones around key remnants / features of habitat value. These would be protected from any Project impacts. This is in keeping with the 'avoid and minimise' mandate of the Biodiversity Assessment Method and *Biodiversity Conservation Act 2016*. No biodiversity offset obligation is generated for the Project, as assessed in accordance with the NSW Biodiversity Offset Scheme.
- Grid connection – ongoing negotiations with Essential Energy to ensure suitable point of connection.

Otherwise, the environmental assessments have demonstrated the site has low constraints to the development of a BESS:

- Minor flooding risks can be managed by including a 500mm freeboard above the 1% AEP flood level. Modelling has confirmed that the Project does not exacerbate flooding.
- No Aboriginal cultural heritage values were identified within the assessment area, through site surveys and in consultation with the Aboriginal community representatives.
- No contamination was identified, from past agricultural or adjacent substation works.

1.7. Restrictions applicable to the project site

An Essential Energy 132kV transmission easement intersects the Project Site running parallel along the length of the southern boundary of Lot 12 DP1115583 where it connects to the Corowa Zone Substation (Lot 11 DP1115583).

There are no other restrictions that have been identified for the site.

02 Strategic Context



2. Strategic context

The context important to the development of this Project is set out in this chapter and includes the Project's:

- Regional and local environment, including nearby receivers and potential for cumulative impacts
- Alignment with federal and state energy policies and regional and local land use strategies.

In addition, this chapter sets out the proposed agreements required to facilitate the Project, consideration of alternatives and the overall Project benefits anticipated if the Project is approved.

2.1. Regional and local environmental values

2.1.1. Regional values

The Project is located within the Federation Council LGA, and situated in the Riverina Murray Region of NSW, with a population of 12,899 people as per the 2021 Census (Australian Bureau of Statistics, 2021). Most of the population is centralised around the regional centres of Corowa, Howlong, Mulwala, and Urana. The LGA is bordered to the east by the Greater Hume Shire, to the west by the Berrigan and Murrumbidgee LGAs and to the south by Indigo Shire Council (Victoria).

The twin cities of Albury-Wodonga, which straddle the NSW / Victorian border are located 56km east of Corowa and are the nearest major regional centres. Wangaratta, a large rural city in Victoria, is located approximately 61km to the south. Federation LGA is well connected via road to regional centres and cities via the Riverina Highway, Murray Valley Highway and Federation Way.

The Murray Valley National Park is located approximately 7.3km south of the Project Site.

The Project is located approximately 3km north from the Corowa town centre. The region is renowned as the 'food bowl' of Australia (DPE, 2023c). Corowa and its surrounding areas contribute the highest pork production and some of the highest grain production in NSW (DPE, 2023c). The region is characterised by agricultural lands and supporting townships. Other land uses in the wider area include the residential and industrial areas on the northern periphery of the Corowa township as well as tourism, small retail and renewable energy development. The Corowa Solar Farm (30 MW and unrelated to this Corowa BESS project) is now operational and located approximately 2.2 km to the south-west of the Project Site.

There are three items listed on the State Heritage Inventory for the town of Corowa, namely the Corowa Flour Mill and site (approx. 2.3km), Corowa Railway Station and yard group (approx. 2.8km), and the Corowa Courthouse (approx. 3.2km) all located south of the Project Site. There are 64 items listed under the Local Environmental Plan (LEP) within the town of Corowa, with the closest to the Project being the Corowa Hospital off Redlands Road, approximately 2.7km south of the Project Site.

Corowa is a stronghold for the Endangered frog – Sloane’s Froglet, which occurs only in two core populations (Corowa and Albury/Wodonga). There are Sloane’s Froglet records surrounding the Project site in all directions in: Whitehead wetlands, approximately 1km south, along Bullecourt Road, 1km southwest and 1km southeast, Geoway Road 1km northeast and Whitehead Road (3km north).

2.1.2. Project site values

The Project Site is currently used for agricultural purposes, with a single rural dwelling and farm infrastructure including several sheds, dams, water tanks, troughs, fencing and stockyards.

The Project Site is located adjacent to the existing Essential Energy Corowa Zone Substation (132/22kV) and associated 132kV and 22kV power lines. Essential Energy have been consulted regarding this project and how connection can be facilitated to the existing substation infrastructure.

There are no mapped water features within the Project Site such as dams, rivers or creeks, however, according to the Corowa, Howlong and Mulwala Flood Study, 2024 the Project Site is mapped as occurring within a flood prone area.

The site is mapped as Class 3 (high capability land). This is considered important agricultural land as it has moderate limitations and is capable of sustaining high impact land uses, such as cropping. It is partially mapped as State Strategic Agricultural Land (SSAL), a state data map set that reflects a policy developed to achieve balanced land use outcomes, specifically between mining, coal seam gas and agriculture.

There is limited native vegetation on the Project Site, which has been significantly transformed by historical agricultural and substation development activities. Remnant patches of native vegetation do remain, however and can be important ‘stepping stones’ for mobile species in fragmented landscapes. They include vegetation identified as meeting the criteria for the NSW *Biodiversity Conservation Act 2016* (BC Act) listed Threatened Ecological Community (TEC) known as *Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions*. Two threatened species were recorded during targeted surveys within the Project site:

- Large Bent-winged Bat (*Miniopterus orianae oceanensis*)
- Southern Myotis (*Myotis macropus*).

Nearby habitats, including wetlands and marshes, are known to contain the Endangered Sloane’s Froglet.

Planted vegetation also occurs in the substation lot.



Figure 2-1 View across the Project Site, specifically the area proposed for the establishment of the BESS and associated infrastructure



Figure 2-2 View looking east across the Project Site, towards the Corowa Substation

The Honour Avenue / Bullecourt Road intersection in Corowa, is also captured within the Project's Development Footprint because it requires an upgrade. It is located to the north of Corowa, within in

area supporting manufacturing and industrial, services, residential and farm infrastructure, perennial horticulture and grazing land uses. The vegetation in this area is planted.

The intersection is located approximately 350 m north-west of the Murray River and is located within an area mapped, in terms of the Corowa, Howlong and Mulwala Flood Study, 2024, as a flood-prone area.



Figure 2-3 Planted vegetation along Honour Avenue

Considering adjacent land uses, areas surrounding the Project Site are characterised by:

- To the north – generally cleared agricultural land with isolated rural dwellings
- To the east – cleared agricultural land as well as manufacturing, agricultural machinery sales and services, food processing, freight and transport facilities, the Corowa saleyards and Corowa water treatment plant adjoining Honour Avenue
- To the south – generally cleared agricultural land with isolated rural dwellings, as well as the Whitehead Street Wetlands
- To the west – generally cleared agricultural land with isolated rural dwellings.

2.1.3. Community profile and nearby receivers

Community profile

As at the 2021 Census, Corowa has a population of 5,595. The community shows limited cultural diversity, with 43.9% reporting English ancestry, and 43.4% reporting Australian ancestry. The median weekly household income of \$1,130 reflects moderate economic capacity and there is a high rate of home ownership across the 5,080 dwellings. Social facilities include cafes, pubs, restaurants and the

RSL, as well as the Corowa Aquatic Centre, several sporting ovals and sports clubs as well as the golf club and bowls club. There are a number of employment options within the social locality, with an estimated 59.1% of working residents commuting less than 10km to work. Key demographics as shown below.

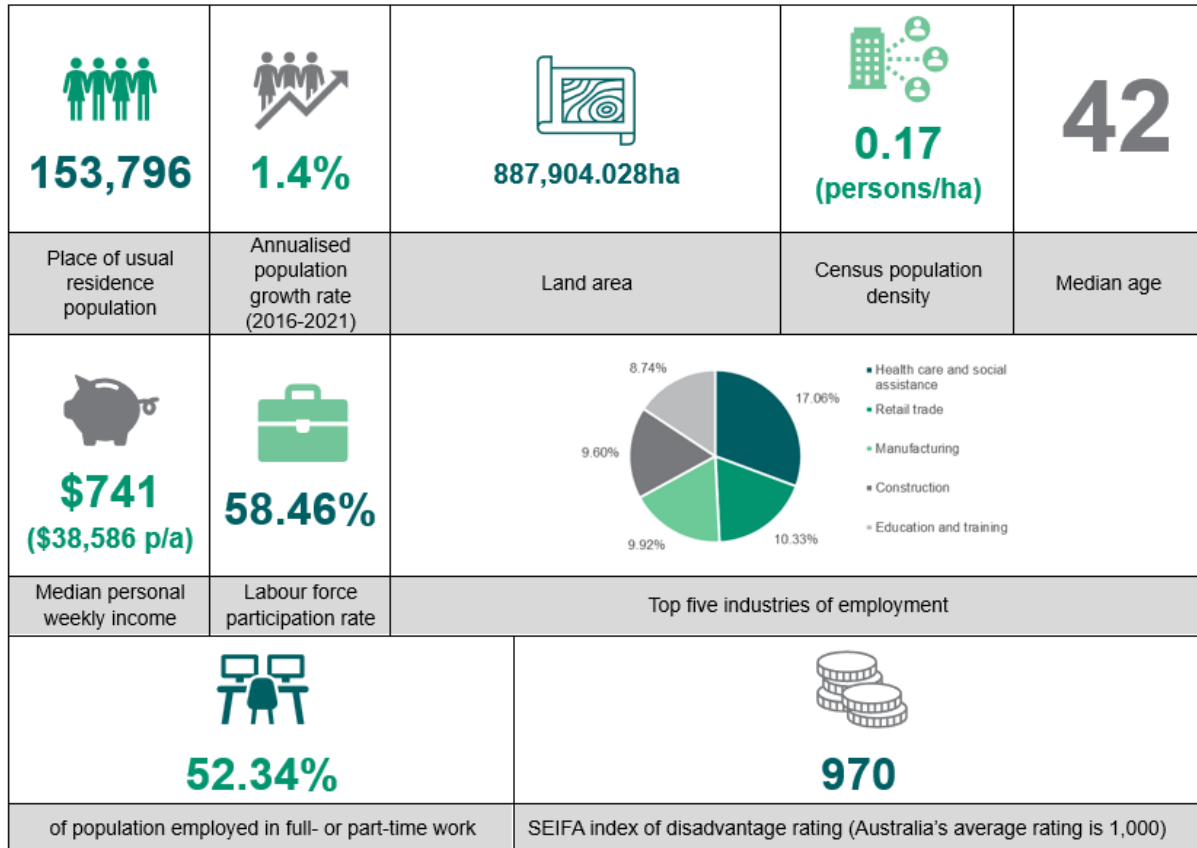


Figure 2-4 Key profile data for the social locality (Lecroma, 2025)

Nearby receivers

There is one associated receiver located within the Project Site, identified as R04, and eight non-associated receivers (dwellings) located within 1km of the Project Site (Table 2-1 and Figure 2-5).

Of note, to the east of Whitehead Street is an area zoned R5 – Large Lot Residential, which corresponds to an urban release area identified in the Corowa Local Environmental Plan (LEP) Urban Release Area Map. A nine-lot subdivision has been approved within this area (DA 10.2020.6.1). These lots are currently undeveloped and are used for livestock grazing (Figure 2-5).

Table 2-1 Associated and non-associated receivers located within 1km of the Project Site

Receiver ID	Receiver Category	Associated or non-associated	Address	Approximate distance to Project Site (m)
R01	Residential	Non-associated	91 Almond Lane, Corowa NSW 2646	750 (south-east)
R02	Residential	Non-associated	226 Whitehead Street, Corowa NSW 2646	420 (south)
R03	Residential	Non-associated	136 Bullecourt Road, Corowa NSW 2646	510 (south)
R04	Residential (Associated residence)	Associated	275 Whitehead Street, Corowa NSW 2646 (Project Site)	150 (west)
R05	Residential	Non-associated	309 Whitehead Street, Corowa NSW 2646	330 (north-west)
R06	Residential	Non-associated	345 Whitehead Street, Corowa NSW 2646	480 (north-west)
R07	Residential	Non-associated	373 Whitehead Street, Corowa NSW 2646	730 (north)
R08	Residential	Non-associated	361 Whitehead Street, Corowa NSW 2646	870 (north)
R09	Residential	Non-associated	214 Whitehead Street, Corowa NSW 2646	530 (south)
R10	Residential	Non-associated	242 Bullecourt Road, Corowa NSW 2646	1,050 (south-west)
R11	Residential	Non-associated	No listed address	1,230 (west)
R12	Residential	Non-associated	No listed address	1,868 (west)
R13	Residential	Non-associated	No listed address	1,530 (north)
R14	Residential	Non-associated	23 – 69 Almond Lane, Corowa NSW 2646	1,074 (south-east)
N01	Dwelling Entitlement	Non-associated	240 Whitehead Street, Corowa NSW 2646	310 (south-east)
N02	Dwelling Entitlement	Non-associated	248 Whitehead Street, Corowa NSW 2646	245 (south-east)
N03	Dwelling Entitlement	Non-associated	262 Whitehead Street, Corowa NSW 2646	216 (east)
N04	Dwelling Entitlement	Non-associated	276 Whitehead Street, Corowa NSW 2646	215 (east)

Receiver ID	Receiver Category	Associated or non-associated	Address	Approximate distance to Project Site (m)
N05	Dwelling Entitlement	Non-associated	286 Whitehead Street, Corowa NSW 2646	223 (east)
N06	Dwelling Entitlement	Non-associated	296 Whitehead Street, Corowa NSW 2646	280 (east)
N07	Dwelling Entitlement	Non-associated	306 Whitehead Street, Corowa NSW 2646	376 (east)

2.1.4. Key features mapping

The Project Site was defined broadly to ensure the Project could be developed to be responsive to environmental and social constraints. The smaller Development Footprint, within which infrastructure and Project activities would occur, has now been defined in response to the following key matters in Figure 2-6

- Existing transmission infrastructure
- Access
- Nearby receivers
- Native vegetation



Figure 2-5 Associated and non-associated receivers located within 1km of the Development Footprint, including dwelling entitlements

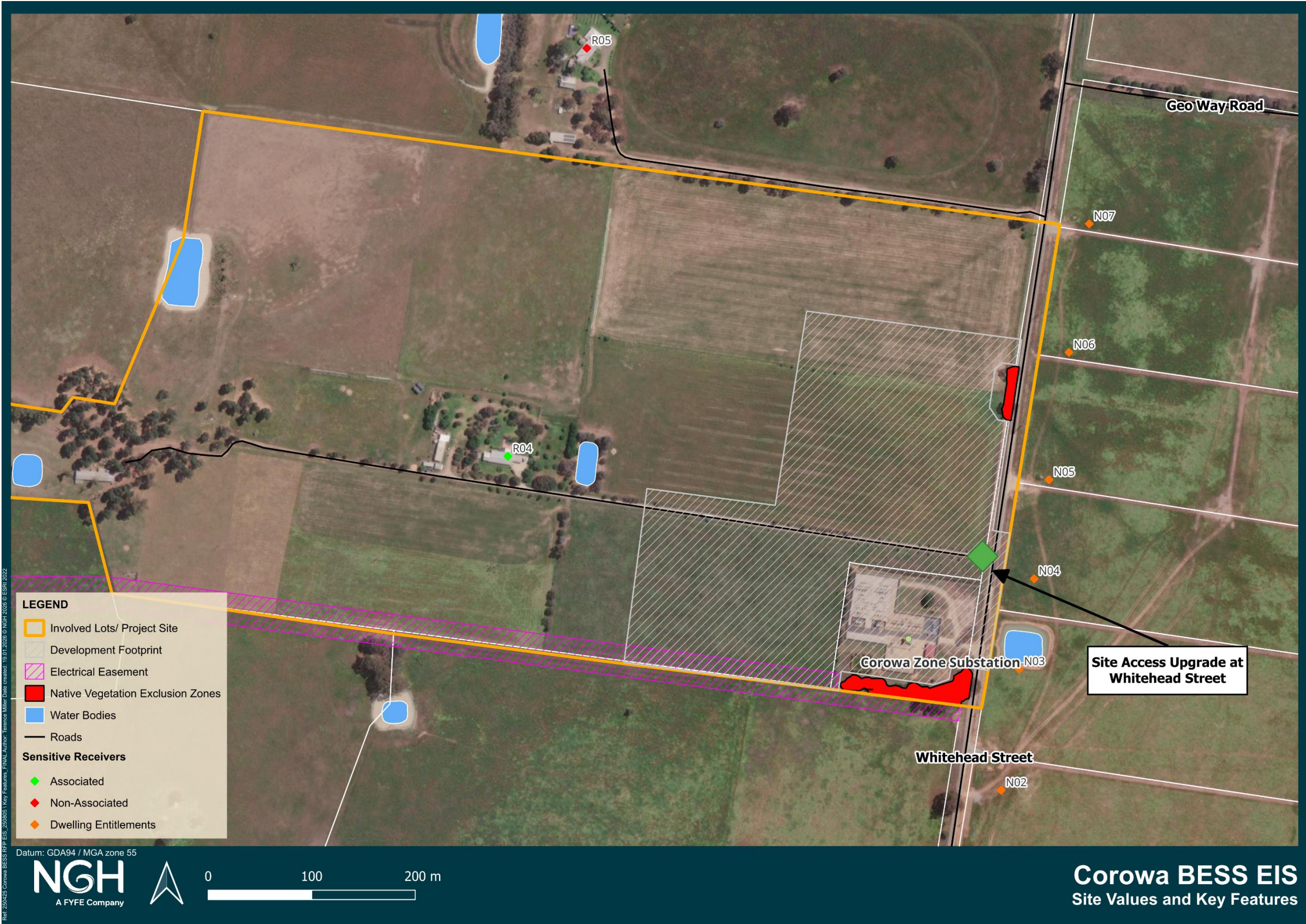


Figure 2-6 Site Values and Key Features

2.1.5. Cumulative impact considerations

Being located in a region with growing interest in renewables and storage projects, local cumulative impacts anticipated from nearby projects may include:

- Traffic impacts; where construction programs and routes overlap
- Social impacts; pressure on local facilities, goods and services and the local workforce, where construction programs overlap
- Visual and noise impacts; for nearby existing and proposed facilities
- Increased risks in relation to fire and contamination

The existing Corowa substation (Essential Energy) and the existing Corowa Solar Farm (Metlen Group) are most relevant to the cumulative impacts of the BESS Project. Both are operational. The solar farm is not visible or audible from the Project Site. Visual and noise assessments for the Project do however consider the additional contribution made by the Corowa substation.

The upgrades on Honour Avenue in Corowa may also generate cumulative impacts for other projects for the short-term temporary duration of these works. Once completed they will provide a benefit to the road network.

It is important to note that strategic cumulative benefits also accrue from the Project's alignment with federal and state regional renewable energy policies.

Cumulative impacts associated with the Project have been given consideration in Section 7.4 with reference to the *Cumulative Impact Assessment Guidelines for State Significant Projects* (DPE, 2022b).

2.2. Alignment with federal, state and regional energy policies

The Project is permissible and in alignment with several energy and land use planning policies and plans, as set out below.

2.2.1. Federal

Reduction plan 2021 and Nationally Determined Contribution (2022)

Australia's long term emissions reduction plan and the Nationally determined contribution to the UN via the Paris Agreement (developed during United Nations Framework Convention on Climate Change (UNFCCC) COP21) sets the nations goals towards zero emissions by 2050 and 43% below 2005 levels by 2030 (Department of Industry, Science, Energy and Resources, 2021). This was set to achieve the goal of avoiding a 1.5°C rise (from pre-industrial levels) in temperature by the end of the 21st century. The Project assists in this reduction through the storage of electricity which should be primarily sourced from renewables, not fossil under the forecasted energy transition.

There have been seven COP's since COP21. The latest outcomes from COP28 highlighted the need to triple global renewable energy capacity globally to meet the goals of the Paris agreement.

The Commonwealth *Climate Change Act 2022* enshrines into law an emissions reduction target of 43% from 2005 levels by 2030, and net zero emissions by 2050. In addition, the Act ensures a whole-of-government approach to drive towards the target. The government has formally lodged this target as an enhanced Nationally Determined Contribution under the Paris Agreement. The Act backs onto the Government's

Powering Australia plan, which is focused on creating jobs, cutting power bills and reducing emissions by boosting renewable energy.

The Project would form part of the Australian effort to help meet the above targets. The development of utility battery storage is an important contribution to:

- Providing for further reductions in Green House Gas (GHG) emission intensity for generation in the National Energy Market (NEM), by supporting renewable energy projects\Supporting the Government's Renewable Target (RET) of 20% renewable energy by 2020. While the Large-scale RET target was met in 2019/20, the scheme will continue to require high-energy users to meet their obligations under the policy until 2030.
- Enhancing the effectiveness and reliability of renewable energy sources by balancing supply and demand. BESS technology is therefore integral to the transition towards a more sustainable and resilient energy future and the achievement of Australia's Paris Agreement commitments.

2024 Integrated Systems Plan

Published every two years, the Integrated Systems Plan (ISP) details what, when, where, and how much electricity transmission, generation and storage is required in the NEM. This assists governments and industry to plan and invest to meet people's current and future energy needs.

The 2024 ISP was first introduced in December 2023 and released for comment in January 2024. The Plan confirms that urgent investment is needed in new renewable energy generation, transmission, storage and flexible gas generation to continue to deliver secure, reliable and affordable energy, and reach the renewable electricity generation targets of NEM jurisdictions.

The key messages from the draft plan include:

- Household and business electricity consumption from the grid is forecast to nearly double by 2050.
- With coal expected to retire faster than currently announced, the NEM is forecast to need a seven-fold increase in large-scale wind and solar generation by 2050. The 2024 ISP predicts a 90% (or 21GW) closure of all coal plants by 2030, a significant increase from the forecast two-thirds of coal plants (or 14GW) from the 2022 ISP.
- It also requires building close to 10,000 km of new transmission lines and upgrades to existing networks by 2050 to connect new generation across the power system.
- Delivering the transmission projects identified in this plan is expected to avoid \$17 billion in additional costs to consumers if those projects were not delivered.

The 2024 ISP sets out how the Australian Energy Market Operator (AEMO) has identified the optimal development path for the NEM and is a roadmap through the energy transition. The 2024 ISP shifts from the 2022 ISP, the adjustment being in response to economic, physical and policy environmental changes. The AEMO states that "there will be a demand for 82 GW of utility-scale wind and solar in the NEM by 2034-35, and 126 GW by 2049-50. 34GW of this energy would need to come from NSW".

In response to an accelerated timeline for the closure of coal fired energy plants, the optimal development path is Step Change. Step Change is predicted to be the lowest cost, resilient and pragmatic path to the NEM's energy future rather than Progressive Change which reflects slower economic growth and energy investment or Green Energy exports which is focused on strong industrial decarbonisation and low emission

energy exports. Under forecasts for the Step Change scenario (AEMO, 2023), the optimal development path requires investment that would:

- Triple grid scale variable renewable energy by 2030 and increase it seven-fold by 2050. Focus grid scale generation in REZs Almost quadruple the firming capacity using utility scale batteries, hydro and gas-powered generation Support a fourfold increase in rooftop solar capacity.
- Leverage system security services and operational approaches.

There is an earlier need for renewable energy with a need for 6GW of new renewable energy per year compared to 4GW in the 2022 ISP to replace the coal generation capacity that is existing faster and to meet the higher demand forecast compared to the 2022 ISP.

To achieve these targets, Australia's renewable energy generation will need to increase substantially. BESS technology is expected to play a crucial role in enhancing the effectiveness and reliability of renewable energy sources by balancing supply and demand. BESS technology is therefore integral to the transition towards a more sustainable and resilient energy future.

2.2.2. New South Wales State Government

NSW Climate Change (NET Zero Future) Act 2023

The NSW Climate Change (Net Zero Future) Act 2023 was assented on 11 December 2023. It aims to '*set objective for New South Wales to be more resilient to a changing climate; and to establish the Net Zero Commission to monitor, review and report on progress towards the 2030 and 2050 targets and the objective and to exercise other related functions*'.

The Act commits the NSW government to effective action on climate change to ensure a sustainable and fair future for the people, economy and environment of NSW. It legislates:

- Guiding principles for action to address climate change that consider the impacts, opportunities and need for action in NSW
- Emission reduction targets for NSW:
 - 50% reduction of 2005 levels by 2030
 - 70% reduction on 2005 levels by 2035
 - Net zero by 2050
- An object for NSW to be more resilient to a changing climate.
- Establishing an independent, expert Net Zero Commission to monitor, review, report on and advise on progress towards these targets (NSW Government, 2023).

This Act supports the Commonwealth governments' *Climate Change Act 2022*.

The Project supports the overall goals of the Act as it increases the resilience of the NEM by allowing renewable energy to be stored until demand requires it to be released to consumers. This is also beneficial in the event of power outages that may occur during extreme climate-related events, further bolstering the climate resilience of the NEM.

NSW Net Zero Plan

In March 2020, the NSW Government released the NSW Net Zero Plan. This plan sets out how the NSW Government will deliver on these objectives over the next decade. The Net Zero Priorities include to:

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

The Net Zero Plan Stage 1:2020-2030 is the foundation for NSW's action on climate change and goal to reach net zero emissions by 2050. The Project supports the Net Zero Plan by facilitating an increase in the supply of renewable energy to the NEM, which contributes to the target of achieving a net zero Australia.

NSW Electricity Infrastructure Roadmap 2020

The NSW Electricity Infrastructure Roadmap ('The Roadmap') aims to redefine NSW as a modern, global energy superpower by delivering the electricity infrastructure needed to support a modern prosperous economy (NSW DPIE, 2020). The roadmap sets out a plan to transition the electricity sector from the existing power sources that are coming to the end of their lives, to cleaner, cheaper and more reliable energy sources including wind, solar, batteries and pumped hydro.

The electricity sector in NSW would be underpinned by five foundational pillars outlined in The Roadmap:

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

The Roadmap reiterates the need to act now given four of the five coal fired power stations in NSW are anticipated to close within 15 years, starting with the Liddell power station that closed in 2023 and Eraring that is planned to close in 2027. These power stations provide, as of 2020 power mix generation, around three quarters of NSW's electricity supply and two thirds of the firm capacity needed during summer heat waves, and as they age, tend to fail more frequently resulting in reliability problems. The infrastructure needed to replace coal fired power stations has long lead times, further justifying the need for action to coordinate and unlock investment before they close.

The Corowa Battery Energy Storage System is justified due to its potential to contribute to pillars 1, 2 and 4 of the Roadmap, by providing reliable energy storage to the NEM.

NSW Transmission Infrastructure Strategy 2018

The NSW Transmission Infrastructure Strategy is the NSW Government's plan to unlock private sector investment in priority energy infrastructure projects, which can deliver least-cost energy to customers to 2040 and beyond (NSW Department of Planning and Environment, 2018). The strategy states that for every 20 projects looking to connect to the grid, only one can. This comes despite the fact that in October 2018 more than 20,000 megawatts of large-scale projects were progressing through the planning system,

representing more than \$27 billion in potential investment, mostly in regional NSW. The NSW Transmission Infrastructure Strategy sets a plan to facilitate private sector investment in energy projects throughout the state. The NSW Transmission Infrastructure Strategy sets out the following guiding principles:

- Supporting projects that may contribute to lowering energy bills
- Taking a technology neutral approach to energy generation projects
- Private sector led investment
- Regional economic growth and increased job opportunities
- Ongoing secure and reliable energy to power the NSW economy.

The strategy also outlines the aim to boost NSW connectivity through large-scale transmission connections with surrounding states and regional areas. This would be primarily spearheaded by upgrades and infrastructure in defined energy zones.

The Project would improve the reliability of electricity supply through periods of high demand, helping to facilitate lower-cost electricity which benefits consumers. The construction and operation of the Project diversify industry and would provide additional job opportunities in the region. The Project therefore aligns with the principles of the NSW Transmission Infrastructure Strategy.

NSW Electricity Strategy 2019

The three objectives of the NSW Government for the state's electricity system, as stated in the NSW Electricity Strategy (NSW DPIE, 2019), are reliability, affordability and sustainability.

The NSW Government's Electricity Strategy would:

- Improve the efficiency and competitiveness of the NSW electricity market by reducing risk, cost, Government caused delays and by encouraging investment in new price-reducing generation and energy saving technology.
- Prompt Government to act if there is a forecast breach of the Energy Security Target which private sector projects are unlikely to address. This should be done in a way that minimises costs to consumers and taxpayers and does not give rise to moral hazard risk.
- Ensure that there are appropriate powers available for Government to analyse and respond to electricity supply emergencies if they arise.

The strategy outlines the cheapest and most efficient way to develop a modern and complex energy system to replace coal-fired generators is to build a mix of low-cost renewables, gas-fired generators and other storage options, such as batteries and pumped hydro. The strategy also outlines the projected changing patterns of electricity usage, with more consumers and businesses utilising solar generation. It is noted that the peak supply of solar energy, during the middle of the day, does not align with peak demands, which continue into the evening. The implementation of electricity storage allows electricity prices to be managed for consumers, whilst aiding the NSW Government's plan for reliable and sustainable electricity supply for the future.

2.2.3. Local / regional policies and plans

Riverina Murray Regional Plan 2041

The Riverina Murray Regional Plan 2041 provides a framework for recent government priorities, and draws from the local strategic planning statements prepared by each council for their LGA. The key outcomes in the regional plan relevant to the Project are:

- Ensure the aims of the Biodiversity Conservation Act 2016 are considered early in the strategic planning and development process
- Support the transition to a net zero carbon emission State by 2050, including enabling the establishment of the South-West REZ
- Plan for the implications of climate change and the need for resilient and sustainable communities.

The Project aligns with the above key outcomes through:

- Site selection to avoid and minimise impact on native vegetation by siting of the BESS on low-quality exotic farming land
- Providing appropriate infrastructure to assist in firming and supporting the electricity grid
- Providing reliable energy storage and electricity grid distribution in times of high energy demand.

The Project specifically aligns with two of the planning objectives of the Regional Plan. These are objective 11 and objective 13 and is considered suitable development for the area.

- Objective 11: Community and places – Plan for integrated and resilient utility infrastructure

The Project aligns with the objectives through firming the grid which is already being partially fuelled by the operational Corowa Solar Farm providing a reliable electricity supply that will be readily available for the area.

- Objective 13: Economy – Support the transition to net zero by 2050.

As renewable electricity generation demand increases, so does the requirement for effective storage. The Project assists with the regions transition to net zero by 2050 through providing reliable energy storage and electricity grid distribution in times of high energy demand.

Corowa Local Environmental Plan 2012

‘Electricity generating works’ as defined by the Standard Instrument - Principal Local Environment Plan (2006) includes electricity storage.

The Project Site is zoned Primary Production (RU1) under the *Corowa Local Environmental Plan 2012* (Corowa LEP). The objectives of the zone are:

- To encourage sustainable primary industry production by maintain and enhancing the natural resource base
- To encourage diversity in primary industry enterprises and systems appropriate for the area
- To minimise the fragmentation and alienation of resource lands
- To minimise conflict between land uses within this zone and land uses within adjoining zones

It is the intent for the life of the Project to assist to firm the network as greater renewable energy generation replaces coal fired power plants reaching retirement. While the activity would have minor impacts on land available for primary production, the land would meet the second and third objectives as identified above; it

would allow for diversity in land use appropriate to the area and it would not fragment resource lands, being adjacent to the existing Essential Energy Corowa 132/ 22kV substation.

Development of electricity generating works is prohibited in land zoned RU1 under the Corowa LEP. However, the provisions of the State Environmental Planning Policy (Transport and Infrastructure) 2021 (TISEPP) prevail over the Corowa LEP, which states that development for the purpose of electricity generating works may be carried out by any person with consent on any land in a non-prescribed residential zone. RU1 is a non-prescribed residential zone, therefore, the Project is permissible with consent.

The Corowa LEP contains a number of additional local provisions relating to matters such as earthworks (Section 7.1), stormwater management (Section 7.3) and essential services (Section 7.9).

Further detail on the Project's statutory context and where specific provisions are addressed, are provided in Section 4.

Corowa Shire Development Control Plan 2013

The Corowa Shire Development Control Plan 2013 applies to land specifically within the Corowa Shire locality with the purposes of:

- Reflecting the objectives of the Environmental Planning and Assessment Act 1979 (EP&A Act)
- Assist in implementing the Corowa Shire Strategic Land Use Plan 2010 - 2030
- Assist in the administration of the Corowa Local Environmental Plan 2012
- Provide positive planning outcomes for development within the Corowa Shire

The Plan was prepared and operates in accordance with Section 74C of the EP&A Act and other relevant State Environmental Planning Policies (SEPPs). Where there is a conflict between a provision in the CDCP and an Environmental Planning Instrument (e.g. SEPP and/or LEP), the provisions of the Environmental Planning Instrument will prevail to the extent of that inconsistency.

Federation Council Local Strategic Planning Statement 2020 – 2040

Priority four of the Local Strategic Planning Statement relates to strengthening and diversifying the local economy. Future directions under the priority include ensuring ongoing opportunities and growth in the economic drivers of agriculture, tourism and industry. The Corowa BESS project (and associated firming of the local transmission network) aligns with a planning priority to strengthen the local economy through employment, manufacturing, transport and warehousing in the region.

2.3. Project agreements

2.3.1. Long term lease with host landholder

The Project currently has a land option (lease) agreement with the associated landholder. Pending Project approval, a long-term lease agreement would be entered into. No formal subdivision is required over the BESS site to enable this lease.

A subdivision is however proposed as part of this Project, over Lot 12 DP1115583, to create a new small land parcel adjacent to the Essential Energy Substation, to facilitate new grid connection infrastructure. The new land parcel created, along with the grid connection infrastructure would be gifted to Essential Energy.

2.3.2. Subdivision for EE assets

As part of this Project, Lot 12 DP1115583 would be subdivided to create a parcel of land (approximately 72m x 50m) adjacent to the Corowa Zone Substation to facilitate extension of the substation for connection of the Project. This parcel of land, and any connecting works within it, would become the property of Essential Energy in operation. The subdivision area is considered indicative and will be informed by detailed design, post approval. It would be administered by the Federation Council and NSW Land Registry Services.

2.3.3. Benefit sharing initiatives

The Applicant has worked with local stakeholders and Federation Council to develop and co-design Community Benefit Sharing Initiatives. These include a Neighbour Benefit Offer Program valued at up to \$250,000 for residents within 1km of the Project Site, and a proposed \$800,000 Community Enhancement Fund, which will exceed NSW government recommendations of \$600,000 in total.

The proposed contributions will exceed the *Benefit Sharing Guideline* – Guidance for large-scale renewable energy projects (DPHI, Benefit Sharing Guideline - Guidance for large-scale renewable energy Projects, 2024). The Project direct contributions would total up to \$1,050,000.

The Community Enhancement Fund is valued at \$800,000 and comprises:

- A Voluntary Planning Agreement with Council in which Council will implement the agreed benefits in consultation with the Applicant
- A Community Enhancement Fund run by the Applicant.

The Neighbour Benefit Sharing Program will be implemented in addition to the Community Enhancement Fund, and includes:

- Construction payments to neighbours
- Annual payments to neighbours.

2.4. Consideration of alternatives

In considering the development of this energy storage project in the local area, feasible alternatives that were considered included alternative locations, layouts, scale as well as the consequences of not developing the Project (opportunity costs).

2.4.1. Alternative site locations

The Applicant undertook a detailed site selection process which included rating potential site alternatives based on key selection criteria including environmental, social and technical parameters. A primary criterion in the selection of a site for the BESS was proximity to grid connection infrastructure with sufficient power transfer capacity to allow delivery of energy when required.

BESS projects help to absorb surplus renewable generation and dispatch the energy when demand (and therefore the energy price) is peaking in the evenings and mornings. The Corowa Zone Substation has one of the highest percentages of distributed solar generation exporting into the transmission network out of all Essential Energy distribution zone substations, driven by high levels of rooftop solar and the distribution-connected Corowa Solar Farm.

A BESS is therefore highly suitable for this location and, when connected, would allow for storage of this surplus renewable energy and would support connection of future load in the region. Construction of the BESS in close proximity to the existing substation will, additionally, have the benefit of containing the impacts of the Project; collocating it adjacent to an existing industrial facility.

Access for construction traffic was a secondary consideration. the Project Site is well connected to regional centres and the broader Australian road network, with access to the Hume Highway (M31), Australia's primary road freight haulage route between Melbourne and Sydney via the Riverina Highway (B58) (NSW), Federation Way (C375) and Murray Valley Highway (B400) (Victoria).

Environmental and amenity factors were also considered for each location. Alternative sites were discounted on the basis of:

- Environmental sensitivities / impacts
- Increased extent of connection infrastructure between the BESS and the substation.

The Project Site was selected based on the provision of an optimal combination of:

- Proximity to a grid connection, being the existing Corowa 132kV Substation, located adjacent the site
- Sufficient levels of available capacity in the grid distribution system
- Suitable site access, with minimum road upgrade requirements
- Suitable planning context (RU1 zoned land and compatible local provisions)
- Low potential to significantly affect nearby receivers, such as noise and visual impacts
- Low potential to significantly impact biodiversity and heritage values
- Low potential for significant land use conflicts.

2.4.2. Alternative Project layouts

The Indicative Infrastructure Layout has been developed to be responsive to the site's key environmental features (refer to Figure 2-5). These include:

- Residential receivers (building in adequate setbacks, including visual screening and a noise wall)
- Hollow bearing trees and woodland remnants
- Existing electricity easement to the south of the host lot.

The construction compound location was selected based on available land and feedback from neighbours.

Through preliminary site investigation and specialist assessment, design alternatives, and community engagement and feedback, the location for the siting of the BESS infrastructure was shifted from a location immediately adjacent to Whitehead Street to behind the existing Essential Energy Substation to provide additional screening from the east and the overall Development Footprint has been reduced.

While the layout presented in this EIS (Figure 3-1) and described in Section 3, remains indicative, and will be finalized in detailed design post-approval, the Development Footprint that would be consented allows sufficient room for this optimisation process and provides certainty regarding the protection of key site values.

2.4.3. Alternative BESS technologies

The most suitable battery technology for the Project, to meet capacity and other requirements, is still being determined. The preferred option under consideration at present consists of Lithium Iron Phosphate (LFP)

batteries in the form of containerised or otherwise enclosed battery arrangements. The typology and layout of the battery energy storage units will, however, be confirmed during the detailed design process.

While other battery technology exists, LFP battery technology is currently selected as the preferred option based on the following criteria:

- Minimal risk of thermal runaway
- Safety, fire management and containment
- Ability to support the network to increase renewable energy penetration
- Ability to provide energy during periods of peak demands
- Minimal environmental impact
- Safety and ease of integration
- Demonstration and maturity of technology
- Value for money.

2.4.4. Scale of the project

The scale of the Project has been determined based on consideration of the following factors:

- A desire to provide more secure energy for times of need and supporting Commonwealth and State level efforts to mitigate the effect of climate change
- A need to ensure that the Project is commercially viable
- The transfer capacity of the electricity grid from this location to the broader transmission network
- The environmental and social constraints identified during the preparation of this EIS.

The Project as presented provides a viable balance between these factors.

2.4.5. The 'do nothing' option

The 'do nothing' option would involve *not* constructing and operating the BESS as proposed. This alternative must be considered as it represents the opportunity cost of developing the Project and it ensures that the impacts are warranted in consideration of the Project's benefits.

The 'do nothing' option would avoid the potential adverse impacts identified in this EIS, including removing land from agricultural production, generating additional amenity impacts and risks to the environment from clearing, soil disturbance and hazards related to construction and operation of the facility.

However, the potential benefits of the Project (as outlined in Section 2.5) would not be realised. Specifically, these include opportunity to provide storage capacity to the electrical distribution network, to enable the continued growth and expansion of renewable energy within Australia and the region's energy supply system. Doing nothing would, additionally, fail to support the management of variable and peak demands on the NEM, therefore failing to enhance grid reliability and security, resulting in increased risks of blackouts and loadshedding. The Project's effect to drive down the wholesale electricity prices for energy consumers and the local employment and economic stimulus would not be realised.

This Project has been developed to address the specific planning, environmental and social context. Mitigation strategies form part of the project and ensure that environmental and social impacts and risks are low and manageable. This is detailed in Sections 6 & 7 of this EIS. The benefits of the Project are therefore considered to outweigh the potential impacts, which are deemed manageable and acceptable.

2.5. Project benefits summary

In consideration of the alternatives examined above, the Project as presented in this EIS would:

- Build on the aims of the NSW Electricity Infrastructure Roadmap to transition away from coal-fired energy, towards greater levels of renewable energy within the grid.
- Assist to stabilise and secure the supply of electricity for residents, business owners and service providers. It is estimated that the Project would have the capacity to power approximately 112,400 households for a 2-hour period during a full discharge (assuming 21.355kWh/day usage) (AER, 2023).
- Assist to drive down the wholesale electricity prices for energy consumers.
- Generate local employment, economic stimulus and other local economic benefits.

Additionally, the Applicant has worked with local stakeholders and Federation Council to develop and co-design Community Benefit Sharing Initiatives. These include a Neighbour Benefit Offer Program valued at up to \$250,000 for residents within 1 km of the project site, and a proposed \$800,000 Community Enhancement Fund, which will exceed NSW government recommendations of \$600,000 in total).

03 Project Description



3. Project description

3.1. Project overview

The Project comprises the construction, operation and decommissioning of a Battery Energy Storage System (BESS) facility that would store electricity from the grid and release it during periods of high demand. Key features of the Project are summarised in Table 3-1.

Table 3-1 Summary of the key features of the Corowa BESS Project

Feature	Description
Street address	275 Whitehead Street, Corowa NSW, 2646
Development Footprint	10.34ha
Subdivisions and agreements	Long term lease with host landholder Small subdivision for Essential Energy connection assets
Estimated Development Cost (EDC)	\$140,298,606
Battery Energy Storage System (BESS)	100MW / 200MWh (2-hours) storage capacity Battery storage units comprised of Lithium Iron Phosphate (LFP) cells ⁴ and enclosed in 60 containers (up to 5,000 cells per container)
Substation and switchyard	Switch room, power inverters, High Voltage (HV) transformers and HV switchgear 30 x Medium Voltage Power Station (MVPS) that include Power Conversion Systems (PCS) Harmonic filter
Transmission line connections	Above ground, below ground (or a combination of both) transmission connection from the proposed BESS to the neighbouring existing 132 / 22 kV Essential Energy Corowa Substation site
Existing Essential Energy Substation	Extension and connection works as required to connect the BESS to the grid

⁴ Preferred option at this time.

Feature	Description
Permanent ancillary infrastructure	Operation and maintenance facility including site office A Battery Management System to monitor individual battery cell health and integrated fire monitoring and control systems Internal vehicle access tracks and parking Security fencing, lighting, signage and lightning protection Water tanks Parking / garage
Site access and intersection upgrades	The site access off Whitehead Street will require upgrade. The intersection at Honour Avenue / Bullecourt Road will be upgraded.
Temporary works areas	Construction compound and laydown areas, temporary vehicle access tracks and parking.
Environmental management provisions	Screening vegetation A noise wall and amenity (solid) screening fence.
Employment	Construction phase: 117 Full time equivalent Operation: 1.5 FTE staff (0 onsite as the BESS will be operated entirely remotely)
Phases / staging	The Project will include site establishment, construction, operation, and decommissioning phases. The Project may be staged to separate access upgrades, substation and switch yard from main BESS site works.
Construction timing and hours	Construction occurring over 18 months Monday – Friday: 7am – 6pm; Saturday: 8am – 1pm; Sundays and public holidays: no work
Operational lifespan and hours	Expected operational lifespan of 20 years; 24 hours/day
Decommissioning and rehabilitation	When that lifespan is reached, an upgrade of the BESS could be undertaken and consequently either request an extension or lodge a new DA with a more current technology. If the site is not repowered at the end of its useful life, then it would be decommissioned.

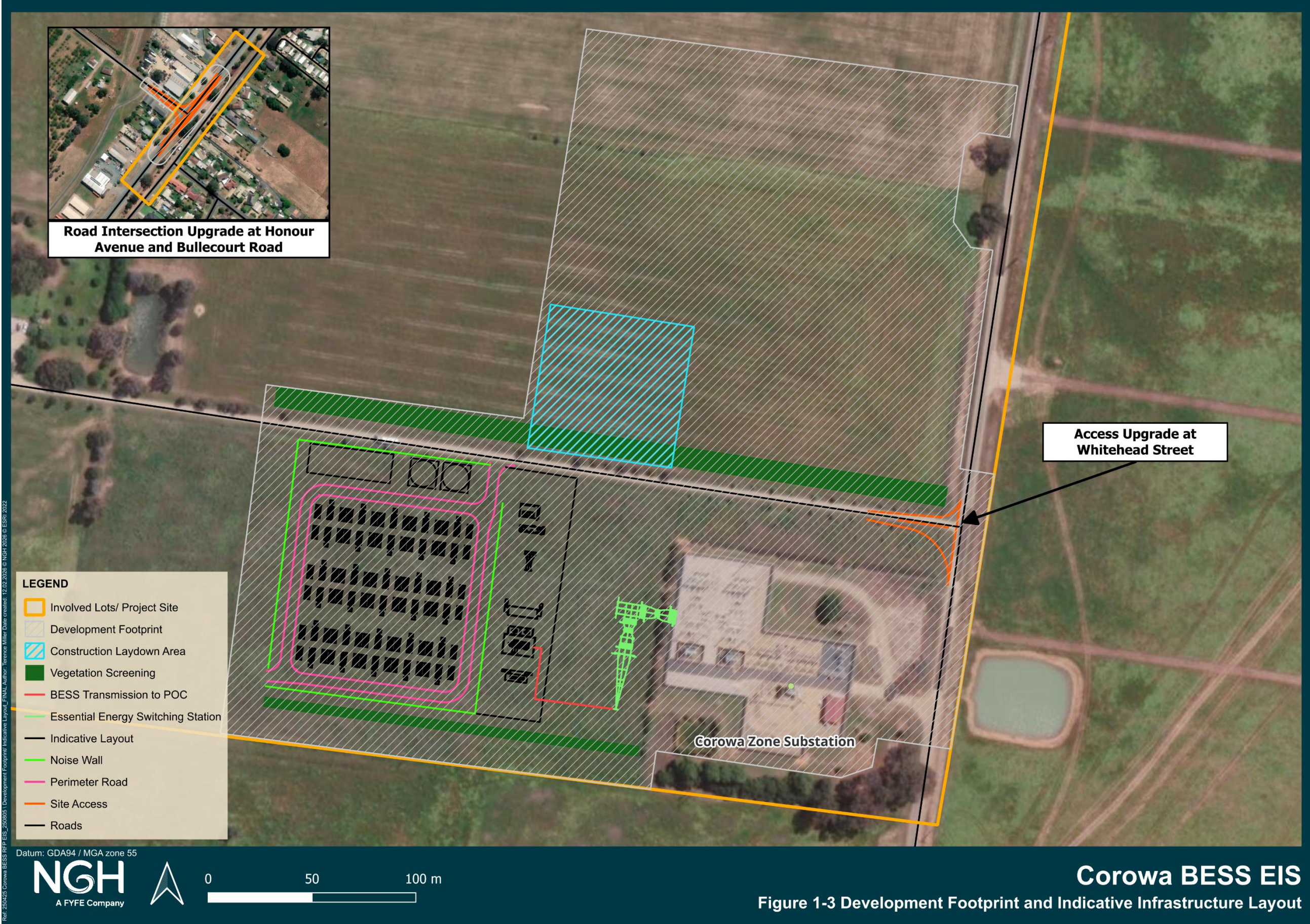


Figure 3-1 Corowa BESS Development Footprint and indicative infrastructure layout

3.2. Detail versus flexibility

A degree of flexibility is built into the description of the Project and the impact assessment approach in this EIS. The Applicant is seeking consent for a Development Footprint, within which all Project infrastructure and activities would be contained. However, at this stage the infrastructure layout and components shown within it are indicative. The Indicative Layout provided in Figure 3-1 would be subject to minor changes and refinements during detailed design phase.

During the detailed design phase, the final design and component selection would be subject to the evaluation of available technology and procurement processes. This would ensure the Project is viable and optimised in terms of constructability and efficiency, within the parameters of the approval. Submission of the final detailed design to DPHI *after approval but prior to construction* is a standard feature of approved State Significant Development consent conditions. This provides the final check that the detailed design is generally in accordance with the Project as described and assessed in this EIS.

Therefore, the infrastructure component parameters, material quantities and other Project details set out below aim to accommodate some flexibility, post approval. This approach is consistent with the State significant development guidelines – preparing an environmental impact statement (DPHI, 2022) which states:

... with some large, complex projects this flexibility is often essential as it is difficult, if not impossible, to deal with all aspects of the design of these projects at the EIS stage.

An ‘upper limit’ or ‘worst case’ approach has been used when considering the likely environmental impacts of the Project in the environmental assessment, (Sections 6 and 7), to address this uncertainty.

3.3. Key infrastructure components

3.3.1. Batteries and inverters

Batteries would be containerised and typically resemble 20-foot or 40-foot shipping containers. These contain Lithium Iron Phosphate (LFP) battery cells and associated facilities such as fire suppression systems, cooling, communications, and battery cell monitoring.

Medium Voltage Power Stations typically resemble 20-foot shipping containers. Each contains a central bidirectional storage inverter (or, power conversion system (PCS), a step-up transformer, switchgear and associated auxiliary systems. These will be installed adjacent to the battery containers, to convert DC to AC and transform up to medium voltage (11-33kV).

The height of these units is generally 2-5 m in height (excepting of any overhead transmission lines and lightning masts).

The assessment of BESS hazards assumes a specific configuration and minimum separation distances, as shown below.

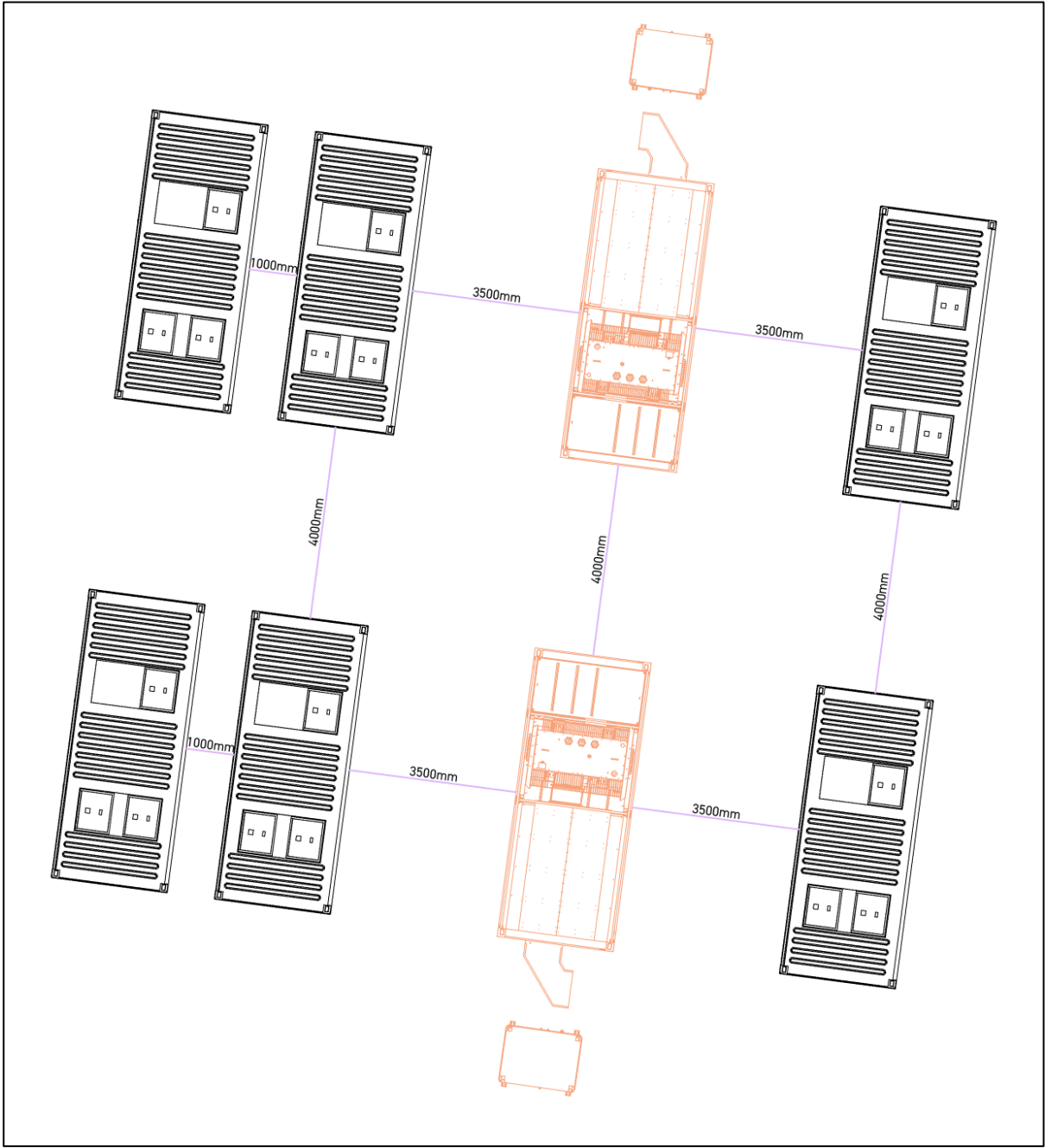


Figure 3-2 BESS container distances within Development Footprint

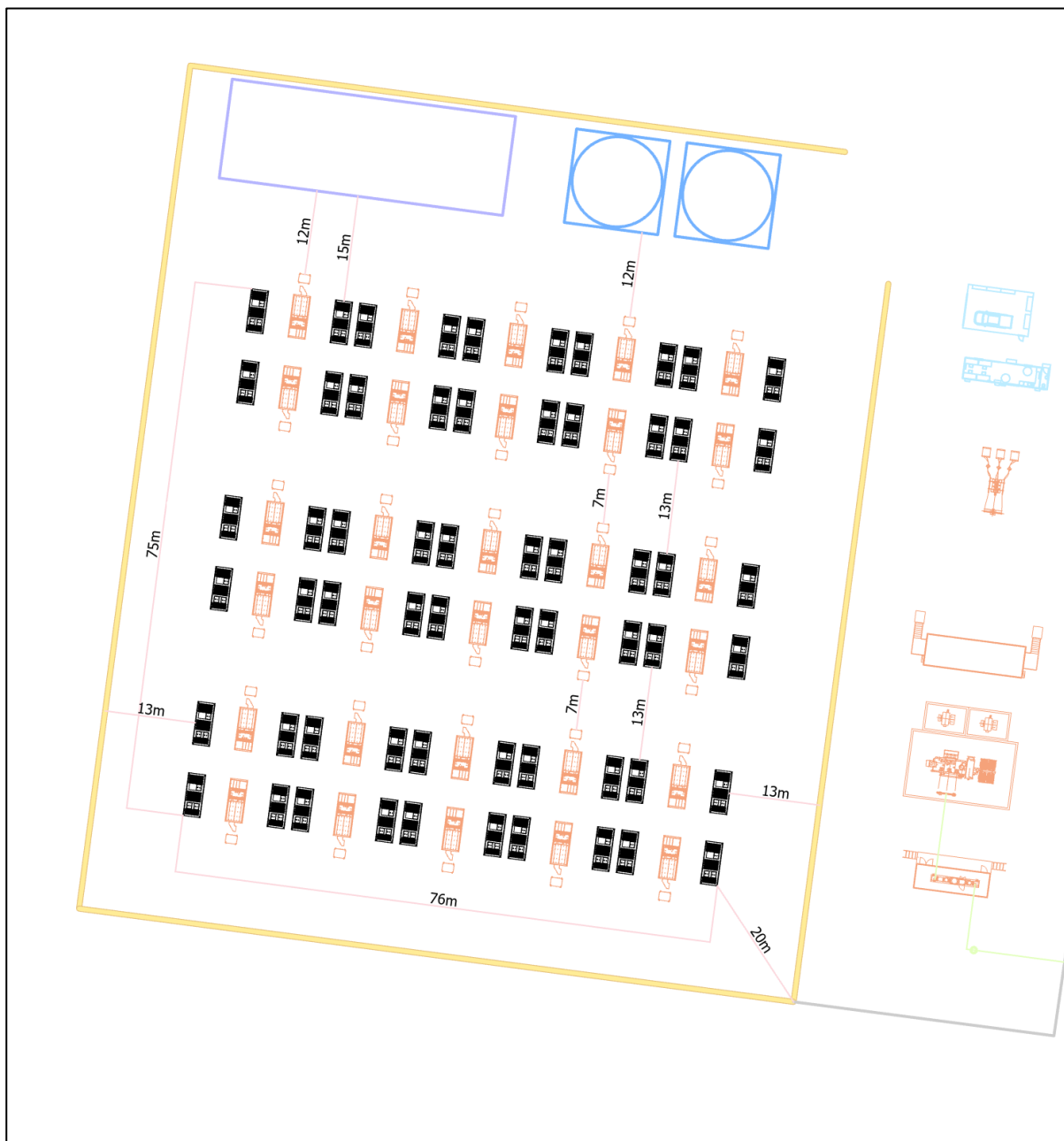


Figure 3-3 Overview of BESS and Medium Voltage Power Station (MVPS) indicative infrastructure layout

3.3.2. Substation, switch room and control building

The BESS will require its own substation, generally comprised of a high voltage switchyard, one or more large transformers, 33kV switch room, auxiliary services equipment, any required power quality components (e.g. harmonic filters, capacitors, etc).

The substation would be built on a specialized hardstand area called a bench; this is surrounded by security fencing as required by the relevant electrical safety regulations.

A 33kV switch room would collect all the individual medium-voltage cables from the MVPS units in one location before connection to the high-voltage (132kV) transformer.

One or more large transformers would be installed in large concrete bunds. These bunds are designed to retain the contents of the transformer and cooling system (insulating oil) in the event of failure. An oil water separator is likely to be installed in the bund as an environmental protection measure and would be subject to regular inspection and maintenance.

Figure 3-4 provides an indicative switching room schematic.

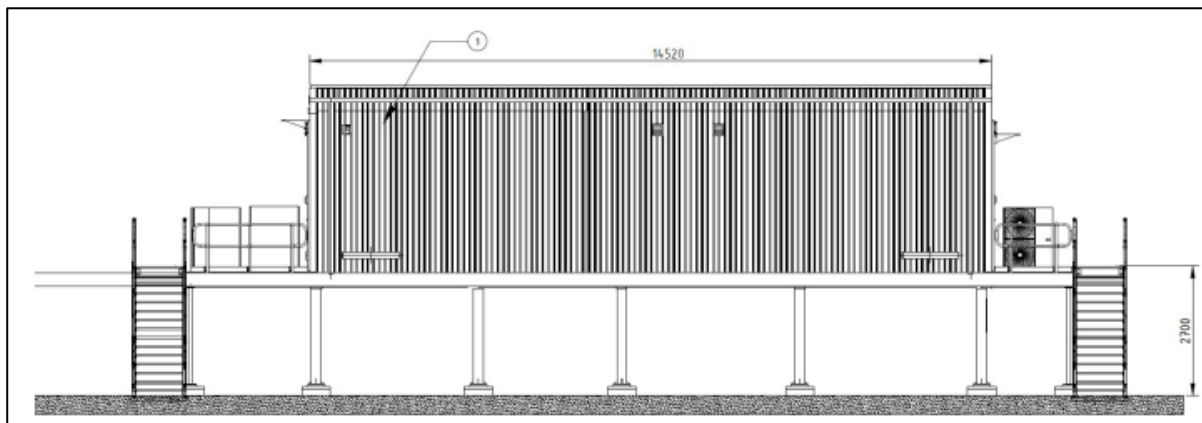


Figure 3-4 Example of switch room elevation

3.3.3. Electricity transmission

Underground cabling would be required throughout the BESS facility. It would be required for, but not limited to:

- Connection of battery units to each PCS via DC cabling
- A 33 kV reticulation system will link the transformers to the BESS substation via the switch room
- Provision of auxiliary power, data services, and communication facilities.

Underground cabling on the site would be designed in accordance with Australian and International Standards, and the cable routes would be designed to minimise ground disturbance. The cables would be installed in trenches at a depth that adheres to Australian Standards for the design and specification of each cable, which may also be protected by conduits. Copper conductors and an underground earthing mesh grid would be used wherever necessary to electrically bond the metal structures to earth to protect personnel and equipment in the event of lightning strikes and electrical faults.

Electrical connection from the BESS to the existing Essential Energy Corowa Substation would be via an approximately 200m, 132 kV transmission cable. It is expected that most of the connection would be underground with some sections overhead, nearer to the Corowa Substation. Both above and below ground options are assessed as part of this DA and EIS.

The existing Corowa Substation would require some minor extension works to accommodate the BESS infrastructure. The new feeder connection to the existing Corowa Substation is expected to comprise a single dedicated feeder bay and suitable transmission cable to which the required throughout meets Essential Energy standards.

To support the Corowa BESS, Essential Energy works may require (but not limited to):

- Preparation of a new 132kV bay to facilitate the integration of the BESS with the substation infrastructure, including 132kV high-voltage switchgear
- Installation of associated secondary high-voltage equipment required for the selected connection option, ensuring compliance with Essential Energy's technical and operational standards.
- Execution of any necessary civil works to support the bay construction or modification, including foundation works, trenching, and structural reinforcements as required.

The connection works and any required reconfiguration of the Essential Energy Substation would be subject to detailed design in consultation with Essential Energy. For this reason, the Development Footprint captures the majority of the Essential Energy Substation lot, to allow for flexibility.

3.4. Ancillary works

In addition to the key infrastructure components, additional supporting works will be required:

- Operation and Maintenance (O&M) facility
- A noise wall to contain noise emissions for nearest neighbours
- Landscape plantings to minimise views of the infrastructure from key locations
- Security and risk management measures, to protect assets and ensure public safety.

3.4.1. Operation and maintenance buildings

The Operation and Maintenance (O&M) facility would house the service team providing them with office facilities and amenities. These include parking areas (for site team, contractors, and visitors), stores warehouse, waste skips, and trailer parking area. A workshop area may be required to perform maintenance and repairs on equipment and BESS components, while the storage container/building would be used to store spare items, equipment and materials.

The O&M facility would require power and water supply as well as communications. There would likely be one primary O&M facility, where the site service team would be based during the operational life of the Project.

Amenities on site would need to be managed through an on-site sewerage system (e.g. septic, composting or other appropriate system). The system would be designed by an appropriate service provider and installed in accordance with local requirements. Electricity on site would be supplied from the local electricity network (Essential Energy). An example of the O&M buildings design is shown in Figure 3-5.

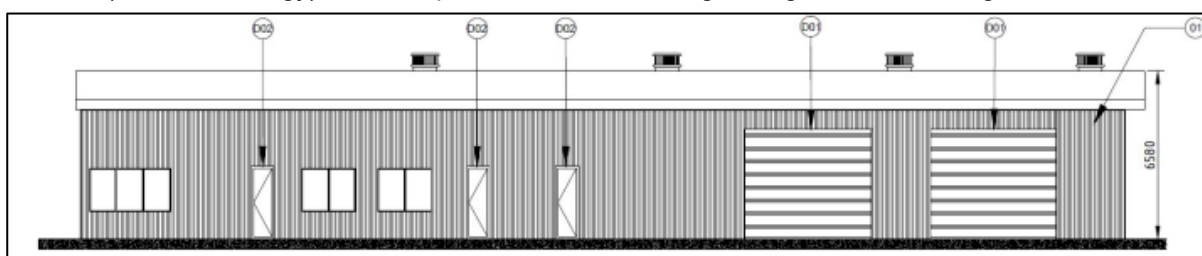


Figure 3-5 Operations and maintenance facility schematic

3.4.2. Noise wall

Permanent acoustic barriers would be installed to mitigate the operational noise impacts on surrounding non-associated residential receivers. The barriers are proposed around the BESS and inverter containers with a height of approximately 3.5 meters.

Detailed design and modelling will confirm the final length, height, specification and colour of the acoustic barriers to meet the Project noise level criteria. The barrier would be located and constructed in consideration of firefighting provisions and visual amenity.

3.4.3. Landscaping

A dedicated native vegetation buffer would be established where indicated on the site layout (Figure 1-3). The objective of this landscaping would be to reduce and soften the visual impact of the site from Whitehead Street and nearby residential receivers.

3.4.4. Security measures

Fencing:

- The onsite substation area would be enclosed by a security fence in accordance with applicable Australian Standards. This is expected to be a steel chain link security fence approximately 3m high, topped with three rows of barbed wire. Access would be via security access gates.
- The BESS facility itself would also be enclosed by a security fence in accordance with applicable Australian Standards. The noise wall will replace the security fence in places, around the BESS.

Cameras:

- The CCTV cameras would be mounted on up to approximately 5m poles complete with sensors or infrared security lighting, which would be installed at the access road/gate, the control room and transformer/switchyard.
- A security company would be contracted for monitoring outside of business hours.

Lighting:

- There would be no permanent night lighting within the BESS area. Lighting would be included in each inverter for night-time maintenance or emergency purposes only. Motion sensor or infrared security lighting would be installed at sensitive boundary locations and around the substation, battery storage facility, O&M facilities, and office areas.
- All external operational lighting would be designed to reduce disturbance to neighbouring properties, as such it would be low intensity lighting (except where required for safety or emergency purposes) and would not shine above the horizontal.
- The external operational lighting would be used only when there are staff on site, as part of night works (where required), site security or during emergency situations including through remote operation to allow improved camera visibility. External lighting would be installed to comply with relevant standards.

3.4.5. Risk management provisions

Under normal conditions, the Corowa BESS will operate remotely, without the need for an operational workforce. As such, it will incorporate management systems and procedures to monitor for faults and address risks such as fire. These will include:

- Battery Management System (BMS) – to monitor the operational and fault status of the system for all parameters required to enable the safe operation of the batteries, including State of Charge (SOC), voltage, current, power limits, and temperatures. Parameters are monitored at the appropriate level of battery cell, module and rack as applicable.
- Thermal Management System (TMS) – Design and operational measures will address specific thermal regulation of the battery.
- Fire Suppression System (FSS) – a built-in fire detection system (and potentially a built-in suppression system) is proposed.
- A Thermal Management System (TMS) – The Project design and operational procedures will follow specific thermal regulation measures to manage and mitigate fire risk as identified in different BESS OEMs meeting specific measures and requirements.
- Contaminated Water Management System – this will contain any water run off that may be contaminated, such as during the unlikely event of a BESS fire event. In such a case, the water used for cooling / to prevent the spread of fire may become contaminated with potentially hazardous substances. To avoid their mobilising into the environment, containment systems⁵ would be implemented. The detail would be addressed within a Fire Management Plan, prepared in accordance with the Victorian Country Fire Authority's (CFA's) *Design Guidelines and Model Requirements for Renewable Energy Facilities* (CFA, 2023).⁶
- Asset Protection Zone (APZ) – The Project design will include appropriate APZs and access for fire brigade vehicles, in accordance with the Project's bushfire assessment and as stipulated in FRNSW guideline "Access for fire brigade vehicles and firefighters".

In addition, several environmental management commitments (set out in Section 6.4.7 and Section 6.5.5) relate specifically to hazards and fire management, to ensure the facility operates in a well-managed and acceptable manner.

3.5. Temporary facilities

Temporary facilities required during the construction phase only would include:

- Material laydown areas
- Temporary construction site offices
- Temporary parking for construction worker transportation (a small car park would be retained for maintenance staff and occasional visitors during operation)
- Temporary staff amenities

⁵ This could include the installation of impervious retention facilities to capture run-off from fire and smoke suppressing activities, and suitable treatment plants for the disposal of contaminated water in accordance with the appropriate Australian standards for the storage and handling of dangerous goods.

⁶ This is not a NSW RFS guideline but it is the guideline that speaks to this risk most appropriately.

- Temporary power supply and/or diesel generator for construction site power if required.

Laydown requirements are limited, as most bulk equipment deliveries would be unloaded into place rather than into designated laydown areas. Some small laydowns would be required for cable drums and other auxiliary equipment, to be wholly contained within the Development Footprint.

The staff amenities would be designed to cater for the peak number construction staff expected to be onsite and would include:

- Sanitary modules with water flush systems connected to holding tanks
- Water tanks
- Changing rooms
- Lunchrooms
- Administrative offices
- Covered walkways
- Emergency muster point
- Generator – if required
- Electrical, data and water reticulation.

3.6. Traffic access requirements

Access requirements for the Project have been developed with input from Amber Organisation (refer to 6.3 for the results of the Traffic impact assessment).

3.6.1. Haulage route

All plant that can be transported on vehicles up to B-Doubles is expected to be delivered from the Port of Melbourne or Port of Geelong, Victoria and then transported along approved transport routes. Victorian permitting processes apply to transport of components in Victoria. It is possible that additional haul routes from Sydney may be required for some components. If required, further assessment of these routes would be undertaken and necessary permitting obtained. A route assessment is included in Section 6.3. The proposed Over Size Over Mass (OSOM) route for the transformer is consistent with the B-Double access route. The OSOM transformer route would utilise the following roads to access the site.

Table 3-2 OSOM route access roads

Road name	State	Jurisdiction	OSOM approved
Footscray Road	Victoria	DTP	Approved
Citylink			
Tullamarine Freeway			
Western Ring Road			
Hume Freeway			
Bowser Road			
Federation Way			Approved with travel conditions

Road name	State	Jurisdiction	OSOM approved
Federation Way	New South Wales	TfNSW	Approved
Federation Way			
Honour Avenue			
Bullecourt Road		Federation Council	Unrated
Whitehead Street			

Honour Avenue / Bullecourt Road intersection

To accommodate the construction traffic leaving and the state road network and entering the local network, one road upgrade is required at the Honour Avenue / Bullecourt Road intersection in Corowa to provide a Channelised Right Turn (CHR). The existing intersection already provides Basic Left and Basic Right Turn treatments and has adequate sight distance to allow vehicles to safely enter the state network. A strategic design has been prepared which will allow for simultaneous B-double movements and the largest OSOM vehicle expected to access the site. These upgrades are included within the Project's Development Footprint.

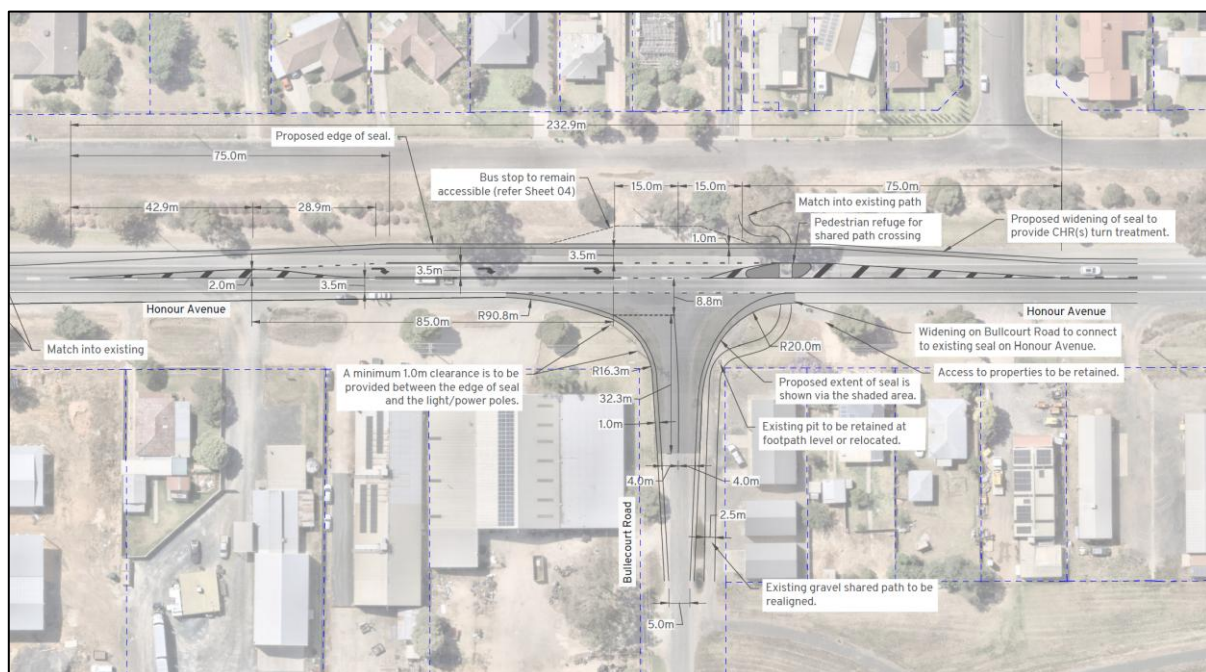


Figure 3-6 Honour Avenue / Bullecourt Road intersection strategic design; Channelised Right Turn (CHR) treatment

Site access and internal tracks

The Project site can be accessed using the existing access location off Whitehead Street which would be upgraded for use during construction and operation. The strategic design is shown in Figure 3-7. This upgrade is included within the Project's Development Footprint.

All internal tracks would be approximately 4-6 m in width composed of gravel or other suitable all-weather substrate.



Figure 3-7 Whitehead Street site access strategic design

The existing access off Whitehead Street would be upgraded for use during construction and operation.

Vehicle movements by type of vehicle

Vehicle movements are most relevant to the construction period, as during the operational period traffic numbers would be significantly reduced. During construction, vehicles would range from light vehicles to heavy vehicles and OSOM vehicles. Table 3-3 provides a high-level breakdown of main vehicle movements during the construction period. The Project is expected to generate up to 62 vehicle trips per hour in the morning and evening peak hours during the peak construction period, which would reduce to 45 vehicle trips per hour during the average construction periods.

In addition, High Risk OSOM vehicles will also be required for the delivery of the largest plant and equipment. These vehicles would exceed the Class 1 mass and/or dimension requirements and are subject to separate permit applications and regulations, including use of a vehicle escort. High Risk OSOM vehicles will contribute the smallest percentage of vehicles accessing the Project Site and are subject to the development of Transport Management Plans to manage each vehicle trip in a safe manner.

Table 3-3 Traffic generation during construction period

Vehicle type	Average construction periods		Peak construction period	
	Vehicle trips per day	Peak hour trips	Vehicle trips per day	Peak hour trips
Light vehicles	80	40	100	50
Rigid trucks	8	2	16	4
Truck & dog / semitrailers	8	2	20	4
B-Doubles	4	1	8	3
Non high risk OSOM	4	0	4	1
<i>Heavy vehicles total</i>	<i>24</i>	<i>5</i>	<i>48</i>	<i>12</i>
TOTAL	104	45	148	62

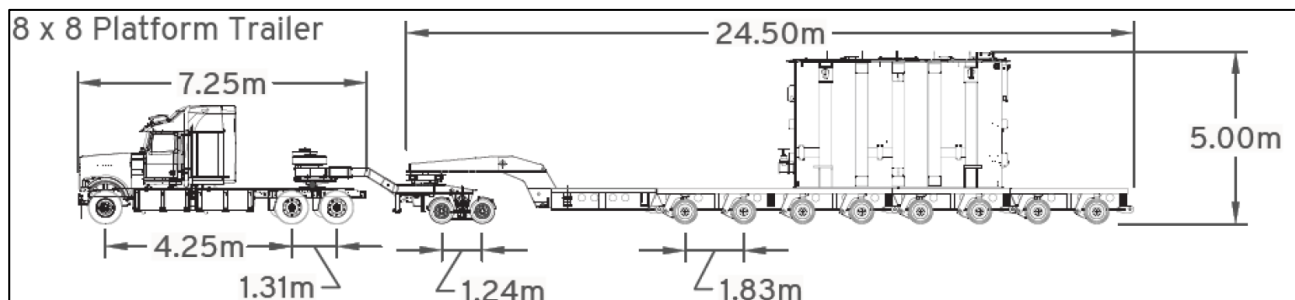


Figure 3-8 Example OSOM; 101t Transformer delivery vehicle with multiple axle low platform gooseneck trailer.

3.7. Resource requirements

3.7.1. Materials requirements

With the exception to the battery units, PCS, transformers, and prefabricated buildings, most general construction materials would be sourced from the local region. The main construction materials would include:

- Aggregates, road base and concrete
- Fencing materials
- Cables, conduits, junction boxes
- Timber and fixtures for building fit-out
- Water for dust suppression, vehicle washdown and drinking.

Table 3-4 provides an estimate of material volumes for the Project.

Table 3-4 Estimated material volumes

Materials	Quantity*
Aggregates / engineered fill	15,000m ³
Steel security fencing materials	800m
Concrete foundations	TBD
Power cabling, and conduit	• 900m LV DC cabling • 300m 33kV AC cabling • 125m HV AC cabling Excluding other cables such as earthing, communication / data cable, auxiliary cable, etc.
Timber and fixtures for building fit-out	N/A

3.7.2. Earthworks

Earthworks are expected to be minimal given the site's low relief terrain. However, they would be focused on:

- The foundations and hardstands related to the BESS, access roads and buildings
- 33kV reticulation cables in trenches (expected up to 1.2m deep)
- Piling to support BESS infrastructure (dependent on geological conditions)
- Footings for 132kV transmission line to Corowa Substation
- Construction laydown areas, temporary staff amenities and security fencing.

These earthworks would require removal of vegetation cover and soil disturbance. Accurate topographic and cadastre surveys would be undertaken as detailed design commences. This would provide accurate cut and fill quantities that would be required. Initial estimates assume the following:

- Topsoil stripping – 4,500m³
- Cut volume – 0m³
- Fill volumes – 15,000m³.

All soil disturbance and the establishment of environmental sediment erosion controls and sediment basins where required would be contained within the proposed Development Footprint.

In areas not required to be disturbed, ground cover would be maintained where possible during the pre-construction and construction stages of the Project. Areas not required for operation would be rehabilitated at the end of the construction phase. Upon decommissioning all above ground infrastructure would be removed. The removal of subsurface cabling and foundations and access tracks would be in agreement with the landholder. The landforms would be left stable and non-polluting.

3.7.3. Water demand and supply

Construction phase

A potable water source would be required during the construction phase for workforce consumption (drinking water), as well as a non-potable water source for fire suppression water, dust suppression and concreting.

Potable water consumption demand is estimated to be up to 1,500 L per day (based on the average of 50 workers consuming 30 L per person/day). All potable water required during construction will be sourced off-site from a private supplier and stored in water tanks on the site.

Non-potable water demand is anticipated to total approximately 2.5 ML for the construction phase, primarily for dust suppression. Dust suppression is assumed to occur on days with no rain (296 days/year on average). Active disturbed areas will be minimised through construction staging and erosion and sediment control planning, including consideration of chemical suppressants to reduce dust generation and associated water demands. Two fire water tanks (with approximate sizing of 200kL each; sizing is to be agreed with RFS) would also be located onsite, which would be filled by water tankers and retained for emergency use only during construction. All non-potable water required during construction will be sourced off-site from a private supplier and stored in water tanks on the site.

Operational phase

Although the site is intended to be operated remotely, water would be maintained onsite for operational workforce consumption (drinking water), as well as ablutions.

Water demand is estimated to be up to 10 L per day. In addition to potable water required for drinking and amenities, approximately 750 kL of water will be required to establish the vegetation screen for the Project. The operational water supply is stored in water tanks on the site and can be maintained through facilities runoff or sourced off-site from a private supplier.

3.7.4. Labour, machinery and equipment

It is anticipated that an average of 50 construction staff comprising of supervisors, tradesmen and labourers would be engaged to complete the work during the peak construction phase. Every effort would be made to hire labour, machinery and equipment locally. Staff would be accommodated in Corowa or nearby surrounding areas.

The construction workforce for the Project will be sourced from the local area as much as practical (depending on local availability). Short-term accommodation will be sourced in nearby townships and regional centres and utilised for non-local construction staff. The Project is expected to see the creation of approximately 117 fulltime-equivalent (FTE) workers the peak construction period.

Indicative machinery and plant equipment that would be used during the construction of the Project is detailed below in Table 3-5.

Table 3-5 Indicative machinery and plant equipment expected for the construction of the Project

Machinery and plant equipment to be used during construction	
Bulldozers	Compressors
Drum roller	Crane
Padfoot roller	Chain trencher
Forklift	Telehandler
Water truck	Welding equipment
Front end loaders	Slew crane or crawler cranes
Dump trucks	Franna cranes
Water carts	Telehandlers
Excavators	Concrete saws and grinders
Graders	Scrapers
Compactors and vibratory rollers	Backhoes
Concrete trucks and pumps	Generators
Elevated work platforms	Hand tools
Light vehicles	

3.8. Project staging and timing

3.8.1. Staging

The Project delivery post approval can be separated into four key stages: Site establishment, construction, operation, and decommissioning.

Table 3-6 Indicative timeline for the Project

Phase	Approximate commencement	Approximate duration
Project Approval	June 2026	N/A
Commercialisation	June 2027	Approximately 12 - 18 months
Site establishment	July 2027	Approximately 2 months
Construction	September 2027	Approximately 18 months
Operation	March 2029	Approximately 20 years

Phase	Approximate commencement	Approximate duration
Decommissioning	TBC	TBC

3.8.2. Pre-construction

The Project may include physical works ahead of the main construction phase including site access and road upgrades, landscaping, installation of fencing, geotechnical drilling and/or surveying and preparation of construction compounds and site facilities. Where permitted by the approval, certain early works may proceed subject to any further or secondary approvals, for works such as:

- Local road and intersection upgrades may be implemented to facilitate the safe commencement of on-site works without local traffic conflicts.
- An initial small work force would develop site entries, limited access tracks and a construction compound. Scale up activities at the compound would occur as the workforce increases.
- Site establishment by the civil and/or electrical balance of plant contractor.

3.8.3. Construction

During the construction phase of the BESS, work would be undertaken during the following hours:

- Monday – Friday: 7am – 6pm
- Saturday: 8am – 1pm
- Sundays and public holidays: no work

Certain light construction and assembly activities would be completed outside of standard construction hours, subject to these activities having no amenity impacts on surrounding residences. Example activities include cable termination, system assembly and testing, script testing (on computer), Supervisory Control and Data Acquisition (SCADA) testing. The performance of the BESS would be monitored through this SCADA system that would report to staff both on and offsite. The system would be capable of notifying staff of system issues and failures.

Any construction outside of these standard construction hours, if required, would be minimised and would only be undertaken with prior approval from relevant authorities.

Construction activities would be carried out over an estimated 18-month period and include the following works:

- Notifications and installation and environmental controls and site fencing
- Upgrading construction access tracks, demolition of existing farm infrastructure
- Benching or import of material for the BESS pad, switchyard area/s, and construction laydown areas
- Concrete works associated with equipment and building foundations / footing
- Trenching and installation of cables at the BESS and high voltage switchyard
- Connections to surrounding utilities as required – Structural works to support BESS facilities
- Construction of supporting structures, e.g., control, workshop, switch rooms, warehouse, internal access tracks and car park
- Delivery, installation and electrical fit-out of BESS and transformers
- Installation of security, water supply, fire system and other site services
- Construction of transmission line connection to the Essential Energy Corowa Substation site

- Substation extension and connection works to facilitate Project connection
- Testing and commissioning activities
- Removal of construction equipment, rehabilitation of construction areas, planting of screening vegetation (if required) and demobilisation.

3.8.4. Operation

It is anticipated that the Project would operate for approximately 20 years. Refurbishment would be required within the Project's operational lifespan. It is envisaged that some individual components, such as battery modules and inverter units, may need to be replaced before the end of this term due to unforeseen faults or general wear and tear.

Corowa BESS would operate 24 hours a day, seven days a week. It is anticipated that no full-time staff would be employed onsite during operation, rather staff will attend site regularly as required for preventative and responsive maintenance works. The BESS would primarily be operated remotely, which would require remote full-time staff. Contractors local to the Corowa region will be required for ongoing maintenance, such as electrical equipment maintenance, HV switching, fire systems maintenance, weed and pest control.

Any planned noise producing work would be undertaken during the standard working hours of:

- Monday – Friday: 7am – 6pm
- Saturday: 8am – 1pm

Work would only be undertaken outside of these hours, where justified, for repairs or emergency activities, and would be kept to a minimum.

3.8.5. Decommissioning and rehabilitation

The Project has an expected life span of approximately 20 years. At this point it could be refurbished and recommissioned, subject to still meeting all required conditions of consent, or decommissioned. The decommissioning phase would involve removal of all above ground infrastructure (including concrete slabs and footings) and below ground infrastructure where possible, and return of the site to a safe, stable and non-polluting state. The exception will be any Essential Energy infrastructure to be retained under their ownership and managed by them.

3.9. Proposed subdivision and agreements

The Project currently has a land option agreement with the associated landholder. Pending Project approval, a long-term lease agreement would be entered into. Subdivision is not proposed to separate the operational BESS site from the host land holding.

As part of this Project, Lot 12 DP1115583 would be subdivided to create a parcel of land (approximately 72m x 50m) adjacent to the Corowa Zone Substation to facilitate extension of the substation for connection of the Project. This parcel of land, and any connecting works within it, would become the property of Essential Energy in operation. The subdivision area is considered indicative and will be informed by detailed design, post approval. It would be administered by the Federation Council and NSW Land Registry Services.

An indicative subdivision plan is shown in Figure 3-9.

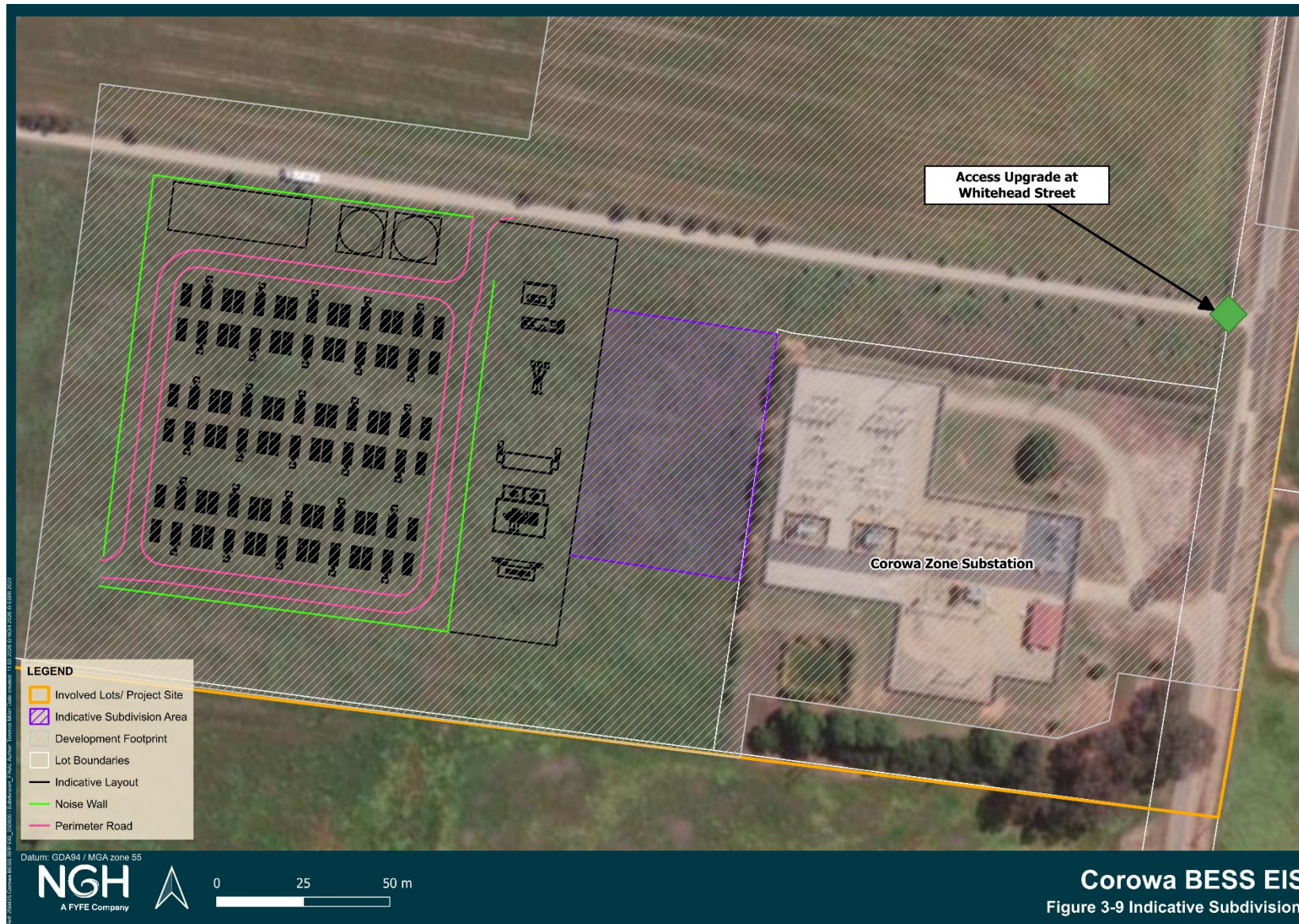


Figure 3-9 Indicative subdivision plan

3.10. Estimated development costs

The estimated development cost (EDC) of Corowa BESS is anticipated to be greater than \$30 million. An EDC Report has been provided to DPHI in support of the Project.

04 Statutory Context



4. Statutory context

4.1. Power to grant approval

Approval of the Project is sought under the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act).

The NSW State Environmental Planning Policy (Planning Systems) 2021 (SEPP Planning Systems) dictates the planning pathway for the Project. Section 20 of Schedule 1 of the SEPP Planning Systems states that the following is considered a State Significant Development (SSD):

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

(a) has an estimated development cost of more than \$30 million, or

(b) has estimated development cost of more than \$10 million and is located in an environmentally sensitive area of State significance.

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

A building or place used for the purpose of:

(a) Making or generating electricity, or

(b) Electricity storage

The Project would have a capital investment cost estimate of more than \$30 million (\$140 million). Therefore, the Project is classified as “SSD” under division 4.7 of the EP&A Act.

The Minister for Planning and Public Spaces is the consent authority for SSD, and SSD applications are assessed by DPHI (unless specific conditions occur e.g., where 50 or more people have objected to the application, the local council has objected to the application; and/or the Applicant has disclosed a reportable political donation, whereby the Independent Planning Commission (IPC) would be the consent authority).

4.2. Permissibility

The site is located within land zoned Primary Production RU1 under the Corowa LEP 2012.

Section 2.36(1)(b) of the State Environmental Planning Policy (Transport and Infrastructure) 2021 (TISEPP) states development for the purpose of electricity generating works may be carried out by any person with consent on any land in a non-prescribed residential zone. The land is zoned RU1 and under Section 2.35 of the TISEPP, a non-prescribed residential zone.

The provisions of the TISEPP prevail over the Corowa LEP (which states electricity generation is prohibited in this zone). Therefore, the Project is permissible with consent.

4.3. Pre-condition to exercising the power to grant approval

Table 4-1 Pre-conditions to exercising power to grant approval

Statutory reference	Pre-condition	Relevance	Section in EIS
State Environmental Planning Policy (Transport and Infrastructure) 2021	In accordance with Section 2.119 The consent authority must not grant consent unless it is satisfied of certain matters relating to vehicular access to the classified road, impacts on the safety, efficiency and operation of the classified road and sensitivity of development fronting the classified road.	The Project's primary access is via Whitehead Street, administered by the Federation Council. An upgrade to the Honour Avenue / Bullecourt Road intersection is additionally required for the Project. This upgrade involves a classified road. The Project is consistent with Section 2.119 as it would not compromise operation of the state classified road, as assessed in the EIS.	Addressed succinctly in this table considering the exceptions of the TISEPP.
	Section 2.122 of the Transport and Infrastructure SEPP requires 'traffic generating development' to be referred to TfNSW.	The Project would result in the generation of additional vehicles on the transport network. As such, a Traffic Impact Assessment has been completed. TfNSW have been consulted throughout the development of the Traffic Impact Assessment and will be able to provide a submission during the EIS submission phase.	Section 6.3 and Appendix E3.

4.4. Mandatory matters for consideration

Mandatory matters for consideration are factors that a decision-maker is legally bound to take into account, as required by law. A failure to consider a mandatory matter can be a legal error that allows a decision to be challenged.

Mandatory considerations in the Environmental Planning and Assessment (EPP&A) Act, 1999 include the likely impacts of the development (including environmental, social and economic impacts), and the relevant provisions of applicable planning instruments.

Table 4-2 provides a summary of the mandatory matters that will be considered for this Project.

Table 4-2 Summary of mandatory matters for consideration

Statutory reference	Mandatory consideration	Section in EIS, where relevant
Consideration under the EP&A Act and EP&A Regulation		
Section 1.3	Objects of the Act: (relevant objects in bold) a. To promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State's natural and other resources b. To promote the supply, delivery and maintenance of housing, including affordable housing c. To promote productivity through the development and management of the State and its resources d. To protect the environment, including the conservation of threatened species of native animals and plants and ecological communities and their habitats e. To promote resilience to climate change and natural disasters through adaptation, mitigation, preparedness and prevention f. To promote the sustainable management of built and cultural heritage, including Aboriginal cultural heritage g. To promote good design, amenity and the proper construction and maintenance of built environments, including the protection of the health and safety of the occupants of buildings h. To provide opportunities for participation in environmental planning and assessment i. To facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment j. To promote a proportionate and risk-based approach to environmental planning and assessment k. To promote the orderly and economic use and development of land.	Section 6 and Section 7
Section 4.15	Relevant environmental planning instruments	This table

Statutory reference	Mandatory consideration	Section in EIS, where relevant
	- State Environmental Planning Policy (Transport and Infrastructure) 2021 - State Environmental Planning Policy (Planning Systems) 2021 - State Environmental Planning Policy (Resilience and Hazards) 2021 - State Environmental Planning Policy (Biodiversity and Conservation) 2021 - State Environmental Planning Policy (Primary Production and Rural Development) 2021 - Corowa LEP 2012 - Corowa Development Control Plan 2016 (Corowa DCP) Relevant planning agreement or draft planning agreement - In principal agreement to focus the Voluntary Planning Agreement on community and development outlined with the Edward River Strategic and Operational Plans. - EP&A Regulation 2021 - Biodiversity Conservation Regulation 2017 Likely impacts of the development (environmental, social and economic) Suitability of the site for development Submissions made in accordance with the Act or regulations Public interest	Section 2.2.3 Section 6 and Section 7
Mandatory relevant consideration under EPIs		
SEPP Resilience and Hazards – section 3.7	Consideration must be given to current circulars or guidelines published by DPE as follows: - Hazard Industry Planning Advisory Paper No. 4 – Risk Criteria for Land Use and Safety Planning, - Hazard Industry Planning Advisory Paper No. 6 – Guidelines for Hazard Analysis, and Multi-Level Risk Assessment.	Section 6.4, Section 6.5 and Appendix E4 and E5.
SEPP Transport and Infrastructure	Mandatory considerations under the Transport and Infrastructure SEPP include environmental impacts like bushfire, flooding, and biodiversity, alongside social and economic impacts, traffic, parking, infrastructure services, urban design, heritage, and community consultation. The specific requirements depend on the project and its potential impacts, but the policy aims to facilitate infrastructure delivery by outlining approval processes and assessment criteria.	Sections 6 and 7
SEPP Planning Systems	This SEPP deals with identifying state and regionally significant development and infrastructure. Considerations under this	

Statutory reference	Mandatory consideration	Section in EIS, where relevant
	policy include specific requirements for certain types of infrastructure like ports or rail lines. It also provides for the consideration of development delivery plans by local Aboriginal land councils.	
SEPP Biodiversity and Conservation	Mandatory considerations under the Biodiversity and Conservation SEPP involve the impact of development on biodiversity values, especially in strategic conservation areas and urban areas. Key matters include the preservation of native vegetation, the need to avoid or minimize impacts on biodiversity, and the provision of mitigation measures like retiring biodiversity credits if clearing is approved. The SEPP also specifies processes for applications to modify biodiversity certification and sets out rules for specific areas, such as strategic conservation areas and certain waterways.	Section 6.1
SEPP Primary Production and Rural Development	The NSW State Environmental Planning Policy (Primary Production and Rural Development) 2019 (SEPP) mandates considerations like balancing farming with residential use, protecting biodiversity, identifying key agricultural land, simplifying regulations for small farms, supporting sustainable practices, assessing impacts on oyster aquaculture, and ensuring proper assessment for intensive agriculture, all aiming to boost NSW's economy, jobs, and food security while minimizing land-use conflict. Key considerations include land use conflicts, biodiversity protection, sustainable farming, aquaculture impacts, and clear thresholds for development consent, guided by principles to support farmers' right to farm.	Section 6.9 and 6.10
Corowa LEP	Section 7.1: Earthworks As per part 2(b), <i>"development consent is required for earthworks unless the earthworks are ancillary to other development for which development consent has been given"</i>. As all earthworks to be undertaken as part of the Project will be "authorised" through the EIS process, and the application to DPHI for development consent, there is no requirement, as per part 2(b) to obtain consent, in terms of the LEP, for earthworks.	N/A
	Section 7.3: Stormwater management As per Part 2, <i>"this clause applies to all land in residential, employment and mixed use zones"</i>. The Project Site is located on land zoned Primary Production RU1 under the Corowa LEP 2012. As this land use zoning is neither residential, employment nor mixed use, as per Part 2, Section 7.3 of the LEP is not applicable.	N/A
	Section 7.9: Essential services	(a) Section 3.7.3

Statutory reference	Mandatory consideration	Section in EIS, where relevant
	Development consent must not be granted to the development unless the consent authority is satisfied that any of the following services that are essential for the development are available or that adequate arrangements have been made to make them available when required – a) The supply of water b) The supply of electricity c) The disposal and management of sewage d) Stormwater drainage or on-site conservation e) Suitable road access. All five aspects have been assessed as part of the EIS including water source options, how connection to the substation would be undertaken, how construction and permanent sewerage facilities will be provided, what drainage structures are required as part of the project and what road upgrades are required to facilitate the project.	(b) Section 3.4.1 (c) Section 3.4.1 (d) Section 3.4.5, Section 6.9.3 and Table 6-54 (e) Section 3.6
Corowa Development Control Plan	DCP provisions do not apply to SSDs in accordance with Section 2.10 of the Planning Systems SEPP	N/A
Considerations under other legislation		
BC Act – section 7.14	The likely impact of the proposed development on biodiversity values as assessed in the biodiversity development assessment report. The Minister for Planning may (but is not required to) further consider under that Act the likely impact of the proposed development on biodiversity values.	Section 6.1
<i>Native Title Act 1993</i>	There are no areas within the Project Site registered or under assessment under the <i>Native Title Act 1993</i> .	N/A

4.5. Approvals and licenses

Table 4-3 Summary of licenses and approvals required for the Project

Legal instrument	Approving authority	Approval or licence
<i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act)	Federal Department of Climate Change, Energy, the Environment and Water (DCCEEW)	Where Matters of National Environmental Significance have potential to be significantly affected, a Commonwealth approval is potentially required. The BDAR has verified no EPBC-listed communities, or species are likely to be impacted by the Project and that an EPBC referral is not considered warranted.

Legal instrument	Approving authority	Approval or licence
<i>Environmental Planning and Assessment Act 1979 (NSW) (Part 4)</i>	DPHI	State significant development applications require approval from the Minister for Planning or the Independent Planning Commission. This EIS has been prepared in accordance with the requirements of the Secretary of the DPHI.
<i>Roads Act 1993 (NSW) (Section 138)</i>	Federation Council and Transport for NSW	Any works to council public roads or classified roads require consent under this Act from the road's authority. Federation Council is the roads authority for Whitehead Street where the site access will be created/upgraded, and Bullecourt Road where an intersection upgrade is proposed at its junction with Honour Avenue. Transport for NSW (TFNSW) is the roads authority for Honour Avenue which is a classified (State) road.
<i>Real Property Act 1900</i>	Federation Council and NSW Land Registry Services	Any subdivision would require a subdivision certificate from the Council under Division 6.4 of the EP&A Act. A lease of a site will be treated as a lease of premises. As the registered survey plan defines 'premises' (being BESS) it will not constitute a 'current plan' within the meaning of section 7A <i>Conveyancing Act 1919</i> and therefore will not require subdivision consent as this is one of the exemptions under section 23G <i>Conveyancing Act 1919</i>. A subdivision is proposed for the Essential Energy substation connection works as outlined in Section 3.9. Any subdivision would be undertaken under the provisions of the <i>Real Property Act 1900</i>.

Table 4-4 Licenses and approvals not required for the Project

Legal instrument	Approving authority	Approval or license
Fisheries Management Act 1994 (FM Act), Heritage Act 1977, National Parks and Wildlife Act 1974 (NPW Act), Rural Fires Act 1997,	N/A	Section 4.41 of the EP&A Act excludes the following approvals when the Project is a SSD. - A Fisheries permit under the Section 201 and 219 of the <i>Fisheries Management Act 1994</i> - An excavation permit for details heritage surveys under Section 139 of the <i>Heritage Act 1977</i> - An Aboriginal heritage impact permit under Section 90 of the <i>National Parks and Wildlife Act 1974</i>⁷ - The Project would not require a bushfire safety authority under Section 100B of the <i>Rural Fires Act 1997</i>

⁷ Note that the Project has comprehensively assessed impacts to Aboriginal heritage as part of an Aboriginal Cultural Heritage Assessment (ACHA) during the EIS.

Legal instrument	Approving authority	Approval or license
<i>Water Management Act 2000 (WM Act).</i> Water Sharing Plan for the Murray Unregulated River Water Sources 2024 (WSP)		A water use approval (Section 89), a water management work approval (Section 90) and an activity approval (Section 91) under the <i>Water Management Act 2000</i> would not be required.

05 Engagement



5. Engagement

5.1. Broad community engagement

This chapter identifies and maps the key Project stakeholders, outlines outcomes of completed engagement activities, and recommends plans for the remaining Project stages.

The Applicant has committed to deliver ongoing best-practice engagement, with the overarching objective to ensure that the identified community and stakeholder groups are proactively and meaningfully informed, consulted and involved. The Applicant's engagement activities have been designed to build trust, meaningful relationships and share benefits with the community in and around the Corowa region.

The Applicant's engagement approach is set out in its Corowa BESS Engagement Plan and the Social and Economic Impact Assessment Report (Appendix 12). This plan intends to ensure that the Project delivers shared value for the local community, including Traditional Owners, residents, businesses, and other relevant stakeholders. It was informed by best-practice guidelines including:

- *Undertaking Engagement Guideline for State Significant Projects* (DPHI, 2024)
- *Benefit-Sharing Guideline* (DPHI, 2024)
- *Public Participation Spectrum* (Engagement Institute, 2018, formerly International Association of Public Participation)
- *Best Practice Charter for Renewable Energy Projects* (Clean Energy Council, 2021)
- *Leading Practice Principles: First Nations and Renewable Energy Projects* (Clean Energy Council, 2024).

5.1.1. Engagement objectives and key principles

The Project's engagement process is designed to build trust, meaningful relationships and benefits for the community in and around the Corowa region, consistent with best practice stakeholder engagement standards and practices. The Applicant's key objectives for engagement are summarised in Figure 5-1. Additionally, the Applicant's engagement approach adheres to eight principles of engagement as set out in Figure 5-2.



Figure 5-1 Key objectives for engagement (Source: Lecroma)



Figure 5-2 The Applicant's engagement principles (Source: Lecroma)

5.1.2. Stakeholder identification

Project 'stakeholders' are broadly defined as the people and groups that are likely to be interested in or affected by the Project. Stakeholders on the Project have been broadly grouped into eight categories as shown in Figure 5-3. Further details about these categories and their relative involvement in the Project are provided in Table 5-1, which describes the key stakeholder groups as identified in Figure 5-3 and recommends an engagement approach and timing, mapped against the International Association for Public Participation (IAP2) Spectrum of Public Participation (inform -> consult -> involve -> collaborate -> empower).

Stakeholders have been identified by compiling land ownership information; considering the local and wider community, industry and service providers; networking with different individuals and community organisations; reviewing media advertisements; and community information sessions; consultation with Government regulators; and including all stakeholders referenced in the SEARs (provided in Appendix A).



Figure 5-3 Key stakeholder groups

Table 5-1 Key stakeholder group mapping and proposed IAP2⁸ engagement strategy

Stakeholder group	Definition	Details	Level of interest (L/M/H)	Level of influence (L/M/H)	Level of engagement (L/M/H)	Stakeholder engagement strategy
Project host	Primary landowners hosting project infrastructure	One landholder will host all the infrastructure for the project.	High	High	High	Empower
Project neighbours	Within approximately 1 km of the project area	18 lots / 11 landholders.	High	High	High	Collaborate
Community and interest groups	- Community members who live or groups which operate within approximately 40 km of the project infrastructure - Community members who are not landowners or immediate project neighbour	Community groups: - Corowa and District SHE Shed - Corowa Community Garden - Corowa Community Men's Shed - Corowa Cougars Rugby League - Corowa Rutherglen Football Netball Club - Corowa District Landcare - Corowa Land Care	Low	Low	Low	Inform
		Interest groups: Corowa Rotary Club	Low	Low	Low	Inform

⁸ International Association for Public Participation

Stakeholder group	Definition	Details	Level of interest (L/M/H)	Level of influence (L/M/H)	Level of engagement (L/M/H)	Stakeholder engagement strategy
	Schools and education institutions	- Corowa Chamber of Commerce - Corowa Local Health Advisory Committee - Murray Darling Association				
		Local schools and education institutions: TAFE NSW – Corowa Campus	Medium	Medium	Medium	Inform
		Local schools and education institutions: - Saint Mary’s Catholic Primary School - Corowa South Public School - Corowa Public School - Corowa High School - Corowa Preschool - Corowa Kids Early Learning	Low	Low	Low	Inform
First Nations groups and/or Traditional Owners	- Registered Aboriginal Parties (RAPs) and Aboriginal groups - Includes Local Aboriginal Land Councils	- Albury and District Local Aboriginal Land Council - Bangerang Aboriginal Corporation - Bangerang Cultural Centre - NSW Aboriginal Land Council - Aboriginal Cultural Heritage Education - Southern West Yiradjuri Clands	Medium	Medium	Medium	Involve

Stakeholder group	Definition	Details	Level of interest (L/M/H)	Level of influence (L/M/H)	Level of engagement (L/M/H)	Stakeholder engagement strategy
		Bundiyi Cultural Tours				
Government and elected representatives	- Elected representatives at the State or Federal level. - Local Government Councillors and Council staff. - Departments and agencies at the State or Commonwealth level	Federal Government: Member for Farrer is MP Sussan Ley (Liberal), who has represented the division since the 2001 federal election.	Medium	High	Medium	Inform
		State Government: - MP Justin Clancy, State Member for Albury - MP Penny Sharpe, Minister for portfolios covering Energy, Environment, Heritage and Climate Change. Member of the Legislative Assembly.	Medium	High	Medium	Involve
		Federation Council: - Management team - Adrian Butler, General Manager - Jo Shannon, Deputy General Manager/CFO - Susan Appleyard, Director of Planning, Place and Sustainability - Narelle Donovan, Manager, Community and Economic Development	High	High	High	Collaborate

Stakeholder group	Definition	Details	Level of interest (L/M/H)	Level of influence (L/M/H)	Level of engagement (L/M/H)	Stakeholder engagement strategy
		- Councillors (elected) - Cr Cheryl Cook, Mayor - Cr Rowena Black, Deputy Mayor - Cr David Bott - Cr Patrick Bourke - Cr David Harrison - Cr Andrew Kennedy - Cr Richard Nixon - Cr Derek Schoen - Cr Susan Wearne				
		Commonwealth Government Departments/Agencies: - Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) - Australian Energy Infrastructure Commissioner - Australian Energy Market operator (AEMO)	Low	Low	Low	Inform
		State Government Departments/Agencies: - Department of Planning, Housing and Infrastructure (DPHI) - Department of Primary Industries (DPI)	Medium	Medium	Medium	Involve

Stakeholder group	Definition	Details	Level of interest (L/M/H)	Level of influence (L/M/H)	Level of engagement (L/M/H)	Stakeholder engagement strategy
		- NSW Environmental Protection Authority (EPA) - Emergency service organisations, including NSW Rural Fire Service - NSW Department of Planning and Environment - Office of Environment and Heritage				
Local industry	- Groups or organisations representing local business sectors, such as business chambers and sector-based associations. - Electricity / utility network service providers (gas, water, electricity).	- Business NSW - Corowa Business Chamber - Industry Capability Network (ICN) NSW - Essential Energy - Corowa Solar Farm - NSW Farmers Association - Regional Development Australia (RDA) – Murray	Medium	Low	Low	Inform
Local media	Media outlets and communication channels that operate at the community, city, or regional level	- Newspapers: Yarrawonga Chronicle, Corowa Free Press, Shepparton Adviser - Radio: 2COR Community Radio, Triple C FM	High	Medium	Medium	Involve

Stakeholder group	Definition	Details	Level of interest (L/M/H)	Level of influence (L/M/H)	Level of engagement (L/M/H)	Stakeholder engagement strategy
		Active community Facebook groups: What's on in Corowa and Surrounds, Corowa Community Info Page, What's on in Corowa				
Local business	- Businesses operating within 35 km of the Project Area. - Includes emergency services and local airports.	Emergency services: - Corowa Health Service - Fire and Rescue NSW - Corowa NSW SES Corowa Unit - Rural Fire Service – Southern Border District	Medium	Medium	Medium	Involve
		Local businesses contacted for engagement: - Corowa Solar Farm - Max McLean & Co Hardware - Winemakers of Rutherglen - JBS Pork Australia - Focus Engineering & Construction - Upton Engineering - Dickins Engineers - Corowa Ready Mixed Concrete - Longford Civil - Naubro Concreting	Medium	Low	Low	Inform

Stakeholder group	Definition	Details	Level of interest (L/M/H)	Level of influence (L/M/H)	Level of engagement (L/M/H)	Stakeholder engagement strategy
		• Federation Steel and Industrial Corowa • Symmetrix Electrical • Colins Machining Fabrication • Chesters Transport • Corowa Distilling Co • Nutrien Ag Solutions • WB Hunters Corowa • Ag N Vet Corowa • Fox & Lillie Rural Corowa • Jones Plumbing Plus Corowa • D&M Scrap Metal • Border Bearings • Border Fencing Solutions • Corowa Tree Care • GPE Electrical • Cofield Plumbing & Co • Federation Hire & Cooperage • Collins Transport • Miltrans				

5.1.3. Engagement methods and supporting tools

The Applicant has adopted and employed a variety of engagement methods and supporting tools to identify, engage and meet with stakeholders and community members to support maximum accessibility. These are described in Table 5-2.

Table 5-2 Engagement methods and tools

Method/tool	Description	Status	Target stakeholder group(s)
Stakeholder mapping	- Identification and analysis of the key groups and individuals whose decisions can affect or be affected by the Project. - Provides an overview of the relevant stakeholders in the community and informs the way developers should approach them in the engagement. - Is used in scoping and SEIA reports.	- Stakeholders initially mapped during Stage 2 (project feasibility). - Mapping updated during Stage 3 (planning and approval) and will be revisited throughout the project lifecycle.	All
One-on-one briefings	- Personal meetings between project team and individuals from the community to discuss aspects of the project. - Medium can be face to face, telephone or online (e.g. Zoom/Teams). - This method is relatively informal. - Material should be prepared to share with individuals and project team should be well equipped to respond to possible questions, concerns or expectations. - Best commenced as early as feasible, and then at key project milestones and/or upon request. Also, where specific inputs are required from community members including when	Commenced during the scoping stage and used regularly. Mediums included door knocking, phone calls and one-on-one meetings.	All

Method/tool	Description	Status	Target stakeholder group(s)
	developing the Project's Community Benefits Program.		
Written communication	- Written word containing information about the Project, including updates of interest to the community, key steps taken by the Proponent, and avenues for stakeholders to provide input and feedback on the project. - Medium can include emails, fact sheets, myth busters, FAQs, community newsletters. - Best commenced as early as feasible and then bi-monthly, or as required throughout the Project lifecycle.	- Commenced during the scoping stage and continued throughout the project cycle. Mediums used: - General project double page flyer - Infographic on the development process for renewable energy projects - Mail outs to neighbours - Letter invitations to the Community Days - Project information brochure - Feedback forms for the Community Day - Emails - Website content - Fact sheets on EIS technical assessments including ACHAR, bushfire, visual, noise, social and economic, traffic, and other potential impacts - Letters of offer to neighbours - PowerPoint presentations	All
Project website	An online resource for communities to access information about the Project at any time.	Website established in June 2025 and has been regularly updated: Corowa Battery - Flow Power	All

Method/tool	Description	Status	Target stakeholder group(s)
	Website to include project details (timeframes, project boundary, contact details, including phone number of project team), printable/distributable factsheets, and key messages.	Contact email established in March 2025 (info@corowabattery.com.au)	
Telephone information lines	- A direct line where stakeholders can contact the Proponent to discuss project matters. - The phone number is provided on the project website and other mediums described in this table.	Proponent's contact number already established (1300 08 06 08) and will be retained through the project lifecycle.	All
Community day	- Can be referred to as an 'information day' or 'drop-in session', a casual event for community members, local council and local businesses to visit to ask questions or collect information about the project, as well as provide comments and feedback to the project team. - Usually hosted in an open space format, with several desks or poster displays with information about specific aspects of the Project so visitors can walk around them. - Examples of host locations include a library, community hall or café.	- First community day held on 20/05/2025. 16 community members attended. Key discussion topics/issues raised included: visual impact, noise, bushfire, site design, property value, biodiversity impacts, and concerns about lack of transparency from the government and proponents. Throughout the day there was a mix of positive, neutral and negative responses. Most community members were interested in learning more information as it evolved, especially the near neighbours. - Second community day held on 20/11/2025 at TAFE NSW Corowa from 3pm to 8pm. Eight community members attended. Key discussion	- Community members and interest groups - Project neighbours - Local business - Local industry

Method/tool	Description	Status	Target stakeholder group(s)
		topics/issues raised included: visual impact, traffic impacts, decommissioning, bushfire risk, community benefit funds and the Proponent's background.	
Media releases	- An official statement delivered to members of the news media to provide information or make a public announcement. - Best deployed throughout the project lifecycle at key milestones/project updates/to rectify misinformation.	- Media statement released on 23/10/2025 announcing plans for Corowa BESS and outlining proposed project benefits and the State Significant Development process. - Also included responses to FAQs about location choice, why the project is needed in the area, key concerns raised to date, and neighbour benefits.	- Local media - Government and elected representatives
Complaints management mechanisms	- A formal process to channel and resolve legitimate issues, concerns, or problems that an individual or group has about the project. Can be accessed via the project website. - Best to establish as early as possible and used throughout the project lifecycle.	Set out in Corowa BESS Engagement Plan and FAQ linked to feedback form is on the website. Hard copy feedback forms were also provided at Community Day 1 and 2.	- Project neighbours - Community members and interest groups
Project advertisements	Public notices or displays intended to inform the community about the Project.	Advertisement for Community Day 1 (20/5/2025) in the Shepparton news on 13, 16 and 19 May 2025 and the Riverine Herald on 12, 16, and 19 May.	All

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Method/tool	Description	Status	Target stakeholder group(s)
		• Advertisements for Community Day 2 (20/11/2025) in Corowa Free Press released on 29/10/2025, 5/11/2025 and 12/11/2025. • Additional advertisements may be published once EIS is submitted and public exhibition period commences and otherwise as necessary throughout the project lifecycle.	

5.1.4. Outcomes of engagement

Scoping phase engagement

The Applicant's engagement with the community and key stakeholders commenced in April 2025 as part of the Project's pre-scoping phase. Feedback collected during initial consultation activities was used to inform the Project design to minimise impacts where possible, such as visual amenity. Engagement occurred with the Corowa community, neighbours of the Project Site, key state and federal government agencies, and local community organisations with particular emphasis on community benefit sharing ideation.

A summary of the early engagement activities undertaken by the Applicant is provided in Table 5-3, with a summary of the feedback received from stakeholders provided in Table 5-4.

Table 5-3 Early community and stakeholder engagement undertaken by Flow Power

Stakeholder	Early Engagement Activities
NSW Government	Pre-lodgement online meeting with NSW Department of Planning, Housing and Infrastructure on 30 May 2025
Federation Council	The Mayor and two Councillors attended the Corowa BESS Open Day on 20 May 2025 Meeting with Federation Council Department of Planning, Place and Sustainability on 6 May 2025
TAFE NSW	Meeting with a representative of TAFE NSW on Corowa BESS Open Day on 20 May 2025
Community – neighbours	Letter drops to nine (9) nearby landowners (see Appendix D1.1) Open Day meetings (see Appendix D1.1 to 1.5) and phone discussions with seven out of nine landowners and residents
Community – broader community	Invitations and meetings with the broader community, including local special interest groups on Corowa BESS Open Day on 20 May 2025
Traditional Owners	A meeting and calls with a representative of Bangerang Aboriginal Corporation
Essential Energy	Ongoing engagement with Essential Energy

Table 5-4 Summary of stakeholder feedback during the Scoping phase

No.	Feedback
1	Interest in construction and other employment opportunities
2	Interest in local community benefit programmes
3	Concerns about fire safety
4	Concerns about visual and noise impacts for nearby residents
5	Concerns about potential impacts on land values

EIS phase engagement

Following the lodging of the Scoping Report and receiving the SEARs, the Applicant has continued engaging with the community and key stakeholders about final designs, and the model to deliver social and economic value between the Applicant, Federation Council and the community.

Between April-December 2025, the Applicant has had in excess of 150 unique interactions with local stakeholder groups across more than 60 stakeholders and organisations, hosted two community days, and given a council briefing (recorded for public viewing). There was no identifiable objection group established in the local community or Federation Council area the time of developing this assessment (November 2025).

Table 5-5 provides an overview of key engagement activities carried out with the community and stakeholders up to EIS submission, including feedback received. Additional communication, including email correspondence, has been carried out variously across the life of the Project but may not have been included for brevity and confidentiality.

A mixed methods engagement approach was the most effective with near neighbours; in-person discussions were most valued, followed by a combination of phone calls and email updates.

Table 5-5 EIS phase engagement activities and outcomes

Stakeholder group	Specific stakeholder	Date/s	Tools	Details
Project host	Host landowners	Ongoing since November 2024	In-person meetings and phone calls	- Ongoing landowner meetings since Project inception to update on project progress, milestones, and feedback from key stakeholder groups about the Project. - Continuous adaption of the Project to minimise and/or avoid potential impacts on agricultural operations.
Project neighbours	All	April 2025	Letter drop	- Mailout conducted for properties on Whitehead St within 1km of the Project Site. Consisted of flyer and render of the proposed Project. 18 lots, nine of the 11 landholders directly contacted (noting several neighbours own multiple dwellings around the site and are rented out). - See Appendix D1.1
		April – August 2025	Mixed Method	Project update to neighbours following issuing of SEARs about the project and answer questions or discuss concerns. Issues raised include potential visual impact, impact on property values.
		2-3 September 2025 & 22 September 2025	Neighbour meetings	- Face to face meetings held with 11 neighbours within 1km of the site. Initial response was mixed (leaning negative to neutral). Neighbour discussions provided feedback and local insight, particularly about site layout, which resulted in significant changes to the layout proposed in the Scoping Report. - Concerns were raised about noise (air quality); visual and landscape amenity; road access and condition and fire / hazards. - Neighbour Benefit Sharing Initiative was launched in September 2025 and received a mixed response. 40% of the neighbour households have taken up the Benefit Sharing offer at the time of this Report's development.

Stakeholder group	Specific stakeholder	Date/s	Tools	Details
		Mid-October 2025	Email	Follow-up regarding the Neighbour Benefit Offer.
		End October 2025	Email, letter and phone calls	- Neighbours were invited to the second Community Day held in November 2025 (mixed method based on preference, including email, letter and phone calls). - See Appendix D2.1.
		November 2025	In-person meetings, emails, phone calls	Select neighbour households attended the Community Day on 20 November 2025, where discussions took place and questions were raised.
Community and interest groups	All	20 May 2025	Community Day (drop-in centre)	- Proponent hosted an all-welcome event at Corowa Memorial Hall on Sanger Street. The event was advertised via personal invites (email, letters, letterbox drop) and through the Corowa Free Press. Direct neighbours, council, select businesses and education institutions were invited. See Appendix D1.1 for direct invite example, 1.2 for the Corowa Free Press advertisement. 16 people attended, including several project neighbours and other community members. There was also representation from education institutions such as TAFE NSW, community groups, select Federation Councillors, an RFS volunteer, and interest groups. - Key questions raised and feedback received included visual amenity, impact on property values and insufficient consultation. - Flow Power committed to providing transparent and timely communications to interested residents and neighbours through their preferred method of contact. See Appendix D1.6 for first follow-up correspondence post Community Day. This particularly applied to

Stakeholder group	Specific stakeholder	Date/s	Tools	Details
				technical testing which would be performed over the coming months into November/December.
	TAFE NSW	20 May 2025	In-person meeting	During the Community Day, the project team held a face-to-face meeting with a representative from TAFE NSW. Discussions focused on potential educational pathways and job opportunities arising from the Project. TAFE NSW offered to host the next Community Day event at TAFE premises.
	Corowa Local Health Advisory Group	20 May 2025	In-person meeting	During the Community Day event, the project team met with a representative from the Corowa Local Health Advisory Group who raised concerns about potential health risks.
	Corowa Landcare	24 July 2025	Online meeting	- The project team met with a representative from Corowa Landcare to discuss projects the Proponent could potentially support. Examples of ideas discussed include combining the wetlands into a walking track (assisting with signage) and a citizen science project on wetland enhancement (Sloane's Froglet angle). - Landcare committed to follow up in the new financial year to update on organisational priorities.
		30 October 2025	Online meeting	- The project team held a discussion with Federation Council staff and Corowa Landcare representatives on the opportunity to fund a rehabilitation project for the Whitehead St Wetlands through benefits sharing arrangements between Flow Power and Federation Council. - Federation Council, Corowa Landcare and the project team committed to a follow up discussion on the development a management plan for the site before commencing further discussions on a project to rehabilitate the wetlands.

Stakeholder group	Specific stakeholder	Date/s	Tools	Details
	All	20 November 2025	Community day	- Proponent hosted an all-welcome event at TAFE NSW Corowa Campus. See Appendix D, section 2 for details. - The event was advertised via the Corowa Free Press (Appendix D2.2). - Information Fact Sheets available at this Community Day are attached in Appendix D2.3. 7 people attended, including several project neighbours and other community members. There was also representation from local business. - Key questions raised and feedback received included visual amenity, fire risk and traffic.
First Nations groups and/or Traditional Owners	Bangerang Aboriginal Corporation and ACHE	February 2025 onwards	Mixed Methods	- The project team met with a representative from the Bangerang Aboriginal Corporation and provided a briefing on the proposed project. Issues discussed included potential impacts on Aboriginal heritage, planning a site visit, and employment opportunities for Aboriginal people arising from the project. - Ongoing engagement since, including through the ACHA process. - Phone calls, emails and in-person meetings conducted with representatives. Intention to provide funds and/or collaborate with the Bangerang People to incorporate an initiative(s) into the overarching Community Enhancement Fund. - Flow Power followed up in January 2026 requesting a meeting to discuss potential collaborations / benefit sharing initiatives.
Government and elected representatives	Federation Council	27 March 2025	Written correspondence	Initiated the first correspondence/ outreach to the council.
		6 May 2025	Online meeting	Introduced project formally to Council's planning team.

Stakeholder group	Specific stakeholder	Date/s	Tools	Details
				Councillors appeared neutral about the proposed project. Concerns raised included about an associated neighbour subdivision, dust during construction, water access and lack of local waste disposal, traffic impacts during construction and bushfire management.
		20 May 2025	In-person meeting	- During the Community Day event, met with Mayor Cheryl Cook and several other Councillors who were either neutral or positive about the proposed project. There was interest in partnership opportunities with local businesses. - Some concerns raised included about visual impact, worker accommodation and bushfire risk.
		21 October 2025	In-person meeting	- Provided a project briefing to Council, outlined the Community Enhancement Fund and invited feedback on the proposed structure for a Voluntary Planning Agreement between Flow Power and Federation Council. - Councillors raised noise as a concern and raised questions on the structure and timing of the Voluntary Planning Agreement.
		30 October 2025	Online meeting	Discussion between Flow Power, Federation Council staff and Corowa Landcare on the opportunity to fund a rehabilitation project for the Whitehead St Wetlands through the Voluntary Planning Agreement with Council or the Community Enhancement Fund.
		31 October 2025	Email	Sent Community Day invitation.
		4 November 2025	Email	Provided first draft of the proposed MoU to Council after presenting to Council in late October and receiving feedback.
		4 December 2025 & 18	Virtual meeting, email	Met with Manager: Planning and Development at Federation Council to clarify MoU terms.

Stakeholder group	Specific stakeholder	Date/s	Tools	Details
		December 2025		Sent updated response to the Council's MoU suggestions; requested their feedback / input.
		8 January 2026	Email	Follow-up with Manager: Planning and Development at Federation Council seeking an update on MoU terms.
	Indigo Shire Council	29 October 2025	In-person meeting	Project development update, including commencement of discussions about a VPA that captures community benefits sharing arrangements. Mostly positive reception, noting council advise they will seek to re-commence VPA discussions post approval of project.
	Department of Planning, Housing and Infrastructure (NSW)	30 May 2025	Online meeting	- Pre-lodgement meeting with lead DPHI planner for the Project ahead of lodgement of scoping report. - Discussed key EIS impact areas – noise, biodiversity, traffic and transport. Project team was asked to provide detailed modelling for light and heavy vehicles. - Other topics discussed included water (identify water sources), engaging councils on the Victorian side and working on benefits sharing with Council before EIS submission.
		15 October 2025	Online meeting	- Pre-lodgement meeting with lead DPHI planners for the Project ahead of lodgement of EIS. - Discussed key EIS impact areas – noise, biodiversity, traffic and transport, neighbour and wider community engagement and engagement with Federation Council.
Local industry	Essential Energy	August 2024 onwards	Mixed Method	- Met with a representative from Essential Energy (Substation Owner) at the first Community Day to brief and update on project. - Ongoing discussions related to the Project's grid connection considerations.

Stakeholder group	Specific stakeholder	Date/s	Tools	Details
	Workforce Australia	17 November 2025	Online meeting	Discussion with Workforce Australia representative for Murray Riverina Jobs to discuss potential synergies for local workforces and will be an ongoing discussion.
	Industry Capability Network (ICN)	November 2025	Online meeting	- Project update and discussion to seek listing of project work packages EOI on ICN Gateway to inform local and regional industry of upcoming opportunities and target Project milestones. - Data sharing from ICN about existing regional businesses and capability to inform appropriate local content targets for both the Project and for the socio-economic impact assessment within this report.
Local media	Corowa Free Press	22 October 2025	Newspaper article	- Coordinated and responded to reporter's queries about the project. See Appendix D, Section 6 for Corowa Free Press article. - Article released outlined key project information, including ways the community can provide feedback on the project through the EIS process.
Local business	Dickins Engineering	20 November 2025	In-person meeting	At the second Community Day a representative from Dickins Engineering attended to discuss project opportunities for local businesses.
	List of businesses from stakeholder mapping	3-10 November 2025	Combination of emails and in-person	Distribution of project information and invitations to Community Day drop-in centre event at Corowa TAFE NSW campus to ~30 local businesses that align with forecasted work-packages during construction stage.
	Local accommodation providers	March 2026	Combination of emails and calls	- Initial discussions with the following accommodation providers for a potential availability for workers accommodation during the construction period: - Federation Motel Resort

Environmental Impact Statement

Corowa Battery Energy Storage System

Stakeholder group	Specific stakeholder	Date/s	Tools	Details
				• Statesman Motor Inn • Corowa Bindaree Holiday Park • Wine Village Motor Inn • Motel Woongarra • Howlong Caravan Park
	Local water carting providers	February-March 2026	Phone calls	• Initial discussions with the following water carting providers for potable water supply during constructions: • Whippet Transport • A P Delaney & Co • Hunkin Water Cartage

5.1.5. Summary of consultation findings

Overall sentiment

In early engagement with neighbours, the Applicant received a mixed response to the Project, with negative- and neutral-leaning responses to the Project. However as ongoing engagement occurred, more information became available and the Applicant built relationships, sentiment towards the Project has become more varied, leaning towards neutral.

During the EIS phase, sentiment toward the Project has been neutral-to-negative, with the main concerns including noise and visual impacts, traffic impacts, bushfire risk and impacts on property values. Feedback received from stakeholders has directly driven significant layout changes and increased vegetation screening. After engaging with stakeholders from April to October, the Applicant held a second community day in November. The event was heavily advertised, and invited all key stakeholders, the wider community, and over 30 local businesses to attend. Low interest and attendance was noted, and no opposition groups were formed or attended.

Summary of key issues raised and outcomes

A summary of key issues raised and how they have shaped the Project is provided in Table 5-6.

Table 5-6 Key issues and opportunities arising from the engagement process

Key issue	Outcomes
Noise impacts	- Significant changes to the layout proposed in the Scoping Report. - A Noise and Vibration Impact Assessment was conducted as one of the first detailed assessments. - Based on the recommendations of the study, a 3.5m noise wall will be installed. As such operational noise impacts at all receivers will be compliant.
Visual and landscape amenity impacts	- Significant changes to the layout proposed in the Scoping Report. - A Landscape and Visual Character Impact Assessment was conducted. Despite the findings of the assessment indicating the visual impacts have low significance, the Applicant has committed to screening the Project Site to further reduce visual impacts of the Project.
Fire / hazards concerns	- Significant changes to the layout proposed in the Scoping Report. - A Bushfire Assessment has been undertaken, which informed the determination of an appropriate Asset Protection Zone (APZ). - A Preliminary Hazard Assessment (PHA) has been undertaken to inform safe separation distances between infrastructure and guide emergency management planning for the Project moving forward.
Road access and condition impacts	- Significant changes to the layout proposed in the Scoping Report. - A Traffic Impact Assessment was undertaken as one of the first detailed assessments and was used to develop the most suitable transport route for construction traffic. The results of this assessment indicate that the road network has sufficient capacity to accommodate the traffic volumes and types

Key issue	Outcomes
	that will be generated by the Project. The site access and one further intersection will require upgrade to accommodate Project-related traffic.

5.1.6. Submission stage engagement, pending approval

The EIS will be placed on public exhibition for a minimum of 28 days in accordance with the EP&A Act and SSD approval pathway. Information about the EIS will be made available on the DPHI Major Projects Portal: <https://www.planningportal.nsw.gov.au/major-projects>.

Table 5-7 outlines a high-level engagement plan for the next stage of the Project.

Table 5-7 Engagement activities for the next phase of the Project

Objectives	Key actions
1. Ensure public awareness of exhibition period: Publicise the exhibition timeframes and submission process clearly.	1. Advise the community and other stakeholders via the Project website, newspaper print and online advertisements of the opportunity to review the EIS and make written submissions to DPHI about the Project. 2. Host meetings with local stakeholders, if requested during the exhibition period, to answer further questions.
2. Post EIS exhibition period, respond to submissions: focus on responding to key and substantial issues raised	3. Prepare a submissions report for DPHI which responds to community and stakeholders' comments on the EIS. This will be publicly available on the DPHI Major Projects website.
3. Retain status as 'active member' of the community: Continue proactive engagement	4. Communicate with previously engaged community members to inform them on next steps for the Project and provide further newsletters for those who opt in for future updates. 5. Email stakeholders the Proponent has met with to update them on timing and provide responses to their questions or concerns that were raised during consultation. 6. Hold other additional stakeholder meetings and liaison, as required.

5.2. First Nations engagement in relation to Aboriginal Cultural Heritage

The Applicant is committed to ongoing engagement and collaboration with First Nations peoples, businesses, and groups for the duration of the Project's lifecycle. The below process specifies engagement in relation to the Cultural Heritage aspect of the Project.

Aboriginal community engagement was conducted as part of the Aboriginal Cultural Heritage Assessment (ACHA). Additional details regarding Aboriginal community engagement are available in the ACHA, attached as Appendix E2.

5.2.1. Stage 1

The Aboriginal community engagement process is conducted in four stages for cultural heritage: the purpose of Stage 1 is to identify Registered Aboriginal Parties (RAPs) who wish to be consulted about the Project. To facilitate this, an advertisement was placed in the Border Daily on 06 June 2025, to solicit expressions of interest.

A letter seeking information was sent to the following agencies, dated 06 June 2025:

- Office of the Registrar, *Aboriginal Land Rights Act 1983*
- Heritage NSW
- National Native Title Tribunal
- National Native Title Services Corporation Ltd (NTSCORP)
- Albury and District Local Aboriginal Land Council (LALC), Federation Council, and the Murray Local Land Services.

Letters were sent to individuals and groups whose contact details were provided by the above-mentioned agencies.

The following groups or agencies registered to be consulted as RAPs:

- Albury and District LALC
- Bundyi Aboriginal Cultural Knowledge
- South West Yiradyuri Clans (SWYC)
- Aboriginal Cultural Heritage Education Pty Ltd.

5.2.2. Stage 2

The purpose of Stage 2 is to provide information about the Project to the RAPs. Detailed Project information was provided in the assessment methodology that was issued to all RAPs for their consideration, on 13 August 2025.

5.2.3. Stage 3

The aim of Stage 3 is to acquire information regarding Aboriginal cultural values associated with the Project through RAP consultation and field work. To inform the RAPs of the assessment, an assessment methodology was issued to the RAPs for their consideration on 13 August 2025.

This document provided the archaeological context of the Development Footprint, a description of the proposed survey, and requested cultural values to be considered in the assessment.

RAPs were provided the stipulated 28 days in which to review and comment on the assessment methodology. The closing date for comment was 10 September 2025. Table 5-8 details the feedback received and the responses provided.

Table 5-8 Feedback received and responses provided regarding assessment methodology

Feedback received	Project response provided
Section 3.3.1. Archaeological investigations near the study area. Page18 Section OzArk 2025 I have concerns that the report states that “Ground surface visibility was extremely limited (10%)” Response: That should warranty another survey when conditions are more favourable to be able to see the ground.	Thank you for your comment on this other project. Please note that while visibility was low during the survey completed by OzArk (2025), the area had been previously assessed by Spenneman (1994) (summarised in Section 3.3.1 of the draft assessment methodology) which recorded several Aboriginal sites across the OzArk (2025) study area for the Corowa Sewerage Treatment Plant. The summary for OzArk (2025) will be amended so that it is clear this area was previously assessed by Spenneman (1994).
Section 4.3 RESEARCH QUESTIONS: One of your questions is “Is there evidence to suggest that Aboriginal people were using the area earlier than the mid to late Holocene? “ Response: Evidence is all about in this area and include the finding of several people who have been dated at about 18,000 years old	Thank you. Noted.
Section 5.3 SURVEY METHODOLOGY Point 2 states “Some areas may not be physically surveyed if the RAPs and OzArk staff agree they are too disturbed or possess a very low likelihood of sites” Response: Regardless of any disturbance the whole area needs to be surveyed and looked over.	Noted. Following the Stage 2/3 review period, Section 5.3 will be amended to reflect this comment.
I also ask to have test excavation carried out in this location.	As noted in Section 5.2 of the draft assessment methodology, one of the aims of the field survey will be to determine if any landforms of the study area require test excavation to understand the archaeological potential at a particular location.
Can you also advise which RAPs attended your survey work and if none I would ask for this work to be done again and have RAPs onsite?	The survey for this project has not yet been undertaken. It will be completed following the end of the Stage 2/3 assessment methodology review period.
Also, any and all people who work on or with this project must have a Wiradjuri Cultural Induction delivered to them by a Wiradjuri knowledge holder who has training and assessment qualifications.	The unanticipated finds protocol and requirements for cultural awareness training will all be outlined in the forthcoming Aboriginal Cultural Heritage Assessment Report (ACHAR). You’re comments on this will be taken on board.

The field survey as per Stage 3 of the ACHA was undertaken with the assistance of Dozer Atkinson, representing Aboriginal Cultural Heritage Pty Ltd.

5.2.4. Stage 4

Stage 4 involved the production of a draft ACHAR that was issued to all RAPs for consideration. The ACHAR documents the results of the assessment, outlines opportunities for the conservation of Aboriginal cultural values, and suggest recommendations for the management of Aboriginal objects should impacts to these objects be unavoidable.

One response was received based on review the draft ACHAR, as detailed in Table 5-9.

Table 5-9 Feedback and responses regarding the draft ACHAR

Feedback	Project response
Firstly, could you please clarify whether a thorough cultural heritage survey was conducted at the intersections of Riverina Highway and Whitehead Street? This area is of particular interest, and confirmation of its inclusion in the assessment would be appreciated.	The road intersections at Riverina Highway and Whitehead Street were subject to survey. These sections are small, highly disturbed areas which cover active transport corridors. Figure 6-1 on page 46 of the ACHAR shows the recorded pedestrian tracks across these areas.
Additionally, I have reviewed the area in question and noted the presence of a significant wetland adjacent to the proposed project area. Can you confirm whether the proximity to this wetland was considered in your report, and if so, what measures were taken to address any potential impacts? See attached map, page 2, that indicates the wet land area that I have concerns over	Section 4.3 of the ACHAR identifies two seasonal wetlands near the proposed BESS location: Whitehead Street Wetlands approximately 1.1 km to the south and Nulla Nulla Swamp approximately 1.2 km to the northwest, the latter being the one provided in your map. The locations of these wetlands, and other surrounding hydrological sources (particularly the Murray River), have been considered as part of this assessment.
Given that this location is recognised as a traditional Wiradjuri travel route, I believe that test pits should be conducted in this area to ensure appropriate cultural and archaeological investigation. The significance of these routes warrants careful attention and thorough examination.	As outlined in the assessment methodology provided as part of Stage 3 of the Aboriginal cultural heritage consultation requirements for proponents (the ACHCRs; DECCW 2010) one of the aims of the survey was to determine if any landforms of the study area require test excavation to understand the archaeological potential at a particular location. Section 6.4 of the ACHAR states that no landforms were identified as having subsurface potential. The reasoning for this conclusion is outlined in Section 6.6 of the ACHAR.
I would also like to inquire why only one Registered Aboriginal Party (RAP) was present on site during the cultural survey, and why other RAPs, particularly those representing Wiradjuri interests, were absent. The involvement of multiple RAPs is crucial for a comprehensive and respectful assessment.	Due to the size of the study area, it was considered that the survey could be adequately undertaken with one archaeologist and one RAP. OzArk acknowledges that the land within the study area is within the boundary of the Albury and District Local Aboriginal Land Council (LALC). It is also acknowledged in the ACHAR that some

Feedback	Project response
Furthermore, as the Albury Aboriginal Lands Council has an active land claim in the Corowa area, and is a Wiradjuri organisation, the area should be regarded as Wiradjuri and cross over country. This recognition is fundamental to ensuring appropriate engagement and representation throughout the project. I reiterate my concern regarding the absence of Wiradjuri RAPs during the cultural survey and request clarification on why their participation was not done.	sources recognise the Corowa area as being within Wiradjuri Country while others recognised Corowa as being part of Bangerang Country, and that the land on either side of the Murray River is often considered a boundary zone in which multiple groups would interact and share in the river's resources. As set out in Section 3.4 of the ACHCRs (DECCW 2010) registration as a RAP enables all RAPs to be involved with the consultation associated with the project including input into determining the cultural values of the landscape in which the project is located and providing comment on the management of any identified cultural values. Registration as a RAP, however, does not automatically imply that all RAPs will be involved in the fieldwork associated with the survey. Fieldwork comprises 'service provision' and sits outside the consultation process.
Also, it is important to confirm that cultural awareness programs will be delivered to all staff and contractors associated with this site and project prior to any soil disturbance. Such measures are essential to promote understanding and respect for the cultural values of the area.	The ACHAR recommends that all staff and contractors involved in the proposed work undergo a cultural heritage induction.

No specific cultural values were identified by the RAPs regarding the Development Footprint, however, the strong cultural values of Aboriginal communities towards landscapes and cultural heritage sites are recognised.

5.3. Agency engagement

5.3.1. Agency consultation

As part of preparing the EIS for the SSD development application, the SEARs require that the relevant State or Government authorities, infrastructure and service providers, community groups, affected landowners, exploration licence holders, quarry operators and mineral title holders be consulted. The SEARs themselves also incorporate agency requirements for the EIS, developed by the agencies in response to the Scoping Report. The SEARs, including a cross-referenced table showing where each specific matter is provided for in the EIS, is included in Appendix A.

Table 5-10 summarises further agency consultation undertaken since the issue of the SEARs, during the development of the EIS.

Table 5-10 Agency consultation summary

Agency	Issue	Detail
Essential Energy (EE)	Connection of Project to 132kV	The Project has had regular contact with Essential Energy since August 2024 for this site and has coordinated closely with EE. This included on the non-contestable design, where EE have advised that a 72m x 50m portion of land is what is estimated to be required to facilitate the substation expansion for connection of the Project. The Project continues to work closely with EE on its Connection Application, and associated power system modelling.
Transport for NSW (TfNSW)	Assistance in development of Traffic Impact Assessment for the Project	The Project reached out to TfNSW to request feedback on appropriate growth rates to apply to the Federation Way and Honour Avenue to inform the traffic modelling for the Project, and if there was any other feedback on top of the agency advice. TfNSW's response advised to use 2.0% annual growth rate for the traffic model.
Rural Fire Service (RFS)	Bushfire protection measures proposed for the Project	Flow Power reached out to Southern Borders RFS for feedback on the Project design and proposed bushfire protection measures on 26 November 2025 via phone and email; and sent a follow-up email on 10 December 2025. No response as of date.
Conservation Programs, Heritage and Regulation Group (CHPR)	Engagement around the proposed approach to the timing of flood modelling.	Applicant proposes to delay modelling until after the EIS has been submitted to allow the Project Team the opportunity to incorporate a higher level of civil design detail into the modelling exercise. CHPR has accepted this approach, stating that the EIS should: 1. Clearly identify which SEARs have been addressed to date through the qualitative assessment. 2. Commit to completing flood modelling to quantify the development's impact on flood behaviour, demonstrate that there are no detrimental changes in flood affectation, and fully address the SEARs in their letter dated 11 July 2025. 3. Consider elevating critical electrical and battery infrastructure to at or

Agency	Issue	Detail
		above the PMF, where practicable, to ensure resilience during extreme flood events.

06 Assessment of Key Issues



6. Assessment of key issues

6.1. Biodiversity

6.1.1. Approach

This section summarises the findings of the Biodiversity Assessment Development Report (BDAR) undertaken by NGH, a copy of which is provided in Appendix E1. The BDAR provides an assessment of the potential biodiversity impacts of the Project and the recommended measures to mitigate them.

The BDAR addresses biodiversity matters identified in the SEARs (DPHI, 2025), provided in full in Appendix A. This includes assessment of biodiversity values and impacts, likely impacts on aquatic biodiversity, cumulative impact assessment on biodiversity values and offset obligations.

The assessment follows the Biodiversity Assessment Method (BAM), required under the *Biodiversity Conservation Act 2016*. In addition to the *Development Footprint*, key definitions are prescribed under the BAM and utilised in the in the BDAR:

- **Subject land:** The Subject land is the study area where Stage 1 of the BAM has been applied, and where vegetation surveys and targeted threatened species surveys have been undertaken. It covers all areas that may or may potentially be used for the Project but is larger than the Development Footprint to allow for avoidance of biodiversity constraints through project design.
- **Assessment area:** the assessment area includes the subject land plus the area of land within the 1,500m buffer zone surrounding the proposed BESS site, and a 500m buffer zone around the roadside (linear feature). The assessment area is used to consider landscape features and biodiversity values in the locality.

As the proposed clearing of native vegetation associated with the Project will be less than 1ha, the 'small area' streamlined assessment methodology was applied to the BDAR in accordance with Appendix C of the BAM 2020, along with the streamlined assessment module for planted native vegetation. The methods employed in undertaking the BDAR include:

- A desktop assessment of aerial imagery and available GIS
- Initial field surveys, conducted during September 2025, including the use of Rapid Assessment Points (RAPs), random meanders and VI plots
- Classification, calculation and mapping of native vegetation cover
- Identification and mapping of Plant Community Types (PCTs) and Threatened Ecological Communities (TECs)
- Vegetation integrity surveys
- Threatened flora surveys
- Threatened fauna surveys

The assessment was prepared in tandem with the development of the Project in order that recommendations to avoid and minimise impacts to native and threatened flora, fauna and habitat could be captured within the Project design.

6.1.2. Existing environment

Background features

Landscape features

The Subject Land is dominated by cropping, as is the immediate surrounding land use. The surrounding landscape is characterised by rural farmlands and agricultural fields, with scattered remnant paddock trees and roadside remnant woodlands. The past clearance and associated agricultural land use has resulted in a highly fragmented habitat, with low levels of connectivity.

The Subject Land falls within the Riverina Interim Biogeographical Regionalisation for Australia (IBRA) and the Murray Fans IBRA subregion (refer to Figure 6-1).

The Subject Land falls across two Mitchell Landscapes; these are:

- Murray Scalded Plains – this is the dominant Mitchell Landscape within the Project Site
- Murray Source-bordering Dunes

Hydrology

Multiple farm dams in various conditions occur across the Assessment Area, with one occurring within the Subject Land although this was determined to be dry during the field survey. No streams or creeks occur within the Subject Land. One Strahler stream occurs within the southern part of the Assessment Area, being the Murray River - a 9th Order stream. The Murray River is also mapped as a Key Fish Habitat (KFH) under the NSW Fisheries Management Act 1994 (FM Act) and classified as Biodiversity Values (BV), as biodiverse riparian land (refer to Figure 6-2).

Several wetlands occur in the area surrounding the Subject Site, including the Nulla Nulla Swamp and the Whitehead Street Wetland. These are known habitat for a population of Sloane's Froglet (*Crinia sloanei*), listed as Endangered under the BC Act and EPBC Act.

Soil hazard features

The *NSW Acid Sulphate Soils Risk* mapping (eSpade, 2025), *Environmental Protection Authority Contaminated Lands Records* (eSpade, 2025), and *Environmental Planning Instrument – Salinity Mapping* (eSpade, 2025) were reviewed, and no mapped areas or records were identified within the Subject Land.

Habitat connectivity

A patch of woodland occurs to the north of the Subject Land, isolated from other areas of native vegetation. Another patch of woodland occurs in the south of the Subject Land, providing some connectivity. This patch joins as 'stepping stone' connectivity with trees along Whitehead Street and the west of Bullecourt Road. Given the highly disturbed nature of the surrounding landscape and the large gaps between remaining patches, they are not considered to contribute substantially to significant habitat connectivity in the state or region. These patches are considered to provide 'stepping stone' connectivity for highly mobile arboreal species such as birds.

No areas of outstanding biodiversity value occur within the Subject Land.

Native vegetation cover

The native vegetation cover within the Assessment Area was estimated to be 336ha out of a total area of 1,458ha. Table 6-1 summaries the extent of native vegetation cover within the Assessment Area. This equates to approximately 23% native vegetation coverage and this number was entered into the BAM-C for this assessment. Native vegetation extent is mapped in Figure 6-3 and summary of the extent of native vegetation is provided in Table 6-1.

Table 6-1 Native vegetation cover in the assessment area

Assessment area (ha)	1,458ha
Total area of native vegetation cover (ha)	336ha
Percentage of native vegetation cover (%)	23.05%
Class (0-10, >10-30, >30-70 or >70%)	>10-30

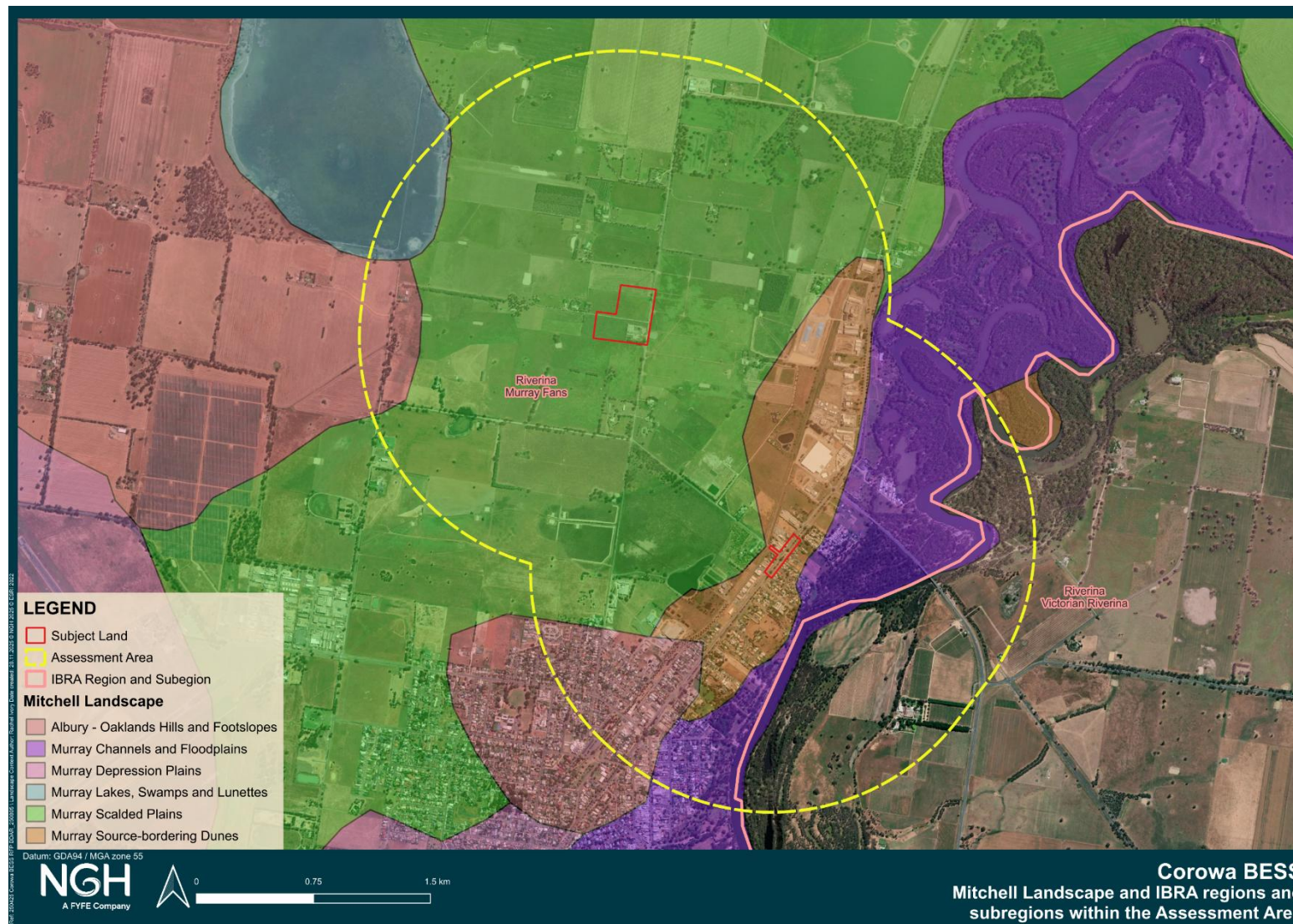


Figure 6-1 Mitchell Landscapes and IBRA regions and subregions within the Assessment Area

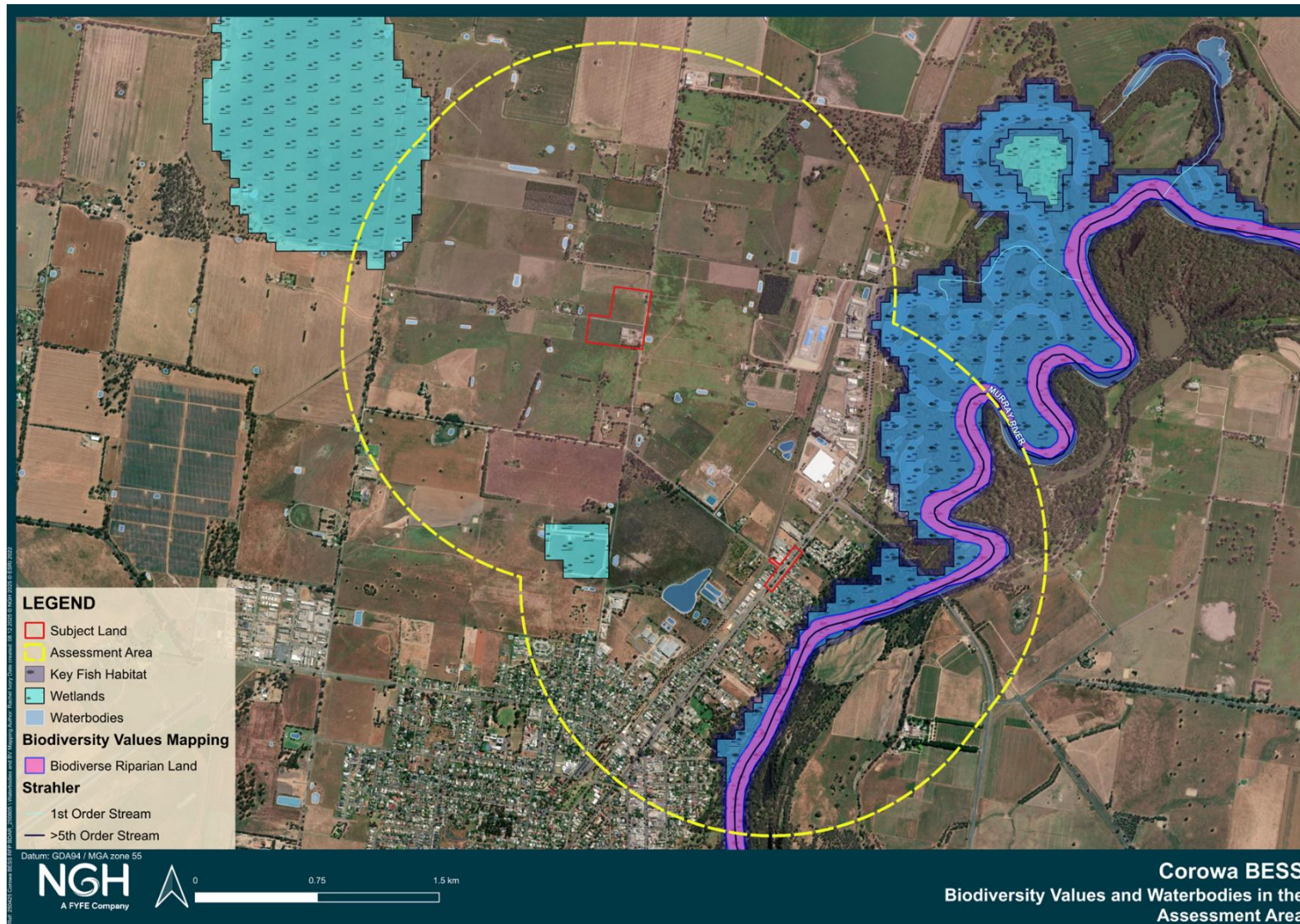


Figure 6-2 Biodiversity values and waterbodies within the Assessment Area

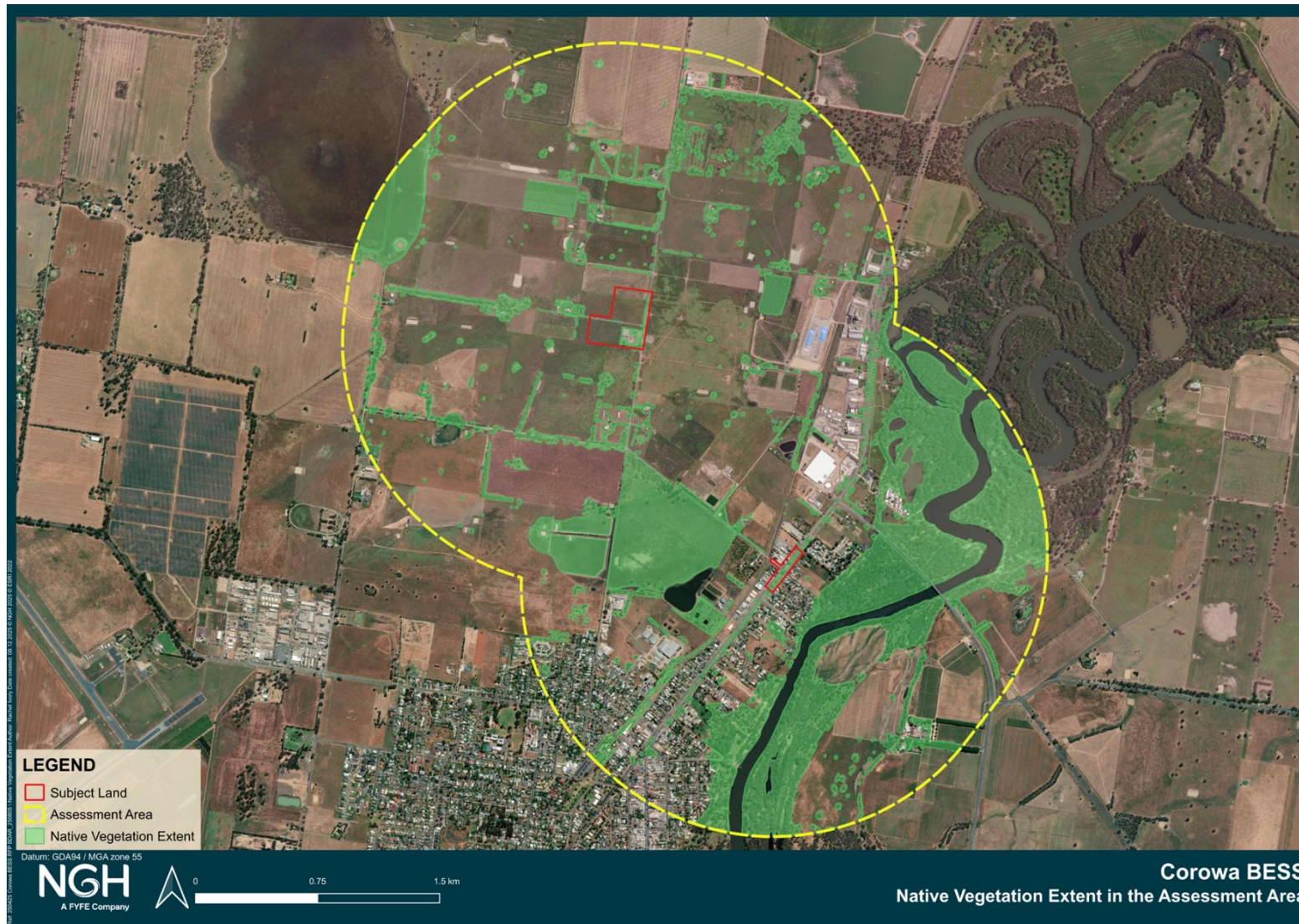


Figure 6-3 Native vegetation extent within the Assessment Area

Areas that may be subject to impacts

Native vegetation

Within the subject site, land has been predominantly cleared for agricultural use, including cropping and livestock production. Some native vegetation in the form of remnant woodland and planted native vegetation occur. The remnant woodland occurs alongside Whitehead Street. Derived native grasslands are also present along the road reserve adjacent to Whitehead Street and surrounding the Corowa Substation. Planted native vegetation occurs inside the Corowa Substation lot, along paddock fence lines, along the internal access track at 275 Whitehead Street, and along Honour Avenue and Bullecourt Road intersection.

Prior to field surveys, NSW SVTM showed PCT 76 *Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions* as occurring within the Subject Land, to the south of the Corowa Substation. This area was mapped at 0.3ha.

Field inspections confirmed PCT 76 as present within the Subject Land, however minor vegetation mapping changes were made. Within the SVTM patch of PCT 76, the eastern most trees were all identified as Pine Trees (*Pinus* sp.) with no native understory. These trees have been mapped as Exotic Planted Vegetation instead of PCT 76. Additionally, the vegetation surrounding the substation is mapped as 'PCT 0 – Not classified' in the SVTM. Field surveys confirmed this vegetation to be a derived grassland (DG) form of PCT 76 and has been mapped accordingly. Two trees are visible on aerial imagery towards the north of the Subject Land that are mapped as 'PCT 0 – Not classified' in the SVTM. Field surveys confirmed these trees to be Grey Box (*Eucalyptus microcarpa*) and have been mapped as PCT 76 as a result. The vegetation along the roadside of Whitehead Street was also confirmed to be a derived grassland form of PCT 76 during field surveys and has been mapped accordingly.

Planted native vegetation was observed during field surveys within the substation, along paddock fence lines, along the internal access track at 275 Whitehead Street, and along Honour Avenue and Bullecourt Rd intersection. These areas are mapped as 'PCT 0 – Not classified' in the SVTM, however have been mapped as Planted Native Vegetation in the BDAR. All areas of planted vegetation were assessed as per Appendix D of the BAM (Streamlined assessment module – planted native vegetation).

Areas that are not native vegetation

The Subject Land being investigated for the BESS siting is mostly exotic, dominated by sown and cultivated pastures of Ryegrass (*Lolium* sp.) used for grazing and cropping (hay). Additionally, planted exotic vegetation consisting of Pine Trees (*Pinus* sp.) and Ash Trees (*Fraxinus* sp.) are present within the Subject Land, as well as non-native lawns and gardens along the road verges of Honour Avenue and Bullecourt Road.

Areas of planted vegetation

Overall, eleven patches of planted vegetation were mapped across the Subject Land. Only one of these patches was able to be assigned to a PCT, being PCT 76. All other patches were assigned as either planted native, planted exotic or ornamental streetscape depending on the species that were identified.



Figure 6-4 Planted vegetation within the Subject Land (Map 1 of 2)



Figure 6-5 Planted vegetation within the Subject land (Map 2 of 2)

Plant Community Types

One Plant Community Type (PCT) was identified within the Subject Land. The PCT identified and described in Table 6-2 and its extent is shown in Figure 6-6 and Figure 6-7.

Table 6-2 PCTs identified within the Subject Land

PCT ID	PCT name	Subject Land area (ha)	Development Footprint area (ha)
76	Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions	1.20	0.62
Total Area		1.20	0.62

Within the subject land, this PCT comprised of one remnant canopy tree species being Grey Box (*Eucalyptus microcarpa*) along Whitehead Street. Planted Mugga Ironbark (*Eucalyptus sideroxylon*) and Kurrajong (*Brachychiton populneus*) are present around the substation. Native ground cover species within PCT 76 in the Subject Land are comprised of Common Couch (*Cynodon dactylon*), Windmill Grass (*Chloris truncata*), Red Grass (*Bothriochloa macra*), Climbing Saltbush (*Einadia nutans*), Corrugated Sida (*Sida corrugata*), Knob Sedge (*Carex inversa*), Walwhalleya proleta, *Oxalis perennans*, Australian Stonecrop (*Crassula sieberiana*), *Lomandra* sp. and *Juncus* species. Introduced ground cover species include, but are not limited to, Ryegrass (*Lolium perenne*), Soft Brome (*Bromus hordeaceus*), Onion Grass (*Romulea rosea* var. *australis*), Barrel Medic (*Medicago truncatula*), Catsear (*Hypochaeris radicata*) and Wild Oats (*Avena fatua*).

Within the Subject Land, PCT 76 occurred in four conditions:

- PCT 76 planted:** This zone occurs as mid to tall woodland, dominated by Grey Box (*Eucalyptus microcarpa*) both remnant and planted. The mid-stratum is sparse comprising of one species, with an exotic-dominant understorey. The native ground cover is approximately 1.8%.
- PCT 76 woodland:** This zone occurs as mid to tall woodland, comprised of two remnant Grey Box (*Eucalyptus microcarpa*) individuals. The mid-stratum is absent, with an exotic-dominant understorey. The native ground cover is approximately 3.4%, comprised mostly of Common Couch (*Cynodon dactylon*).
- PCT 76 Derived Grassland (DG) substation:** This zone occurs as a low condition grassland surrounding the substation and subject to regular mowing and herbicide spraying. This zone contains a native ground cover of approximately 15.7%, with Red Grass (*Bothriochloa macra*) comprising 15% of this. Two dead stags in this zone, which were *Eucalyptus microcarpa* individuals suggest that this area was once Grey Box woodland prior to land clearing for the substation.
- PCT 76 DG roadside:** This zone also occurs as a low condition grassland, however, was classified separately due to being located alongside Whitehead Street with different land management. This zone contains a very low native ground cover (1.1%). Remnant Grey Box trees along Whitehead Street suggest this area was once Grey Box woodland prior to land clearing.

Threatened Ecological Communities

One Threatened Ecological community (TEC) was determined to be present on the Subject Site, being the BC Act-listed *Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Penepplain, Nandewar and Brigalow Belt South Bioregions*.

The vegetation does not align with the federally listed TEC *Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia*.

The extent of the TECs identified as present within the Subject Land shown in Figure 6-6 and Figure 6-7.

Threatened species surveys

Fauna

A BioNet search was undertaken on 7 August 2025 and identified 28 threatened species with records within 10km of the Subject Land. No threatened species records are, however, present within the Subject Land.

As the Project is being assessed under Appendix C of the BAM, the 'Small Area' Streamlined Assessment Tool in BAM-C was utilised (Part 4 Development – small area). This Streamlined Assessment Tool generates a simplified list of candidate species requiring further assessment.

Under the Small Area assessment, only species detected incidentally on the Subject Land, or species listed as a Serious and Irreversible Impact (SAIL) entity require further assessment. Table 6-3 below lists all the candidate species identified within the BAM-C as being associated with the PCT present within the Subject Land under the Small Area assessment.

Two additional candidate species were added into the BAM-C due to being detected from an ANABAT acoustic recorder:

- Large Bent-winged Bat (*Miniopterus orianae oceanensis*)
- Southern Myotis (*Myotis macropus*).

Table 6-3 Candidate species identified in BAM-C and included / excluded from assessment

Scientific Name	Common Name	Listing status		Further assessment
		BC Act	EPBC Act	
<i>Crinia sloanei</i>	Sloane's Froglet	Endangered	Endangered	Yes
<i>Lathamus discolor</i>	Swift Parrot	Endangered	Critically Endangered	No
<i>Miniopterus orianae oceanensis</i>	Large Bent-winged Bat (Breeding)	Vulnerable	Not Listed	No
<i>Myotis macropus</i>	Southern Myotis	Vulnerable	Not Listed	Yes

Two candidate species were able to be excluded from assessment due to the lack of habitat constraints as outlined within the BAM-C:

- Swift Parrot (*Lathamus discolor*)
- Large Bent-winged Bat (*Miniopterus orianae oceanensis*) (Breeding).

Only one species listed as a SAI candidate was required to be surveyed for, being Sloane's Froglet (*Crinia sloanei*). All other SAI species were excluded based on habitat constraints. Targeted threatened species surveys were undertaken, and it was determined that Sloane's Froglet is not present on the Subject Site and that further BAM assessment is therefore not required.

Flora

As described previously, under Appendix C of the BAM, only candidate species at risk of SAI are required to be assessed. Parallel field traverses were undertaken at 10 m intervals across the Subject Land for each corresponding survey period for the Slender Darling Pea (*Swainsona murrayana*), Silky Swainson-pea (*Swainsona sericea*) and a Spear-grass (*Austrostipa wakoolica*). The survey efforts found that the afore-mentioned species were not present on the Subject Site.



Figure 6-6 PCTs, TECs, vegetation zones and VI plot locations within the Subject Land (Map 1 of 2)



Figure 6-7 PCTs, TECs, vegetation zones and VI plot locations within the Subject Land (Map 2 of 2)

‘Avoid and minimise’ actions

The design of the Project is the result of an iterative process. The design has been adapted progressively as information regarding site constraints, potential impacts, and risks associated with the proposal have become available. The proposed Development Footprint has been located and designed to avoid and minimise impacts to native vegetation and biodiversity values as much as possible.

A summary of mitigation and avoidance measures and associated timelines and responsibilities for these measures have been detailed in Table 6-4 below.

Table 6-4 Avoidance and minimisation measures for direct, indirect and prescribed impacts

Action	Outcome	Timing	Responsibility
BESS site selection in mostly cropped paddocks	Reduced disturbance to natural ecosystems by choosing a location in previous and current cropped land, limiting impacts on native vegetation and wildlife habitat.	Project Design	Flow Power
Utilisation of existing access track	Avoided the need to construct a new road, thereby minimising additional habitat disturbance, protecting vegetation, and maintaining habitat connectivity.	Project Design	Flow Power
Proximity to existing Corowa substation	Minimised need for new infrastructure, which reduced potential biodiversity impacts associated with creating new transmission lines and infrastructure corridors.	Project Design	Flow Power
Removal of Whiteheads Road/Riverina Highway transport route and intersection upgrade	Prevent impacts to good condition woodland of PCT 76 and PCT 75. Prevented impacts to habitat connectivity and increased risk of vehicle strikes at this intersection	Project Design	Flow Power
Avoidance of woodland areas in Subject Land	Prevented disturbance to moderate condition BC Act listed TEC as well as hollow bearing trees	Project Design	Flow Power
Avoidance of hollow bearing trees	All of the hollow bearing trees that were recorded within the Subject Land have been avoided by the Project, therefore retaining potential habitat for fauna species.	Project Design	Flow Power

6.1.3. Potential impacts

Table 6-5 describes and assesses prescribed biodiversity impacts associated with the Project, in accordance with the Biodiversity Assessment Method.

Table 6-6 identifies potential indirect impacts to biodiversity arising from the Project. Residual direct impacts are set out in

Table 6-7. While most impacts are relevant to the construction stage, their duration is long-term, hence the importance of avoiding impacts wherever possible.

Table 6-5 Assessment of prescribed biodiversity impacts

Prescribed impact	Nature	Extent	Duration	Consequence
Impacts of development on human-made structures	Throughout the Subject Land there are human-made structures including the existing Corowa substation and three small culverts. The existing access track will be extended and widened as part of the Project.	Two of the culverts are likely to be altered as they occur within the Development Footprint, one at the entrance to the site where road upgrades are proposed to occur and one near the existing Corowa substation.	Impacts to human-made structures will occur during the construction phase only.	The consequence is that the Project would impact the culvert during the construction phase. No threatened species are considered to rely on the culverts and it is unlikely that this is going to increase impacts on threatened entities.
Impacts of development on non-native vegetation	Non-native vegetation occurs within and adjacent to the Subject Land. Non-native cropped vegetation exists within the Development Footprint, predominantly in the northern and southern paddocks of the existing access track and planted exotic vegetation occurs as patches along this access track. Ornamental streetscape plantings which are not considered native to the Corowa region are also present within the proposed road upgrade site at the intersection of Honour Avenue and Bullecourt Road.	Approximately 8.94 ha of non-native vegetation will be removed from the Development Footprint. This includes exotic crops, exotic planted vegetation, ornamental streetscape plantings, roads (sealed and unsealed), infrastructure and a dam.	Impacts to non-native vegetation will occur during the construction phase only.	8.94 ha of non-native vegetation will be removed from the Development Footprint. It is unlikely that the removal of this extent of non-native vegetation would have a significant impact on native threatened fauna due to the highly disturbed nature of this vegetation. There are no habitat features such as HBTs present within these areas of non-native vegetation.

Prescribed impact	Nature	Extent	Duration	Consequence
Impacts of development on habitat connectivity	Existing habitat connectivity is already highly fragmented within the locality due to past clearing. Woodland patches within the Subject Land provides some connectivity to the broader locality, mainly in linear corridors along roadsides. Connectivity is present for highly mobile arboreal species such as birds.	The Subject Land is already highly fragmented, with historically cleared native vegetation. Despite this, the proposed works may negligibly increase fragmentation and barriers to wildlife movement. The installation of fencing, road construction and BESS infrastructure is likely to impact connectivity. The species most likely impacted by changes to connectivity are those reliant on habitat within short distances to travel through the landscape.	Impacts to connectivity within the Development Footprint are expected to be permanent. Impacts are likely to reduce in the long term as biodiversity in the area adapts to the presence of the BESS.	The removal of planted vegetation in the form of native, exotic and ornamental streetscape plantings would have a minor impact on habitat connectivity within the locality. Due to the low condition of grasslands across the Subject Land, it is unlikely that threatened species inhabiting grasslands would be substantially impacted through its removal. Movement of both terrestrial and aerial species is unlikely to be substantially impeded by the proposal given the woodland patches have been avoided by the Project. Sloane's Froglet, known in the locality may be dependent on table drains to move across the landscape in wet periods and could be impacted by construction. Appropriate mitigation measures to include frog friendly passages across the road access and frog fencing to exclude amphibians from moving across the roadside during construction would minimise impacts on Sloane's Froglet.

Prescribed impact	Nature	Extent	Duration	Consequence
Impacts of development on water quality, water bodies and hydrological processes	The Project has the potential to indirectly impact water quality, waterbodies and hydrological processes that sustain threatened species.	The extent of impacts to this issue is likely to be minor. One farm dam is present within the Development Footprint which was dry during the August 2025 field surveys. Two additional farms dams are present 50 m west and 10 m east of the Subject Land. There are no other waterbodies present within the Development Footprint. These have potential to be subject to indirect impacts such as polluted runoff, reduction in water quality and sedimentation from construction activities.	Impacts to waterbodies will likely be confined to the construction period.	The potential consequences include reduced water quality that may impact threatened species that rely on these water sources and habitat, such as Southern Myotis and Sloane's Froglet. With appropriate mitigation measures in place, impacts are likely to be low. Correct implementation of safeguards/mitigation will prevent prescribed biodiversity impacts on waterbodies and water quality.
Impacts of vehicle strikes on threatened fauna, or fauna part of a TEC	Increased vehicle traffic during the construction phase of the Project could result in an increased risk of vehicle strikes to threatened fauna species.	The extent of vehicular strike is likely to be minor due to construction being conducted in daylight hours and speed limits being enforced.	Short-term construction phase	The overall consequence is expected to be negligible due to low fauna activity detected during surveys and construction being restricted to daylight hours to avoid impacts to Sloane's Froglet.

Table 6-6 Identification of potential indirect biodiversity impacts

Indirect impact	Impacted entities	Extent	Frequency/timing	Duration of the threat	Likelihood and consequences
Inadvertent impacts on adjacent habitat or vegetation. Accidental clearing or impacts to vegetation can occur where clearing boundaries are not delineated, or where machinery or materials are stockpiled within driplines of trees.	PCT 76 Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions. BC Act Listed TEC: - Inland Grey Box Woodland. Threatened species detected in close proximity to the Subject Land: - Southern Myotis (<i>Myotis macropus</i>) - Large Bent-winged Bat (<i>Miniopterus orianae oceanensis</i>)	Subject Land	Irregular during construction phase	Short-term	Likelihood of inadvertent impacts or clearing is high if boundaries are not clearly delineated. Consequence would be moderate for TECs and threatened entities habitat and low for other habitat and native vegetation. Consequences include: - Direct loss of native flora and fauna habitat - Potential for injury and mortality of fauna during clearing of fauna habitat. - Disturbance to fallen timber. - Disturbance to avoided HBTs and woodland - Increased edge effects
Reduced viability of adjacent habitat due to edge effects. Edge effects can occur where works and/or development occur in close proximity to vegetation, and can include shading, invasion	PCT 76 Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South	Within 100m of woodland and habitat edges	Ongoing	Long-term	The location of the Project is in a highly agricultural area, which has historically and presently contributed to edge effects. The areas of woodland are already

Indirect impact	Impacted entities	Extent	Frequency/timing	Duration of the threat	Likelihood and consequences
by exotic species, and increase in edge ratios as a result of clearing patches.	Western Slopes and Riverina Bioregions. BC Act Listed TEC: - Inland Grey Box Woodland. Threatened species detected in close proximity to the Subject Land: - Southern Myotis (<i>Myotis macropus</i>) - Large Bent-winged Bat (<i>Miniopterus orianae oceanensis</i>)				subject to invasion by exotic species. The Project is unlikely to contribute to any further edge effects for the native vegetation patches remaining within the Subject Land as there will be no impacts to woodland vegetation.
Increased risk of starvation, exposure and loss of shade or shelter Through vegetation removal, potential exists for sheltering locations to be impacted.	Threatened species detected in close proximity to the Subject Land: - Southern Myotis (<i>Myotis macropus</i>) - Large Bent-winged Bat (<i>Miniopterus orianae oceanensis</i>)	Unknown	Irregular during construction and operation phases	Long-term	The likelihood of such impacts upon threatened entities is low given the already disturbed nature of most of the Development Footprint and the woodland areas being avoided by the Project. The consequence on bioregional persistence is likely to be low.
Reduced viability of adjacent habitat due to vehicle traffic	Threatened species detected in close	Unknown	Construction phase	Short-term	The increased vehicle traffic may alter fauna activities and/or movements

Indirect impact	Impacted entities	Extent	Frequency/timing	Duration of the threat	Likelihood and consequences
Adjacent habitat has the potential to be impacted through increased vehicle traffic during construction	proximity to the Subject Land: - Southern Myotis (<i>Myotis macropus</i>) - Large Bent-winged Bat (<i>Miniopterus orianae oceanensis</i>)				Given the Subject Land occurs adjacent to existing public sealed roads with the surrounding vegetation already largely cleared, the likelihood and consequence would be low for most species.
Reduced viability of adjacent habitat due to increased noise Construction activities and operation of machinery can result in increased noise, causing disturbance to local fauna	Threatened species detected in close proximity to the Subject Land: - Southern Myotis (<i>Myotis macropus</i>) - Large Bent-winged Bat (<i>Miniopterus orianae oceanensis</i>)	Subject Land and adjacent extending habitat	Construction and operational phases	Short-term	Noise is expected to increase during construction as a result of increased vehicle traffic and machinery operation for clearing, construction and associated activities however the likelihood of impact is low due to minimal quality habitat within or adjacent to the Subject Land for threatened fauna.
Transport of weeds and pathogens from the site to adjacent vegetation Construction and operation involve the movement of machinery and personnel which have the potential to transfer weed seed, and soil containing pathogens.	PCT 76 Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions. BC Act Listed TEC:	Subject Land	Construction and operational phases	Long-term	Unmitigated, the likelihood of weed invasion and spread is high. The consequence is low to moderate, as the Subject Land and surrounds contain multiple weed species as a result of clearing and agricultural activities. Consequences to TECs and threatened species habitat through weed

Indirect impact	Impacted entities	Extent	Frequency/timing	Duration of the threat	Likelihood and consequences
	- Inland Grey Box Woodland. Threatened species detected in close proximity to the Subject Land: - Southern Myotis (<i>Myotis macropus</i>) - Large Bent-winged Bat (<i>Miniopterus orianae oceanensis</i>) Threatened species in the locality - Sloane's Froglet (<i>Crinia sloanei</i>)				encroachment is low with mitigation measures in place. The likelihood of spreading the amphibian chytrid fungus pathogen is low due to limited waterbodies within the subject land (with water being the primary source of transmission) however consequence could be high if the pathogen is introduced into the populations of Sloane's Froglet in the locality.
Cumulative loss of breeding habitat and competition for remaining resources A reduction in the number of HBTs in the landscape leads to competition and resource stress within both threatened and non-threatened hollow-dependent fauna.	N/A	N/A	N/A	Long-term	The likelihood is low. All suitable breeding habitat for threatened and non-threatened species (e.g. HBTs and suitable dams) are being avoided by the Project. Although one dam is being impacted, this dam was dry during the site visit in August 2025.

Indirect impact	Impacted entities	Extent	Frequency/timing	Duration of the threat	Likelihood and consequences
Trampling of threatened flora species Potential for threatened flora species within or immediately adjacent to Development Footprint being avoided by the works to be trampled by site staff	N/A	Within and adjacent to the Development Footprint	Construction and operational phase	Long-term	The likelihood of impact to threatened flora species through trampling is low. Targeted flora surveys were conducted throughout the native vegetation areas of the Subject Land in September and October 2025, and no threatened flora were detected. The consequence of loss of unknown individuals being trampled is minimal.
Inhibition of nitrogen fixation and increased soil salinity Increased soil salinity has the potential to occur as a result of vegetation removal impacting groundwater, bringing salt to surface.	PCT 76 Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions. BC Act Listed TEC: Inland Grey Box Woodland. Threatened species detected in close proximity to the Subject Land:	Within the Subject Land	Construction phase	Short-term	The likelihood is low, as the Subject Land is already disturbed by agricultural land use activities. The consequence would be moderate as salinity may impact ecosystem functionality.

Indirect impact	Impacted entities	Extent	Frequency/timing	Duration of the threat	Likelihood and consequences
	- Southern Myotis (<i>Myotis macropus</i>) - Large Bent-winged Bat (<i>Miniopterus orianae oceanensis</i>)				
Fertiliser drift Fertiliser drift is typically associated with agricultural activities and as such, the proposal is not considered likely to generate this impact.	N/A	N/A	N/A	Long-term	The likelihood is negligible. The Subject Land is already disturbed by agricultural land use activities and there is minimal native vegetation clearing. Fertiliser may be required to support the establishment of landscaped areas.
Rubbish dumping Increased accessibility through construction and operational roads, in addition to establishment of public access compounds may allow for access and dumping of rubbish	PCT 76 Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions. BC Act Listed TEC: Inland Grey Box Woodland. Threatened species detected in close	Subject Land	Construction and operational phases	Long-term	The likelihood of rubbish dumping is moderate during the construction phase if controls are not in place. The likelihood of rubbish dumping during operation are low due to limited public access to the BESS site. The consequence of wood collection is low given the already highly disturbed nature of the site.

Indirect impact	Impacted entities	Extent	Frequency/timing	Duration of the threat	Likelihood and consequences
	proximity to the Subject Land: - Southern Myotis (<i>Myotis macropus</i>) - Large Bent-winged Bat (<i>Miniopterus orianae oceanensis</i>)				
Wood collection Increased accessibility through construction and operational roads, in addition to establishment of public access compounds may allow for access and collection of firewood.	PCT 76 Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions. BC Act Listed TEC: - Inland Grey Box Woodland. Threatened species detected in close proximity to the Subject Land: - Southern Myotis (<i>Myotis macropus</i>) - Large Bent-winged Bat (<i>Miniopterus orianae oceanensis</i>)	Limited	Construction and operational phases	Long-term	The likelihood of wood collection is low due to limited public access to the BESS site. The consequence of wood collection is low given the already disturbed nature of the site and minimal fallen timber within the Subject Land.

Indirect impact	Impacted entities	Extent	Frequency/timing	Duration of the threat	Likelihood and consequences
Removal and disturbance of rock, including bush rock Increased accessibility through construction and operational roads, in addition to establishment of public access compounds may allow for access and collection of rock and bush rock.	n/a	Limited	Construction and operational phases	Long-term	The likelihood is negligible. No areas of significant rocky areas including bush rock were recorded during the field surveys within the Subject Land.
Increase in predatory and pest species populations Increased accessibility in addition to potential food waste storage has potential to increase access for predators and pest animals.	Threatened species detected in close proximity to the Subject Land: - Southern Myotis (<i>Myotis macropus</i>) - Large Bent-winged Bat (<i>Miniopterus orianae oceanensis</i>)	Subject Land and surrounding vegetation	Construction and operational phases	Long-term	The likelihood is low, as the Subject Land is highly agricultural and already accessible to predatory species such as foxes and pest species such as the house mouse. The consequence is low given the already disturbed nature of the site, and the small area of proposed clearing in comparison to the retained vegetation.
Disturbance to specialist breeding and foraging habitat Removal of hollow-bearing trees, woody vegetation and woody ground debris has potential to reduce area of specialist breeding and foraging habitat.	Threatened species detected in close proximity to the Subject Land: Southern Myotis (<i>Myotis macropus</i>)	Subject Land	Construction and operational phases	Long-term	The likelihood is negligible due to the woodland areas which contain these habitat features being avoided by the Project.

Indirect impact	Impacted entities	Extent	Frequency/timing	Duration of the threat	Likelihood and consequences
	Large Bent-winged Bat (<i>Miniopterus orianae oceanensis</i>)				
Earthworks and mobilisation of sediments Increased sediment load within waterways and soil movement have potential to occur as a result of construction works.	PCT 76 Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions. BC Act Listed TEC: Inland Grey Box Woodland.	Subject Land	Construction phase	Short-term	Unmitigated, there is a moderate risk of increased sediment load within waterways and soil movement. The unmitigated consequence of earthworks and mobilisation of sediments is moderate to high and include erosion and sedimentation and/or pollution of soils, dams and downstream habitats.
Increased risk of fire Fire ignition during construction as per EIS. Intrinsic fire risk of BESS sites.	PCT 76 Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions. BC Act Listed TEC: Inland Grey Box Woodland. Threatened species detected in close	Subject Land	Construction and operational phases	Long-term	There is a moderate risk of componentry failure resulting in a fire. The biodiversity consequences are likely to be high. Buffers around the BESS will reduce the likelihood of any fire spreading to surrounding vegetation.

Indirect impact	Impacted entities	Extent	Frequency/timing	Duration of the threat	Likelihood and consequences
	proximity to the Subject Land: - Southern Myotis (<i>Myotis macropus</i>) - Large Bent-winged Bat (<i>Miniopterus orianae oceanensis</i>)				

Table 6-7 Residual direct impacts to biodiversity

Describe impact	BC Act status	EPBC Act Status	SAIL entity	Project phase/timing of impact	Extent (ha)
Clearing for construction: reduction in community extent and integrity					
Native vegetation (all zones) and ecosystem credit species	N/A	N/A	N/A	Construction	0.62 ha
Planted native vegetation (non-PCT)	N/A	N/A	N/A	Construction	0.76 ha
Non-native vegetation (includes planted, cropped, roads and infrastructure)	N/A	N/A	N/A	Construction	8.94 ha

6.1.4. Offsetting requirements

The Project involves the removal of approximately 0.62ha of PCT 76 *Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions* in a low condition (derived grassland form), as well as 0.76ha of planted native vegetation that is not part of a PCT. Due to the low condition of this grassland, no ecosystem credit obligation is required under the NSW Biodiversity Offset Scheme. Additionally, no species credit obligation is required due to the Project's avoidance of suitable habitat for the candidate species.

Offsets required under the EPBC Act: A habitat evaluation was undertaken and did not identify any species listed under the EPBC Act to have the potential to be significantly impacted by the Project. As a result, the Project is not considered to require an EPBC Act referral or further assessment or offsets in accordance with the EPBC Act Offsets Policy.

6.1.5. Uncertainty

This assessment was based upon the species data available at the time of the study, and the environmental conditions, season, and time constraints imposed by the project for the field survey. No weather/climatic limitations to surveying were noted for any targeted candidate species.

The final impact footprint has yet to be determined however, adoption of a broad Development Footprint provides certainty that impacts have been fully assessed in accordance with the NSW BAM for changes that may come during detailed design.

The following assumptions underpin this impact assessment: All activities associated within the development would be contained wholly within the Development Footprint, including stockpiles, machinery manoeuvring, access tracks and infrastructure.

6.1.6. Mitigation measures

Impacts that cannot be avoided must be mitigated. Presented below are the mitigation measures required to be implemented to address residual direct and indirect, prescribed and uncertain impacts that have been identified in the previous sections as moderate or above likelihood. Mitigation measures proposed to manage impacts, including proposed techniques, timing, frequency, responsibility for implementing each measure, risk of failure, and an analysis of the consequences of any residual impacts are provided in Table 6-8.

Table 6-8 Summary of proposed mitigation and management measures for residual impacts

No.	Mitigation measure	Project phase
B1	Habitat loss, displacement of resident fauna, injury or death of fauna - Trained fauna spotter catcher (FSC) and/or ecologist on site during clearing events to native vegetation: - Instigating clearing protocols, to include a trained ecologist or licensed wildlife handler to be present during clearing events of native and exotic vegetation (including planted and cropped) - Pre-clearance surveys should be completed in the 48 hours prior to clearing - If threatened fauna are detected during pre-clearance surveys, an incidental finds protocol including comparative habitat assessments should be prepared for clearing sites and proposed release sites provided to ensure that habitat features are available in the released sites.	During construction (clearing)
B2	Habitat loss, displacement of resident fauna, injury or death of fauna - Installation of temporary frog exclusion fencing prior to construction to exclude Sloane's Froglet from the construction site. Specifications include: - Non-woven, smooth UV fabric - Installed to a height at least 60cm - Trenched into the ground at least 20cm	Pre-construction
B3	Inadvertent impacts on adjacent habitat or vegetation, including trampling - Clear physical demarcation of boundary between areas to be retained and areas proposed to be cleared. Biodiversity Management Plan (BMP) to include: - Documented clearance protocols to include demarcation (e.g. use of pickets or flagging) of vegetation to be retained - No clearing to occur outside the Development Footprint - No stockpiling or storage outside of the Development Footprint - Tree Protection Zones (TPZs) for retained woodland - Clearing limits must be delineated prior to proposed commencement of clearing at each area	Pre-construction and construction
B4	Reduced viability of adjacent habitat due to increased noise - Avoid clearing / construction during night-time hours and during breeding season of threatened fauna species. Limited use of lighting	Construction
B5	Transport of weeds and pathogens from the site to adjacent vegetation Weed control and hygiene protocols - Biodiversity Management Plan (BMP) to include: - Weed control and Vehicle and machinery hygiene protocols to prevent spread of weeds and pathogens within Subject Land - Weed control should be completed by a suitably qualified person in the identification and management of weed species - Hygiene protocols to align with NSW DPIE Hygiene guidelines - <i>Protocols to protect priority biodiversity areas in NSW from Phytophthora cinnamomi, myrtle rust, amphibian chytrid fungus and invasive plants</i> ((NSW DPIE, 2020)	Construction and operation

No.	Mitigation measure	Project phase
B6	Rubbish dumping - EMS to include: List or map of lawful locations for dumping construction rubbish	Construction
B7	Impacts of development on habitat connectivity: - Site access driveway final design to include safe amphibian passage along Whitehead Road - Culverts under site access driveway to provide safe passage for amphibians along Whitehead Road.	Final design / construction
B8	Vehicle speed limits implemented across the site during construction and operation - Vehicle impacts will be reduced by: - Limit vehicle speeds to 40km/h to reduce the risk of vehicle strike. - Construction activities are limited to daylight hours to reduce vehicle strikes of nocturnal fauna	Construction and operation

6.2. Aboriginal heritage

6.2.1. Approach

This section summarises the findings of the Aboriginal Cultural Heritage Assessment (ACHA) undertaken by OzArk Environment and Heritage Pty Ltd, provided in Appendix E2. The ACHA was prepared in response to the Project SEARs and provides an assessment of the potential Aboriginal Heritage impacts of the Project and the recommended measures to mitigate them.

The ACHA report was prepared in accordance with the following guidelines:

- *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (NSW OEH, 2011)
- *Aboriginal cultural Heritage Consultation requirements for Proponents* (DECCW , 2010a) (ACHCRP)
- *Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW* (DECCW, 2010b)

It includes desktop research and field surveys.

Consultation with Aboriginal stakeholders was undertaken in accordance with clause 60 of the *National Parks and Wildlife Amendment Regulation 2019* following the consultation steps outlined in Aboriginal cultural Heritage Consultation requirements for Proponents (DECCW , 2010a). As a result of this process, seven Aboriginal groups registered their interest in the Project. These Registered Aboriginal Parties (RAPs) included:

- Albury and District LALC
- Bundyi Aboriginal Cultural Knowledge Group
- South West Yiradyuri Clans (SWYC)
- Aboriginal Cultural Heritage Education Pty Ltd

6.2.2. Existing environment

Archaeological context

The Project is situated in identified territory belonging to the people of the Wiradjuri tribe and linguistic group, but also near the boundary of the Waywurru (Waveroo) people. The area of Corowa is also recognised as land inhabited by the Bangerang People who utilised the Murray River as a primary source of food, transport, and communication.

The Murray River has been considered to form the southern extent of the Wiradjuri territory, although major rivers were not boundary or territory markers in Aboriginal culture compared to European tradition. Material culture of the Wiradjuri often included a wide variety of hunting implements ranging from wooden objects (e.g. spears, boomerangs, clubs, and shields) to fishing tools (e.g. fishing hooks, nets, and traps) (OzArk Environment and Heritage, 2025).

A desktop search of the AHIMS database identified 79 records for Aboriginal heritage sites within the designated (20 x 20km) search area. Of the identified records, none were located within the Corowa BESS Development Footprint boundaries. The results are summarised in Table 6-9 and Appendix E2.

The most frequent types of recorded sites were modified trees (carved or scarred). Other site types included isolated artefacts and artefact with an associated shell (refer to Table 6-9).

Table 6-9 Breakdown of previously recorded Aboriginal sites in the region (OzArk Environment and Heritage, 2025).

Site type	Number	% Frequency
Modified tree (carved or scarred)	62	78.5
Isolated artefact	16	20.2
Artefact with shell	1	1.3
Total	79	100

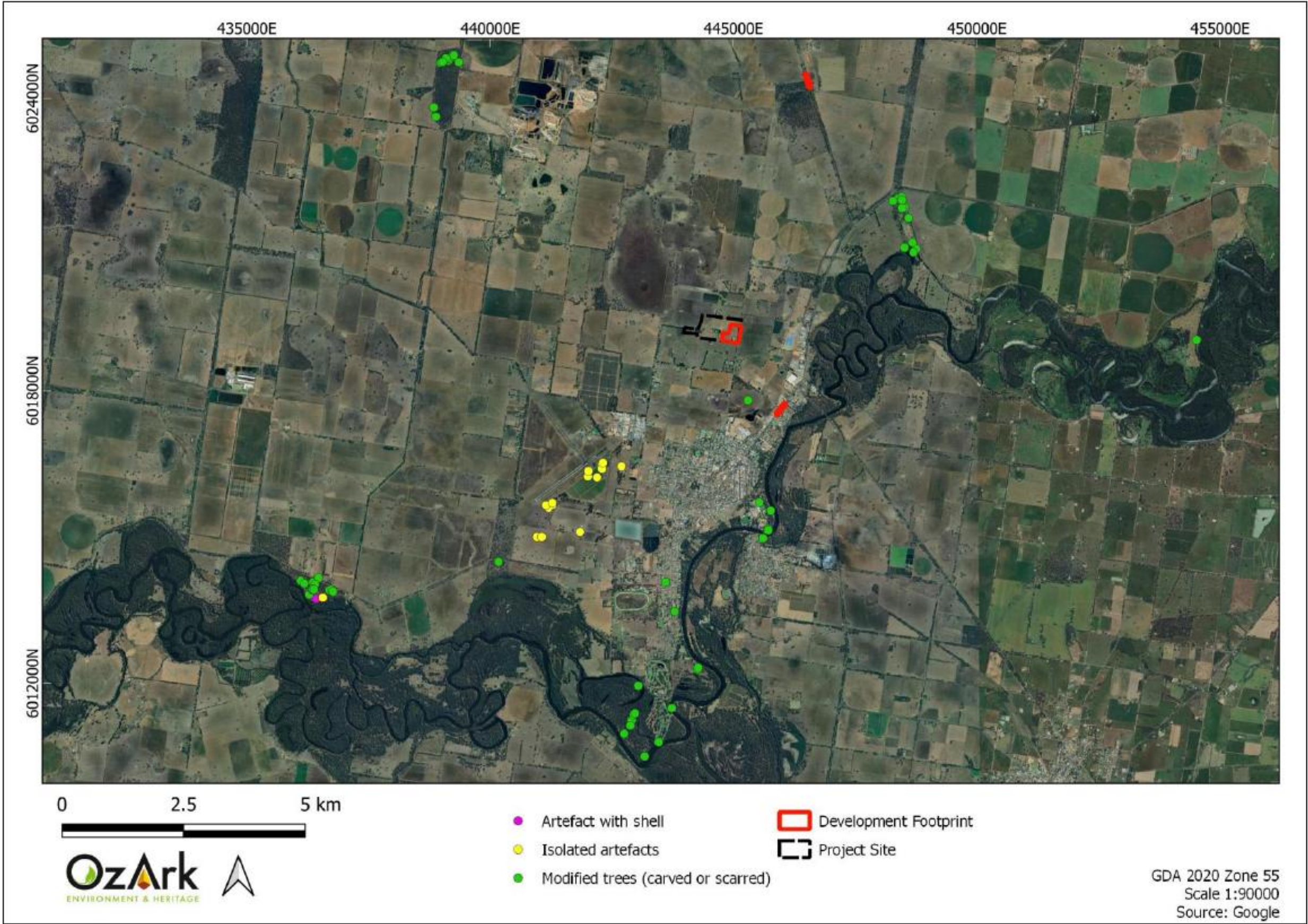


Figure 6-8 Location of previously recorded AHIMS sites in relation to the Development Footprint (OzArk Environment and Heritage, 2025)

Additional searches

Other heritage register searches were undertaken to identify any items or places in proximity to the Development Footprint and the surrounding Corowa region and landscape. The following resources were used as part of this assessment are summarised below (Table 6-10).

Table 6-10 Aboriginal cultural heritage: desktop-database search results.

Name of Database Searched	Date of Search	Type of Search	Comment
Commonwealth Heritage Listings	06/06/2025	Corowa LGA	No places listed on either the National or Commonwealth heritage lists are located within the Corowa BESS Development Footprint.
National Native Title Claims Search	06/06/2025	NSW	No Native Title Claims cover the Corowa BESS Development Footprint.
AHIMS	06/06/2025	20 x 20km (search area) centred on the Development Footprint	No previously recorded sites occur within the Corowa BESS Development Footprint.
Local Environment Plan (LEP)	06/06/2025	Corowa LEP of 2012	No items of Aboriginal heritage significance occur near the Corowa BESS Development Footprint.

Archaeological investigation summary

The archaeological fieldwork for the ACHA report was undertaken by OzArk Environment and Heritage Archaeologist Sophia Grubnic with assistance of Dozer Atkinson (representative of Aboriginal Cultural Heritage Education Pty Ltd) on October 8, 2025.

A number of archaeological studies were undertaken within vicinity of the Development Footprint which provide information to help inform a grounded understanding of the nature and distribution of archaeological sites within the area.

Standard archaeological field survey and recording methods were employed in the assessment which consisted of full pedestrian survey (Figure 6-9) across the Development Footprint and sample survey at each road intersection. Transects were walked with surveyors spaced approximately 20m apart across the entire Development Footprint.

Notable influences that have impacted the presence and preservation of archaeological sites within the Development Footprint were noted to include:

- The topography of the land surrounding the Development Footprint is predominantly flat which has been impacted by historical flooding events associated with the Murray River.

- A predominate soil type found in the Development Footprint is clay soils that can be prone to unusual weather and erosion patterns.
- The Development Footprint has also undergone extensive historical disturbances (including grazing and cropping) severely limiting the likelihood of archaeological evidence remaining and if present has the potential not occur in their original context (in situ).

No Aboriginal objects were recorded during the survey for the Development Footprint. There are also no landforms with subsurface archaeological potential occurring within the extent of the Development Footprint. There were no specific values attributed with the Development Footprint by the site officer that was present on site. The archaeological survey of the Development Footprint also did not result in the identification of any new Aboriginal sites.



Figure 6-9 Recorded pedestrian survey tracks across the Development Footprint (OzArk Environment and Heritage, 2025)

6.2.3. Potential impacts

The Project and associated construction activities would require the use of heavy machinery and would cause significant ground disturbance within the Development Footprint. Any Aboriginal heritage objects that are within this footprint would therefore likely be impacted. As detailed above, there were no previously recorded AHIMS sites located within or adjacent to the Development Footprint and no new archaeological sites were identified during the field assessment. As a result, there will not be any harm to any known Aboriginal objects or sites by the development of the Corowa BESS Project. There are no known specific values (scientific, social or cultural, aesthetic or historic) within the Project Site that would be impacted by the development of the proposed Corowa BESS.

6.2.4. Uncertainty

Within the exception of the fenced, operational area of the Corowa Substation, field work surveys were conducted within all portions of the Development Footprint, including the Corowa Substation lot outside the substation fence. The Corowa Substation itself is all hardstand and did not require survey. Access is also not permitted to high voltage areas except for qualified Essential Energy personnel for safety reasons.

The survey efficacy across the Development Footprint was low at 3%, however the high level of pedestrian coverage throughout the Development Footprint allowed for a thorough examination of the present landforms and the observable ground condition. The assessment concluded that the low survey efficacy did not prevent the archaeological potential of the landforms to be understood.

Notwithstanding, it is possible that unrecorded Aboriginal heritage objects may still occur and be impacted during construction, operation, maintenance, upgrading and decommissioning works for this BESS in the future. These would be expected to occur as isolated stone artefacts and/or low-density artefact scatters.

All Aboriginal heritage objects are protected under Part 6 of the NPW Act. If an unexpected find of an Aboriginal object or remains are discovered during construction, then an Unexpected Finds Protocol would be followed and is included in the Project mitigation measures below. A cultural heritage induction is also recommended to ensure workers can recognise Aboriginal artefacts.

6.2.5. Mitigation measures

With the effective implementation of the mitigation measures set out below, the overall impact of the Project on Aboriginal cultural heritage is considered to be manageable.

Table 6-11 Safeguards and mitigation measures to manage Aboriginal cultural heritage

ID	Mitigation measures	Project phase
AH1	Under Section 89A of the NPW Act it is mandatory that all newly recorded Aboriginal sites be registered with AHIMS.	All phases
AH2	In the unlikely event that unexpected Aboriginal heritage items are encountered during the work the <i>Unanticipated Find Protocol</i> should be	All phases

ID	Mitigation measures	Project phase
	implemented (Appendix 4 of the ACHA). Appendix 5 of the ACHA provides the appropriate procedure to be undertaken in the unlikely event that human remains are encountered.	
AH3	All land and ground disturbance activities must be confined to within the Development Footprint, as this will eliminate the risk of harm to potential Aboriginal objects that may be in adjacent landforms. Should the parameters of the Project extend beyond the assessed Development Footprint, then further archaeological assessment may be required.	All phases
AH4	Prior to undertaking any land or ground disturbance activities, all staff and contractors involved in the proposed work should undergo a cultural heritage induction to ensure that they can recognise Aboriginal artefacts (found in Appendix 6 of this ACHA) and are aware of the legislative protection requirements for all Aboriginal sites and objects under the NPW Act and are familiar with the <i>Unanticipated Finds Protocol</i> and the skeletal remains protocol.	All phases

6.3. Access and traffic

6.3.1. Approach

Amber Organisation Pty Ltd (Amber) was appointed to conduct a Traffic Impact Assessment (TIA) for the Project. This section provides a summary of the findings of this assessment, with a copy of the full assessment attached as Appendix E3

The TIA was prepared to assess the construction, operational and decommissioning traffic impacts, and the access arrangements of the Project. The assessment responds to the SEARs (provided in Full in Appendix A) and details how road impacts of Project-related traffic, in particular from heavy vehicles and Oversize and Overmass (OSOM) vehicles, would be avoided or managed using road-use management strategies. The assessment provides:

- Details of both light and heavy vehicle traffic volumes and proposed transport routes
- An assessment of the potential traffic impacts of the Project on the road network function and safety
- An assessment of the capacity of the existing road network to accommodate the type and volume of traffic generated by the Project
- Details of measures to manage potential impacts

The traffic assessment was undertaken in accordance with the *Guide to Transport Impact Assessment* and relevant Austroads Guidelines and in consultation with Council and Transport for NSW, as the road asset owners and managers.

Key areas of uncertainty are addressed, and cumulative traffic impacts are documented in Section 7.4

6.3.2. Existing environment

Road network

As can be seen from Figure 6-10, the Project Site is well-connected to the surrounding State Road network, with Honour Avenue running in a general north to south alignment to the east of the site, before continuing as Federation Avenue to the south and Riverina Highway to the north-east. Federation Way connects to the Victorian State Road network south-east of the site.

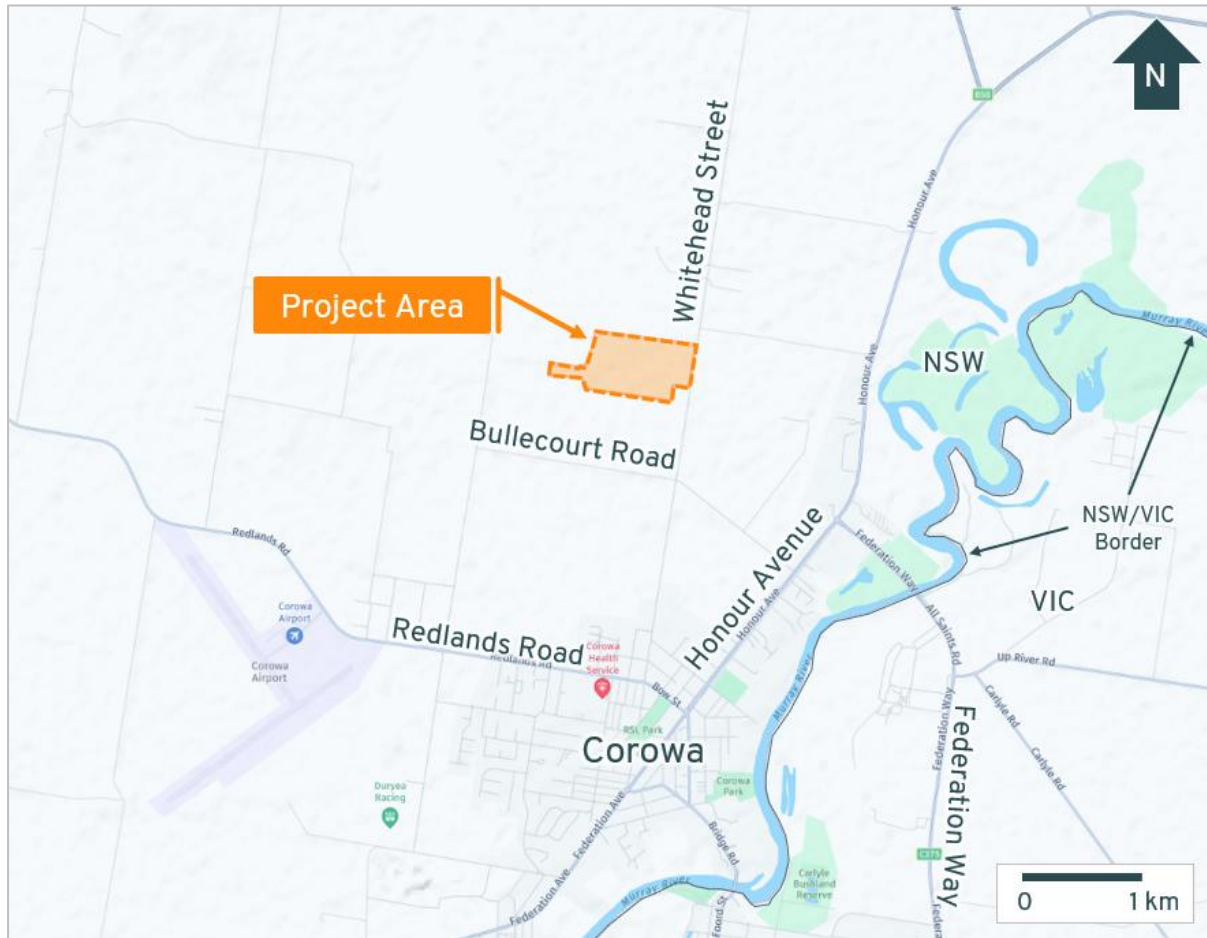


Figure 6-10 Project Site location relative to the State Road network

Honour Avenue

This is a State Road that runs along a general north-east to south-west alignment between its continuation as Riverina Highway to the north, and Federation Avenue in Corowa, to the south. Within the vicinity of the Project Site, the carriageway has a typical width of 12.0m which accommodates a lane in each direction and 2.5m-wide sealed shoulders. There is a posted speed limit of 80km/hr. The intersection with Bullecourt Road is a T-intersection, with vehicles existing Bullecourt Road required to give way. The intersection has basic left and right turn treatments.

Whitehead Street

This is a local road that runs in a general north-south alignment between Riverina Highway to the north and Betterment Parade, Corowa, to the south. It has a typical carriageway width of approximately 5.0m, with 1.0m wide unsealed verges, and accommodates one lane of traffic in each direction. There are no turning treatments at the existing site access, and a posted speed limit of 100km/hr applies along the road.

Bullecourt Road

This is a local road that runs along a general north-west to south-east alignment between Cemetery Road to the west, and Honour Avenue to the east. It has a typical carriageway width of 6.0m with narrow, grassed verges, which accommodates one lane of traffic in each direction. There is a posted

speed limit of 80km/hr applied along the road. The intersection with Whitehead Street is a cross-intersection, with vehicles on Bullecourt Road required to give way.

Traffic volumes

Honour Avenue

Amber commissioned a tube count on Honour Avenue, approximately 40m north of the intersection with Bullecourt Road, to determine the existing traffic volumes. The survey results indicate that Honour Avenue currently experiences a high level of daily traffic, in the order of approximately 6,401 vehicles per day, split relatively evenly between north-bound and south-bound traffic.

The 85th percentile speed⁹ is lower than the posted speed limit and the road accommodates approximately 12% heavy vehicle traffic.

Additionally, the survey data showed that the traffic volumes along the highway are relatively evenly spread (low peaks) between 8:00am and 5:00pm on weekdays.

Overall, the data indicates that Honour Avenue currently accommodates a moderate level of traffic for its road classification and can accommodate an increase in vehicle traffic.

Intersection volumes

Amber commissioned two intersection turn movement counts (TMC) at the Honour Avenue / Bullecourt Road and Bullecourt Road / Whitehead Street intersections, to determine the existing traffic and road environment.

The survey data indicates that the Honour Avenue / Bullecourt Road intersection currently experiences a moderate level of traffic, with a slightly higher southbound flow during both the morning and afternoon peak periods. Approximately 10% and 6% heavy vehicles use this intersection in the morning and afternoon peak hours, respectively.

The survey data indicated that the Bullecourt Road / Whitehead Street intersection currently experiences a low level of traffic. The highest flow was recorded as being the through movement on Bullecourt Road, in both directions. And the afternoon peak (between 3:00 and 4:00pm) was found to experience higher traffic volumes than the morning peak (07:30am to 08:30am). Heavy vehicles were not recorded using the intersection during the morning peak hour, and 15% heavy vehicles used the intersection in the afternoon peak hour.

Public transport

A small number of public bus services (TfNSW and NSW TrainLink Coach services) are provided from Corowa and within the vicinity of the Project Site, as well as school bus services operating on Whitehead Street. One school bus service (S783) passes the Project Site during school peak period (between 8:30am and 8:40am, and 3:30pm and 3:40pm on weekdays).

⁹ The 85th percentile speed is the speed at or below which 85% of drivers travel under free-flowing conditions. It is often used as a metric for setting speed limits and can help evaluate if a posted speed is appropriate for a road's environment.

The other bus services running in the area use roads surrounding the Project Site which may also be used by Project-related traffic, including along Honour Avenue, and specifically the existing bus stop and shelter opposite Bullecourt Road.

Restricted vehicle access

B-Doubles¹⁰

The National Heavy Vehicle Regulator (NHVR) Restricted Access Vehicle Map for the area surrounding the Project Site is provided in Figure 6-11. The green lines and green shaded areas indicate approved B-Double routes, while the yellow lines represent approved routes with travel conditions.

From Figure 6-11 the surrounding State Road and local road network are B-Double approved routes. Accordingly, the Project Site has access to the B-Double approved road network via Whitehead Street.

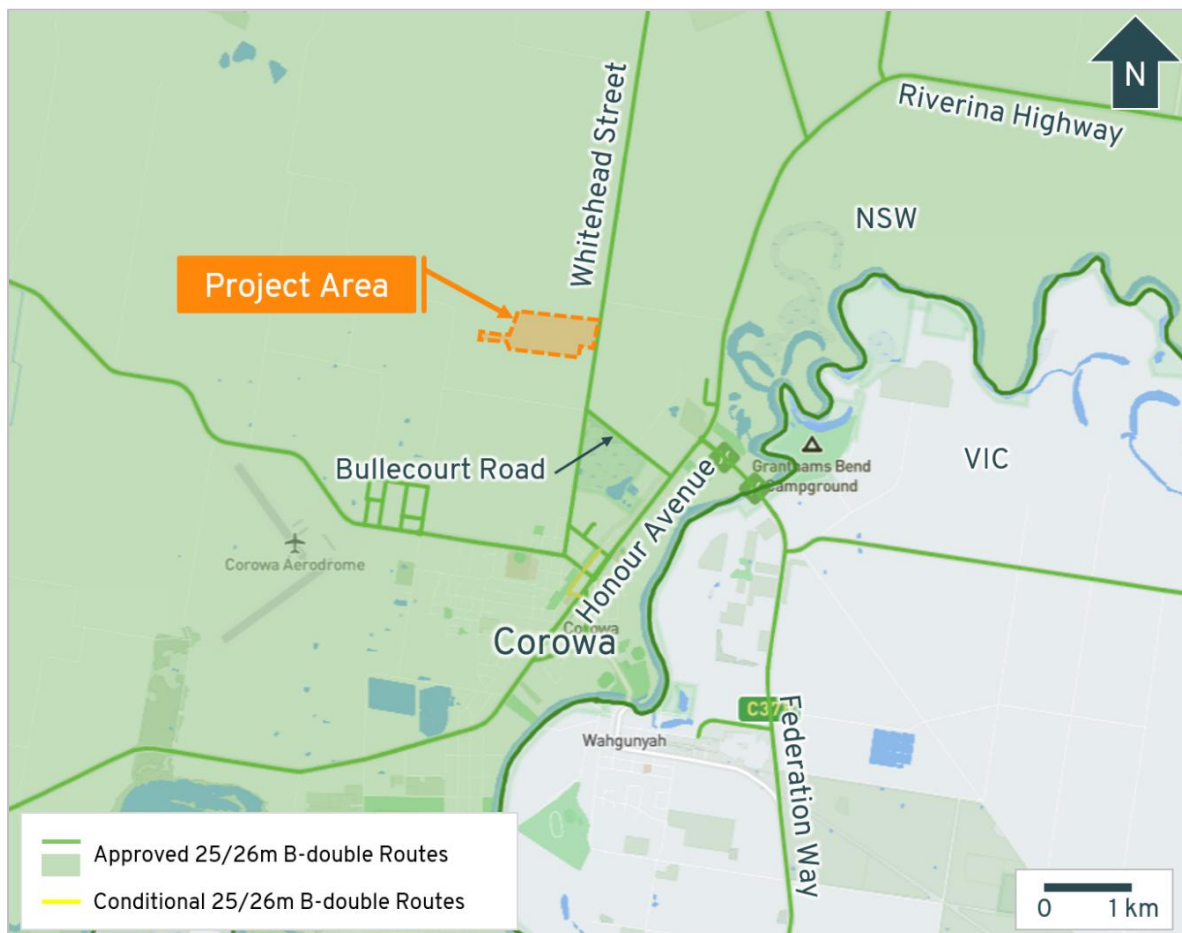


Figure 6-11 NHVR 26m B-Double Network Approved Roads (Source: NHVR Restricted Access Vehicle Map)

¹⁰ A B-Double is a heavy vehicle consisting of a prime mover (truck) and two semi-trailers. The key feature is that the first semi-trailer is connected directly to the prime mover, and the second semi-trailer is attached to the first one via a fifth wheel coupling, providing greater stability than a road train.

Class 1 OSOM vehicles¹¹

The NHVR Oversize Overmass Load Carrying Vehicles Network map for the area surrounding the Project Site is shown in Figure 6-12. The map shows approved routes for eligible vehicles operating under the Multi-State Class 1 Load Carrying Vehicles Mass and Mass Exemption Notices.

The green lines indicate approved Class 1 OSOM Vehicle routes. Accordingly, the Project Site has access to the Class 1 OSOM approved road network via Honour Avenue, Federation Way and Riverina Highway.



Figure 6-12 NHVR Class 1 Oversize Overmass Load Carrying Vehicles Network Approved Road
(Source: NHVR Oversize Overmass Load Carrying Vehicles Map)

Special purpose vehicles¹²

The NSW Special Purpose Vehicle (SPV) Network map provides details of the approved roads as well as conditions of access and travel restrictions for eligible SPV's.

¹¹ A heavy vehicle that, with its load, exceeds standard mass or dimension limits and is designed to carry a "large invisible item".

¹² Vehicles built for a purpose other than carrying goods, such as mobile cranes, concrete pumps or drill rigs, are defined as special purpose vehicles (SPVs).

Roads that are not approved on the map require an access permit from the NHVR or the relevant road manager.

Figure 6-13 indicates that SPV Level 6¹³ vehicles are approved from Federation Way and Honour Avenue to the Project Site. Riverina Highway has conditional approval, which states the following:

“Vehicles exceeding 2.5 metres wide or 22 metres long are not permitted to travel between sunrise and sunset during public holiday periods (including 23 December in one year to 3 January of the following year inclusive).”

SPV Level 1¹⁴ vehicles are only permitted to use State roads in proximity to the Project Site.

Therefore, approval for SPV Level 1 vehicles would be required to get access to the Project Site from the State road network.

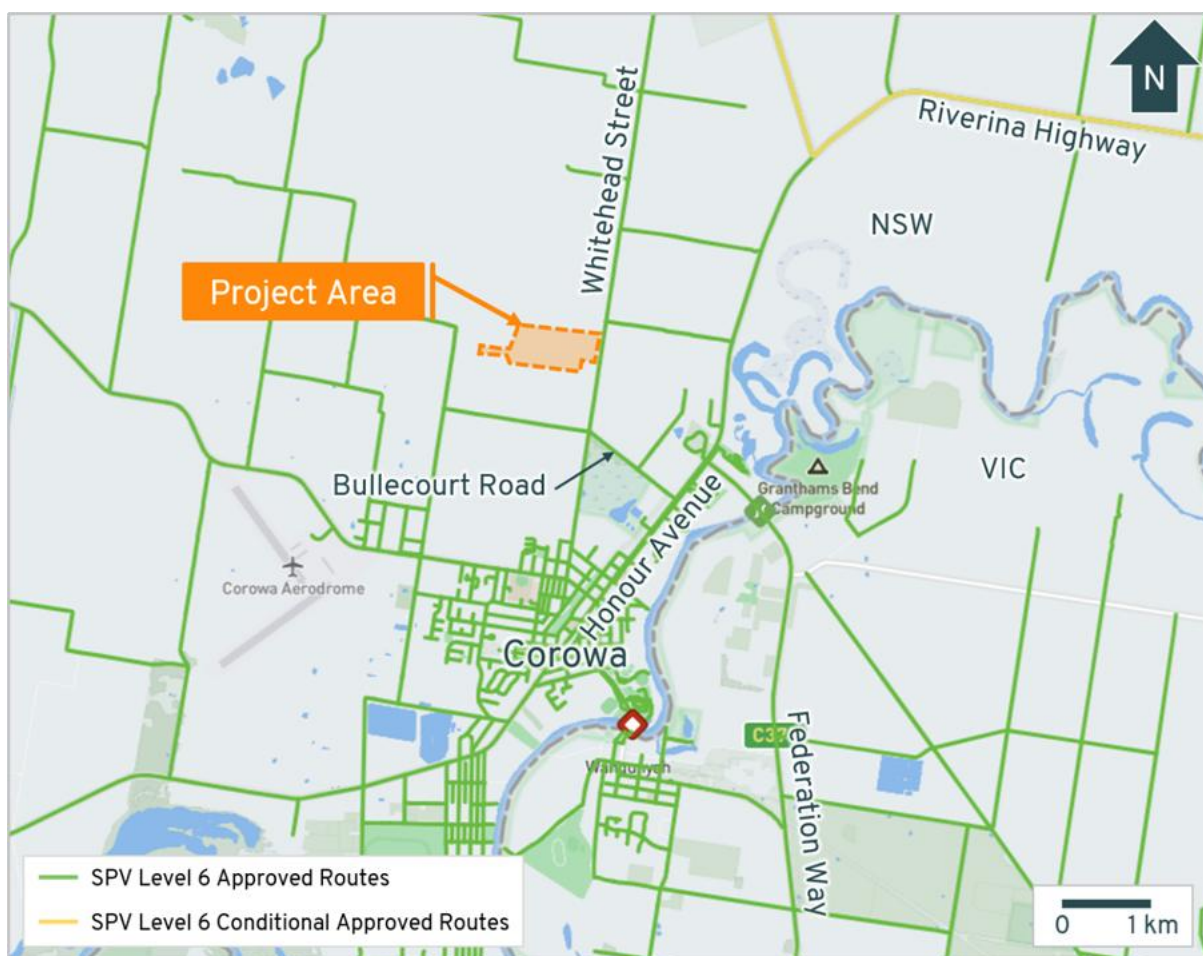


Figure 6-13 NHVR SPV Level 6 Network Approved Roads (Source: NHVR Specials Purpose Vehicle Access map)

¹³ SPV Level 6: 5-axle all terrain cranes up to 60 tonnes.

¹⁴ SPV Level 1: Cranes and SPVs up to 40 tonnes that comply with the Bridge Formula (a regulation used to limit the weight-to-length ratio of heavy vehicles to prevent bridge damage. It calculates the maximum allowable weight a vehicle can carry based on the distance between its axles and the number of axles in a group. The formula is used to ensure that weight is spread over a greater area by either increasing the distance between axles or using more axles).

Crash history

Based on a review of the TfNSW Centre for Road Safety Crash and Casualty Statistics database, there are no discernible crash trends within the surrounding road network. It was concluded that the road network is currently operating in a relatively safe manner near the proposed Project Site access.

6.3.3. Traffic assessment

Traffic generated by the Project can be separated into three distinct stages: construction, operation and decommissioning. The peak traffic generating potential is during construction which generates trips associated with the workforce accessing the Project Site and the delivery of raw materials and plant.

During operation the Project is expected to generate a much lower amount of traffic, associated with staff attending the site, as required, for preventative and responsive maintenance works. The BESS will be primarily operated remotely thereby not requiring a full-time staff presence at the site. Therefore, up to two maintenance personnel may access the Project Site on a given day.

Decommissioning is anticipated to generate a similar level of traffic to the construction stage.

The following sections provide an assessment of the potential traffic impacts of the Project on the road network function for each of the afore-mentioned Project phases.

Construction phase

Standard construction traffic generation

The peak hours for construction phase traffic will occur at the start and the end of the working day, when workers are transported to and from the Project Site. Most workers will typically arrive on-site between 6:00am and 07:00am and depart between 5:00pm and 7:00pm. Workers will generally have staggered finish times to facilitate a less-pronounced evening peak, however, for the purposes of the Traffic Impact Assessment, the worst-case scenario was applied, and it was assumed that the evening peak would match the morning peak, and would occur from 5:30pm to 6:30pm.

Table 6-12 summarises the forecasted traffic volumes expected to be generated during the construction phase of the Project.

Table 6-12 Traffic generation during the construction phase

Vehicle type	Average Construction Period		Peak Construction Period	
	Vehicle trips per day (vpd)	Peak hour trips (vph)	Vehicle trips per day (vph)	Peak hour trips (vpd)
Light vehicles	80	40	100	50
Rigid trucks	8	2	16	4
Truck & dog / Semitrailers	8	2	20	4
B-Doubles	4	1	8	3

Vehicle type	Average Construction Period		Peak Construction Period	
	Vehicle trips per day (vpd)	Peak hour trips (vph)	Vehicle trips per day (vph)	Peak hour trips (vpd)
Non-high risk OSOM	4	0	4	1
TOTAL	104	45	148	62

It is anticipated that, during peak construction, the Project would generate up to 100 light vehicles and 48 heavy vehicle trips per day. Overall, the Project is expected to generate 62 vehicle trips per hour in the morning and evening peaks hours during the peak construction period, which would reduce to 45 vehicle trips per hour during the average construction periods.

Non-high risk OSOM vehicles

In order to deliver key battery components (specifically battery containers), it is anticipated that Class 1 OSOM vehicles will be required.

Each battery container unit is anticipated to measure approximately 7m in length x 2.5m wide and 3m high. This is similar in size to a 20-foot shipping container. These battery units could weigh in excess of 40 tonnes each, resulting in the requirement for an OSOM vehicle combination to safely and appropriately accommodate the weight. An example of the vehicle combination (broadly consistent with a B-Double vehicle) is shown in Figure 6-14.

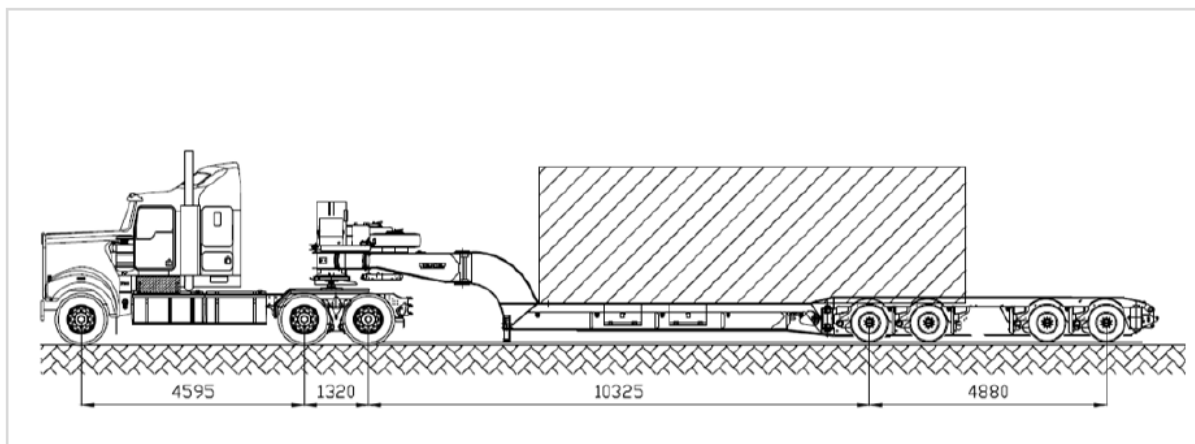


Figure 6-14 An example of a battery container vehicle combination

Other non-high risk OSOM vehicles which may be required for the construction phase include:

- Mobile cranes
- Drum rollers
- Dump trucks
- Concrete trucks and pumps
- Excavators
- Graders
- Compactors.

It is anticipated that these vehicles would comply with the Class 1 exemption notices¹⁵ and would therefore be able to operate on the approved NSW SPV network, including the combinations required for the battery units. The vehicles would access the Project Site directly from Whitehead Street, which is rated to accommodate complying vehicles.

Vehicle types and any necessary permits would be confirmed and obtained (as needed) once the construction methodology has been confirmed.

All specialist plant and BESS components are expected to be delivered from the Port of Melbourne or the Port of Geelong. The proposed access routes between the ports and the Project Site are shown in Figure 6-15 and Figure 6-16.

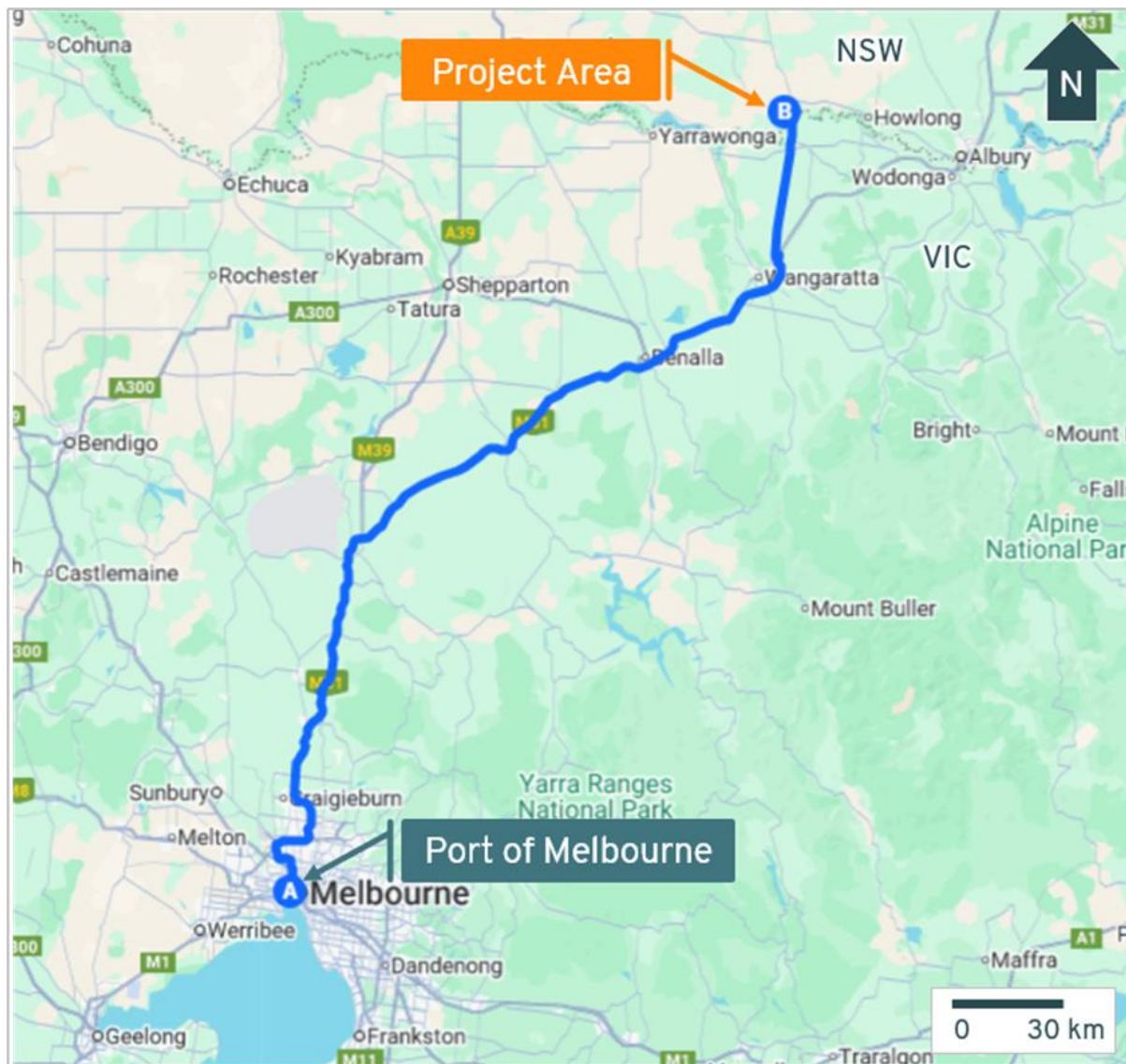


Figure 6-15 General access vehicle route from Port of Melbourne to the Project Site

¹⁵ These are legal documents that exempt certain heavy vehicles from specific mass, dimension or vehicle standard requirements under the Heavy Vehicle National Law (HVNL). The Notices provide exemptions that are conditional on the vehicle meeting specific criteria and travelling on designated routes.

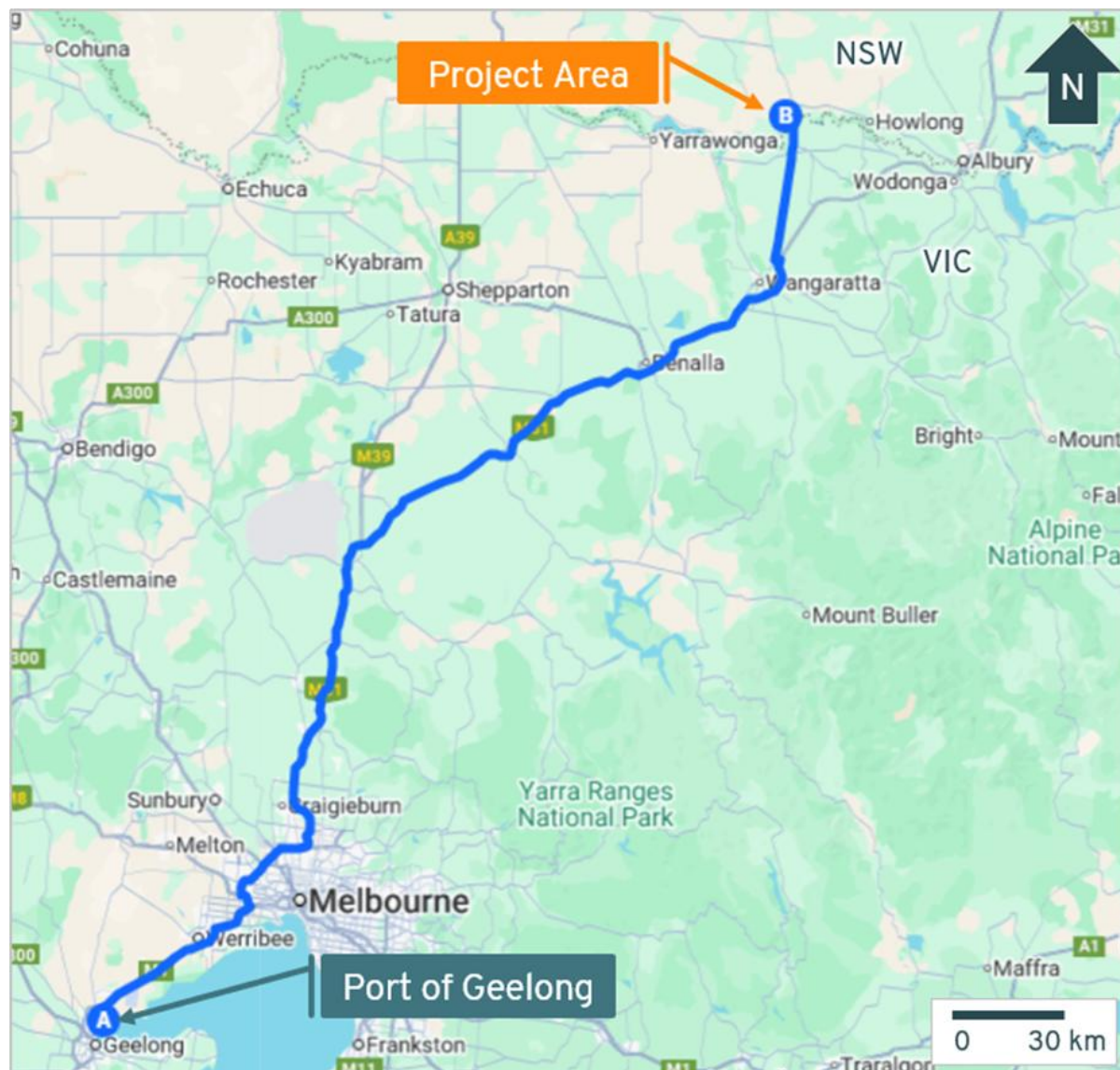


Figure 6-16 General access vehicle route from Port of Geelong to the Project Site

All roads on the routes are approved for 26 metre B-Double access, with all roads also pre-approved for Class 1 OSOM vehicles (operating under relevant Multi-State Class 1 Load Carrying Vehicle Mass and / or Load Exemption Notices), except for Bullecourt Roads and Whitehead Street, as outlined in the NHVR National Network Map. Specific approval will need to be obtained for Class 1 OSOM combinations on these roads.

High risk OSOM vehicles

High risk OSOM vehicles will also be required for the delivery of the largest plant and equipment to the Project Site (for example the substation transformer and certain earth-moving equipment). These vehicles would exceed the Class 1 mass and/or dimension requirements and are therefore subject to separate permit applications and regulations, including use of a vehicle escort.

High risk OSOM vehicles will contribute the smallest percentage of vehicles accessing the Project Area during the construction period and are subject to the development of Transport Management Plans (TMPs) to manage each vehicle trip in a safe manner. These plans ensure comprehensive

planning and execution to facilitate safe and responsible vehicle movements, with reduced impact on other road users and road infrastructure.

The Applicant has advised that up to five high risk OSOM vehicles could be required to access the Project Site during the construction period. The vehicles would be unloaded and kept to their smallest practicable dimensions when departing the site, to avoid classification as OSOM where possible.

High risk OSOM vehicles will travel outside of the peak periods and would be subject to specific permits that would be applied for prior to construction.

The largest OSOM vehicle expected to access the Project Site will transport the substation transformer from the Port of Melbourne to the Project Site. The expected specifications of the transformers are outlined in Table 6-13.

Table 6-13 Estimated transformer specifications

Length (mm)	Width (mm)	Height (mm)	Mass (tonnes)	Trailer specs
7,250	4,200	4,000	101	8x8 platform trailer

The OSOM vehicle configuration identified as appropriate for the transport of the transformer, and used in the assessment, is shown in Figure 6-17.

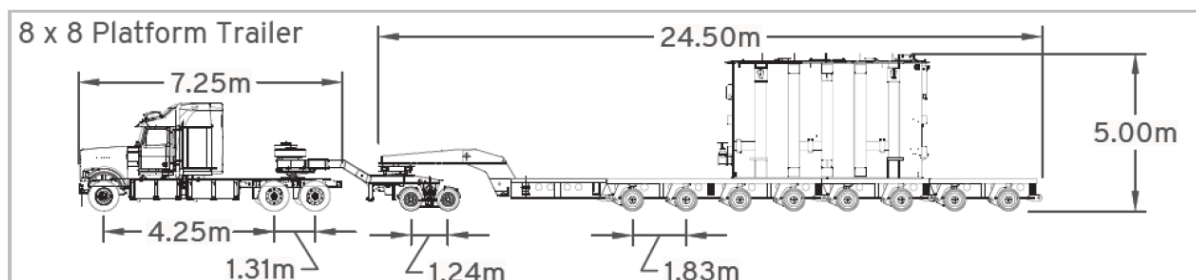


Figure 6-17 High Risk OSOM vehicle configuration

The access route between the Port of Melbourne and the Project Site, along with four identified truck rest areas, is shown in Figure 6-18.



Figure 6-18 OSOM access route between the Port of Melbourne and the Project Site

A route assessment was undertaken along this access route, to determine whether any civil works are required to accommodate the OSOM vehicle on the road network. The assessment included a detailed review of load limits on all bridges and structures, an assessment of the height clearances of underpasses, and a review of railway level crossings along the route.

The assessment identified that:

- The vehicle loading will be within the allowable limits for all bridges, culverts and other structures on the State Road network
- The available height clearance along the proposed route is appropriate to accommodate the OSOM vehicle
- One railway crossing, at Wahgunyah-Wangaratta Road, Bowser, was identified along the route. Written approval will be sought from the rail authority (Australian Rail Track Corporation; ARTC)
- A total of 15 points of interest for further assessment.

The further assessment of the points of interest identified that some minor measures (temporary signage relocation) may be required in the State of Victoria, together with the upgrades outlined in Table 6-14.

Table 6-14 Road upgrades schedule for OSOM vehicles

Pinch Point	Location	Works Required
Victorian Regional Area		
08	Hume Freeway Off-Ramp / Bowser Road (Bowser, VIC)	Temporary signage relocation
NSW Regional Area		
13	Honour Avenue / Bullecourt Road (Corowa, NSW)	CHR(s)/BAL Turn Treatment
15	Whitehead Road / Site Access (Corowa, NSW)	Site access to be upgraded

Accordingly, it was concluded that the proposed route is suitable for use by OSOM vehicles associated with the Project, with permits to be applied for as part of the TMP.

Traffic distribution

It is anticipated that a large proportion of the workforce for the construction phase would travel to the Project Site from Corowa and the surrounding region. Materials and equipment would, additionally, be sourced from within the local area, where practical, with all larger plant expected to be delivered from the Port of Melbourne or the Port of Geelong.

During the morning peak, all vehicle trips would be towards the Project Site, and in the evening peak, all vehicle trips would be away from the Project Site. The majority of heavy vehicle trips would be distributed throughout the day and would be split evenly between inbound and outbound trips.

The following distribution for the AM peak hour traffic distribution has been adopted for the traffic assessment:

- Light vehicles: 45% from Corowa, 30% from the north and north-east, 25% from Victoria
- Heavy vehicles: 50% from Victoria, 40% from the north and north-east, 10% from Corowa.

The same distributions would apply, but in the opposite direction, for the PM peak hour.

Figure 6-19 shows the origin of vehicles in relation to the intersections that have been modelled.

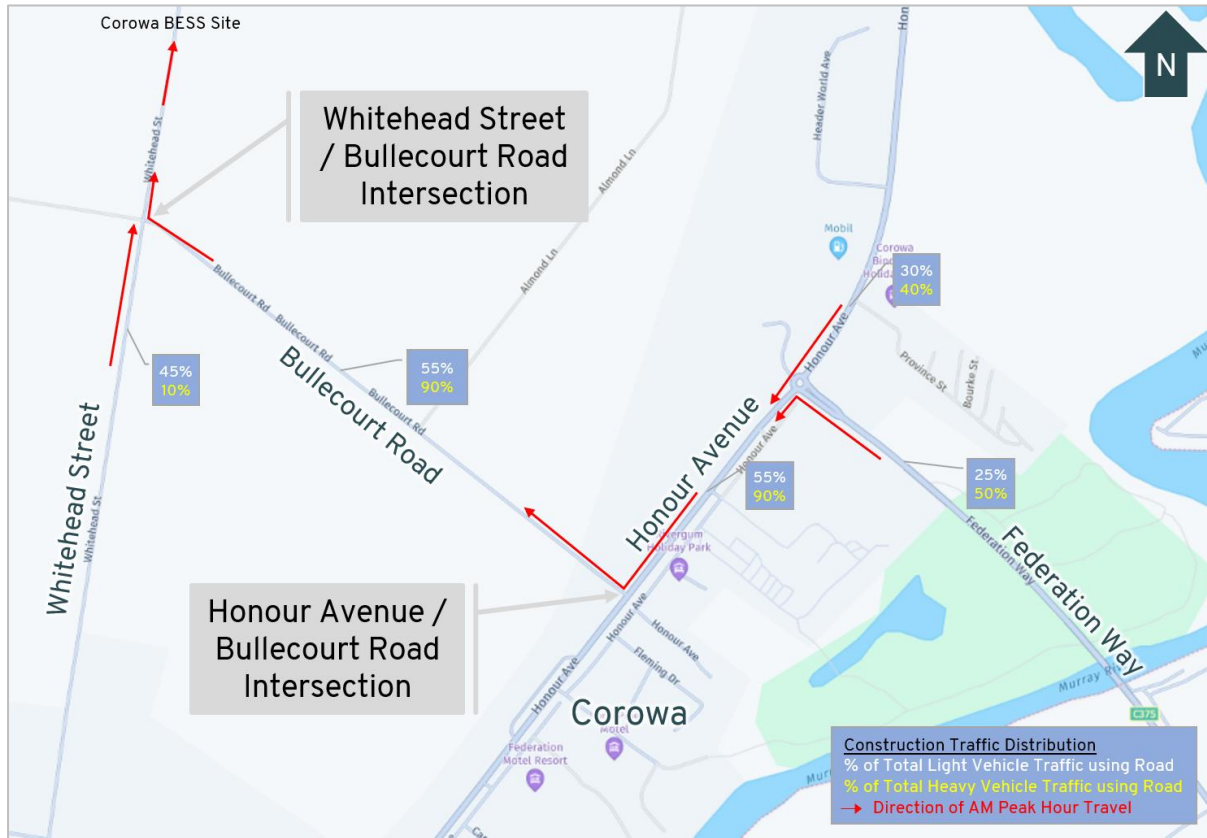


Figure 6-19 AM peak hour Project traffic distribution

Based on the expected traffic distributions stated above, the estimated vehicle trips generated by the Project Site during the peak hours are shown in Figure 6-20 and Figure 6-21.

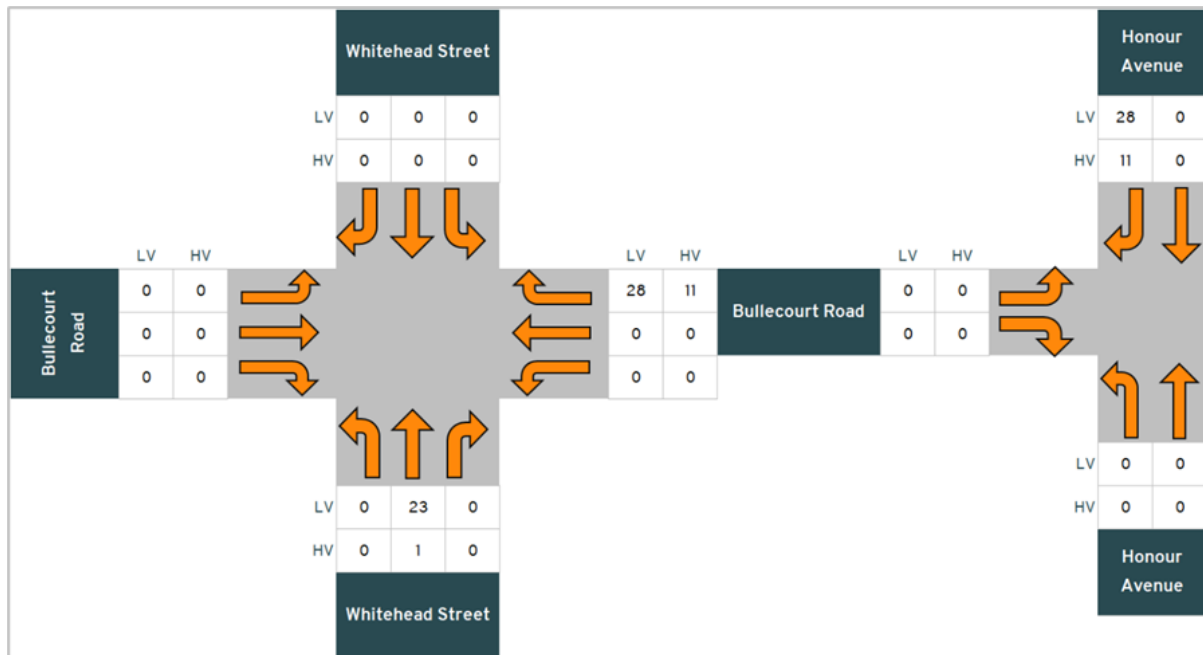


Figure 6-20 Expected AM peak hour Project traffic volumes during peak construction

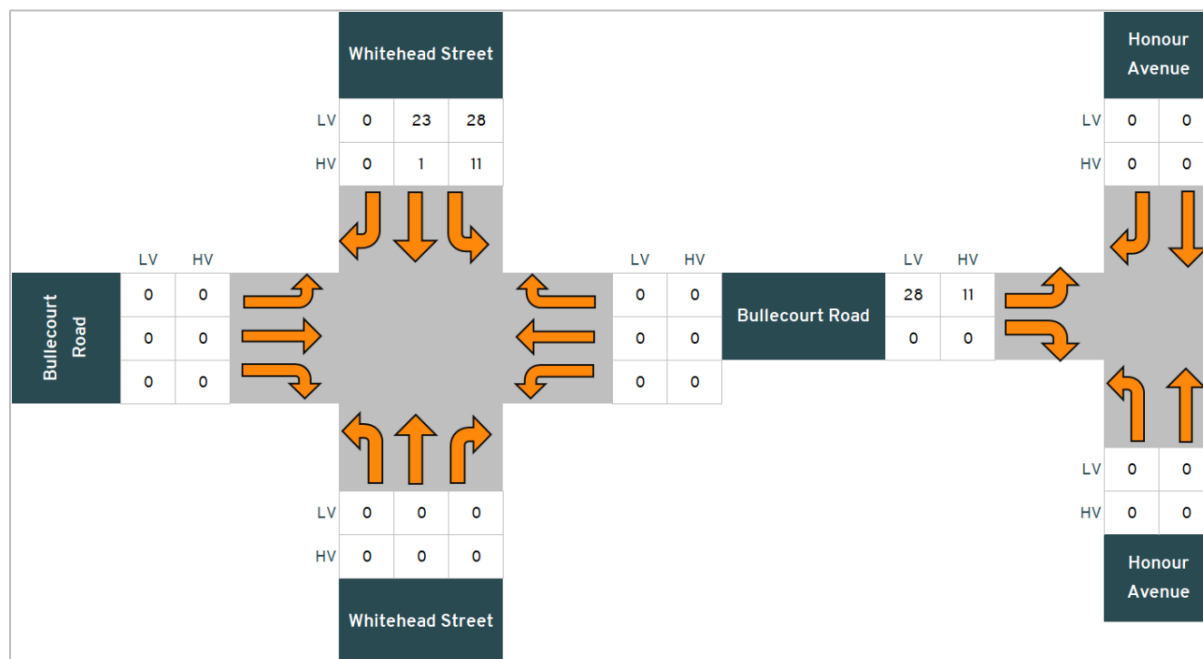


Figure 6-21 Expected PM peak hour Project traffic volumes during peak construction

Operational phase

During the operational phase, the BESS is expected to generate a minimal level of traffic, associated with maintenance and operation services. The BESS is expected to be operated by 1 – 2 maintenance personnel, with occasional deliveries, resulting in traffic generation of up to 8 vehicle movements per day. This would result in a negligible change to the existing traffic environment. There would also be occasional heavy vehicles delivering to the site, but only as required for maintenance.

Decommissioning phase

At the end of the operational life of the Project, most above-ground infrastructure would be dismantled and removed from the Project Site (some network connection infrastructure to be gifted to Essential Energy may be retained). Internal roads, if not requested by the landholder to be retained for ongoing farming purposes or fire access, would be removed and the site reinstated as close as possible to its original state.

Traffic generation during decommissioning would be similar to traffic generation during the average construction period. A comprehensive Traffic Management Plan would be prepared prior to the decommissioning phase, in conjunction with the relevant road authorities. This would aim to ensure adequate road safety and road network operations are maintained during this stage of the Project.

6.3.4. Intersection assessment

Turn treatments

The *Austroads Guide to Traffic Management Part 6: Intersections, Interchanges and Crossings* specifies the turning treatments required at intersections. An assessment of the intersection at Honour

Avenue and Bullecourt Road was undertaken, to ensure vehicles are able to safely leave the State Road network. To ensure that a “worst-case-scenario” was tested, the construction peak hour and road network peak hour were both assessed.

The intersection is currently provided with Basic Left Turn (BAL) and Basic Right Turn (BAR) treatments. Based on the projected traffic volumes, the intersection will require an upgrade to include a short Channelised Right Turn (CHRs) treatment, to comply with the Austroads Guide (refer to Figure 6-22).

The strategic design indicated below incorporates elements to ensure functionality of the existing bus stop on the eastern side of the road, as well as maintaining (and improving) the pedestrian / shared path crossing on the south side of the intersection.

A swept path assessment was undertaken to confirm that the intersection can accommodate B-Double vehicles. The assessment demonstrated that the vehicle can suitably turn to / from Honour Avenue.

Accordingly, it is concluded that the intersection upgrade, as proposed, would suitably accommodate the vehicles expected to access the Project Site. This upgrade forms part of the proposed Project.

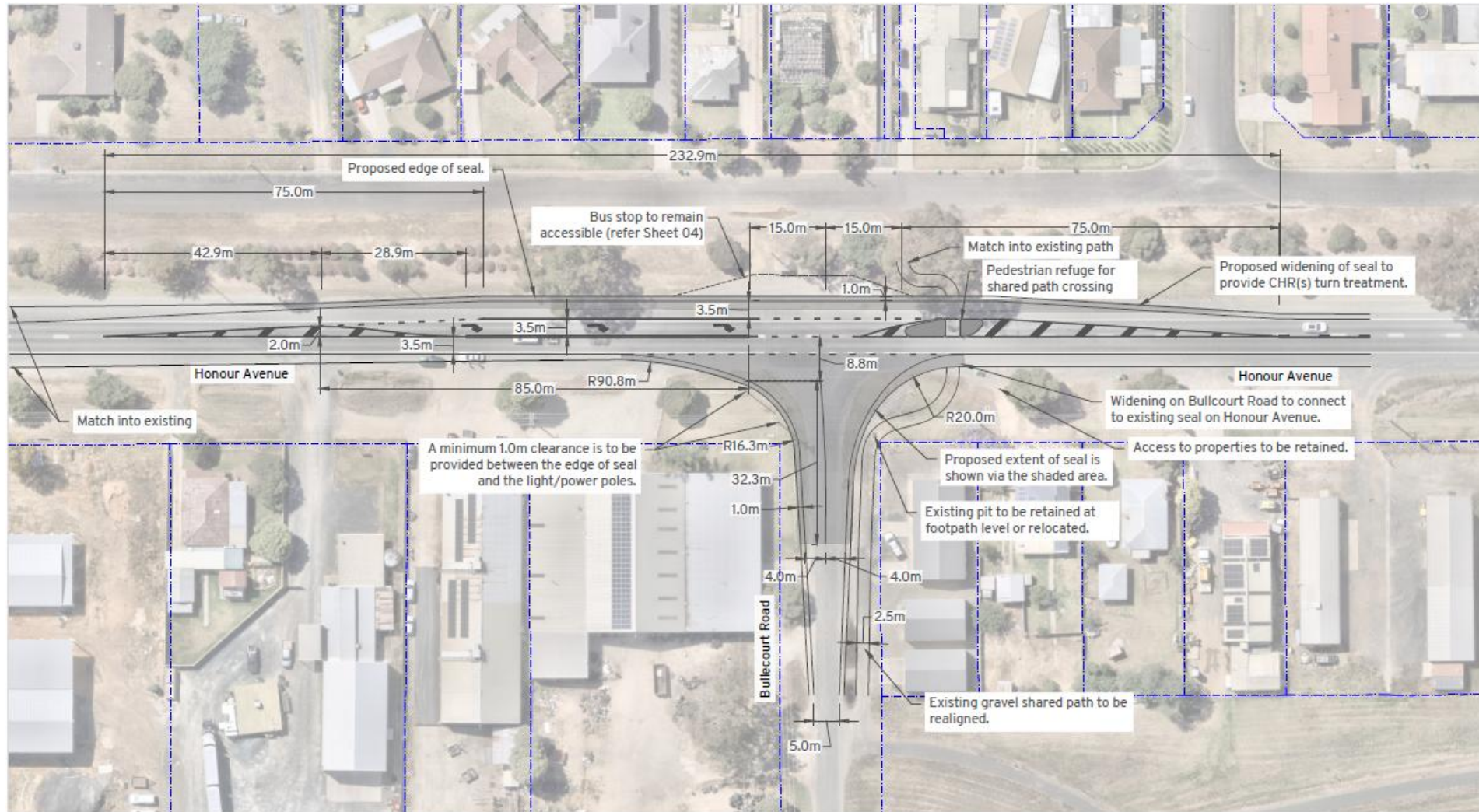


Figure 6-22 Honour Avenue / Bullecourt Road intersection upgrade

Site distance

The *Austrroads Guide to Road Design Part 4A: Unsignalised and Signalised Intersections* specifies the Safe Intersection Sight Distance (SISD) as the minimum sight distance which should be provided along the major road at any intersection. The Guide specifies the SISD required for various design speeds.

Honour Avenue has an 85th percentile recorded speed of approximately 78km/hr, therefore an SISD of 181m is required, based on a reaction time of 2.0 seconds. The available sight distance at the intersection exceeds the requirements of the *Austrroads Guide* given the relatively flat and straight alignment of the road network with grassed roadside environment, cleared of vegetation.

Accordingly, vehicles are expected to be able to safely enter the State Road network at the intersection.

Bullecourt Road and Whitehead Street

A swept path assessment was undertaken to determine the suitability of the intersection at Bullecourt Road and Whitehead Street for access by large vehicles (26m B-Doubles).

The assessment confirmed that B-Double trucks can turn using the existing pavement. However, motorists would need to yield to enable passing on the approach to the intersection. This type of arrangement is typical for low-volume rural roads where the probability of conflict is low. In addition, Council representatives have recommended temporary speed limit reductions on Bullecourt Road and Whitehead Street during the construction phase, to minimise risks, along with suitable measures in a driver code of conduct. These are both proposed to be implemented as part of a TMP (refer to Section 6.3.7) along with dilapidation surveys to monitor the condition of the local road network.

Accordingly, the local road network is considered suitable to accommodate the Project subject to the measures outlined.

6.3.5. Site access

Design

A swept path assessment was undertaken for the indicative site access design to confirm if the site access can accommodate heavy vehicles. *The assessment demonstrates that the access has been suitable designed to cater for the Project traffic expected to access the site, as follows:*

- 26m B-Doubles to / from the south
- High risk OSOM vehicles from the south.

Accordingly, it is concluded that the site access has been suitably designed and is able to accommodate the vehicles expected to access the Project Site.

Sight distance

Given that Whitehead Street has a speed limit of 100km/hr, a design speed of 110km/hr was adopted, which requires a SISD of 300m, based on a reaction time of 2.5 seconds.

The available site distance at the site access point exceeds the requirements of the Austroads Guide. Accordingly, vehicles are expected to be able to safely enter the road network at the proposed site access location.

6.3.6. Uncertainty

Key uncertainties in this assessment are the future traffic conditions, particularly in relation to the cumulative impacts with other large infrastructure projects. This is most relevant to the peak construction phase when overlapping construction schedules may exacerbate road safety risks, cause delays or adversely impact road assets. Potential cumulative impacts will be further considered during the preparation of the Traffic Management Plan prior to construction.

6.3.7. Mitigation measures

In summary, the Project's impacts on road safety and the road network can be managed. With the implementation of the measures below, the construction traffic would have a minimal impact to the capacity and safety of the surrounding road network.

The key mitigation strategies that will manage traffic and access relate to:

- Two road upgrades (now incorporated in the Section 3 Project description and not duplicated Table 6-15 below):
 - Construction of CHR(s)/BAL at the Honour Avenue / Bullecourt Road intersection
 - Construction of the site access off Whitehead Street
- Road surveys prior to construction and at the end of construction to ensure the road network is left in a condition equivalent to that at the start of construction.
- Development of a traffic management plan, in consultation with Transport for NSW and Federation Council., as set out in the table below.

Table 6-15 Safeguards and mitigation measures to manage traffic and access

ID	Mitigation measures	Project phase
T1	• Prior to construction, a pre-condition survey of the relevant sections of the existing road network should be undertaken in consultation with Council. During construction these sections of the road network are to be monitored and maintained to ensure continued safe use by all road users, and any faults attributed to construction of the BESS would be rectified. • At the end of construction, a post-condition survey would be undertaken to ensure the road network is left in a condition equivalent to that at the start of construction.	Pre-construction and post-construction
T2	A Traffic Management Plan (TMP) is to be prepared and implemented in accordance with Australian Standard 1742.3 and the <i>Work Health and Safety Regulation 2017</i> and in consultation with Transport for NSW and Federation Council. The TMP would provide additional information regarding the traffic volumes	All phases

ID	Mitigation measures	Project phase
	and the distribution of construction vehicles that us not available at this time, including: - Road transport volumes, distribution and vehicle types, broken down into: - Hours and days of construction - Schedules for phasing / staging of the Project. - The origin, destination and routes for: - Employee and contractor light vehicles - Heavy vehicle traffic - Oversize/Overmass vehicles. - A map of the primary haulage routes, highlighting critical locations - An induction process for vehicle operators and regular toolbox meetings - A complaint resolution and disciplinary procedure - Local climatic conditions that may impact road safety of employees throughout all Project phases (e.g. fog, wet and significant dry, dusty weather).	
T3	The TMP would include scheduling provisions including: - Consideration of heavy vehicles travelling during school bus times to limit the interaction of larger vehicles and vulnerable road users. - OSOM vehicle trips timed so they do not coincide with other OSOM vehicles within the surrounding area where warranted, to limit the impact to the road network, which can be undertaken as part of the permit application.	All phases
T4	The TMP would include the implementation of a community information and awareness program would assist in managing the traffic impacts. Prior to construction commencing and during the construction period, a program of consultation shall be initiated to ensure local residents are aware of construction traffic accessing the Project. This program may include elements of the following, as appropriate to the phase of works: - Press releases in local newspapers - Specific emails, newsletters and individual letter drops to neighbouring residents along the access route to the Project - Provision of a website providing details of the status of works and contact details for complaints or enquiries - Provide key contact personnel and contact details, including out of hours contact information to residents, schools, public activities and business operating alongside the local route - Neighbours of the BESS would be consulted and notified regarding the timing of major deliveries which may require additional traffic control and disrupt access	Construction

ID	Mitigation measures	Project phase
T5	The TMP would include temporary speed limit reductions and suitable warning signs during construction on Bullecourt Road and Whitehead Street. The temporary reduction in speed would minimise safety risks on the access route to the Project Site and at the intersection of Bullecourt Road and Whitehead Street. If deemed necessary, additional warning signs advising of the changed traffic operations and heavy vehicles are to be appropriately located on approaches to and from the transport routes on Council roads. These should warn existing road users of changed traffic conditions. The use of day warning notices where signs are activated on a specific day to warn local road users of construction activities may also be applied.	Construction
T6	On-site traffic protocols would be included in the TMP and include: • On-site speed restrictions • Appropriate dust suppression measures • Maintenance program for on-site access tracks to ensure safe access • Loading and unloading is proposed to occur within the work area. No street or roads would be used for material storage at any time • Sufficient car parking is to be provided on-site to ensure vehicles do not park on the surrounding road network • All car parking and loading areas to be designed in accordance with the relevant Australian Standard (2890 series) and Council requirements.	All phases
T7	A Driver Code of Conduct is to be implemented as a measure to maintain safety within and around the Project Site: • All vehicles would enter and exit the site in a forward direction • Heavy vehicle movements should avoid peak school bus times to limit the interaction of larger vehicles and vulnerable road users • Safety initiatives for impacts to residential areas and / or school bus zones • Utilisation of only the designated transport routes. • Construction vehicle movements are to abide by finalised schedules as agreed by the relevant authorities. • All permits for working within the road reserve must be received from the relevant authority prior to works commencing.	Pre-construction

6.4. Hazards (Preliminary Hazards Analysis)

6.4.1. Approach

Pando Consulting Pty Ltd (Pando) was appointed to conduct a Preliminary Risk Screening (PRS) and Preliminary Hazard Analysis (PHA) for the Project. This section provides a summary of the findings of these assessments, with a copy of the full assessment attached as Appendix E4.

The objectives of the assessments were to:

- Develop a comprehensive understanding of the hazards and risks associated with the operation of the Project and the adequacy of proposed safeguards
- Detail commitments made by the Applicant, including separation distances, and justify that the land area required for the BESS, including separation distances, is sufficient.

The scope of the PHA included the following (in response to the SEARs, provided in full in Appendix A):

- **Health:** an assessment of potential hazards and risks, including but not limited to fires, spontaneous ignition, and electromagnetic fields of the proposed grid connection infrastructure against the *International Commission on Non-Ionising Radiation Protection (ICNIRP) Guidelines for limiting exposure to time-varying Electric, Magnetic and Electromagnetic Fields*.
- **Dangerous goods:** a PRS completed in accordance with the *State Environmental Planning Policy (resilience and Hazards) 2021* (Resilience and Hazards SEPP).
- **Battery Energy Storage System:** a PHA prepared in accordance with *Hazardous Industry Planning Advisory Paper No. 6 – Guideline for Hazard Analysis* (DoP, 2011) (HIPAP 6) and *Multi-Level Risk Assessment* (DoP, 2011) (MLRA). The PHA considers all recent standards and codes and verifies separation distances to on-site and off-site receptors to prevent fire propagation, as well as compliance with *Hazardous Industry Advisory Paper No. 4 – Risk Criteria for Land Use Safety Planning* (DoP, 2011) (HIPAP 4). The PHA has, additionally, considered the effect of bushfires on batteries or other components of the BESS.

6.4.2. Existing environment

Health

The surrounding environment includes existing sources of Extremely Low Frequency (ELF) Electromagnetic Field (EMF) (i.e. 50Hz), including the existing Corowa Substation and associated power transmission infrastructure.

The Project would introduce additional sources of EMF, including BESS enclosures, transformers and electricity transmission lines.

Due to the rapid attenuation of EMF with distance, and the inclusion of BESS enclosures, it is anticipated that EMF will decrease significantly beyond the immediate vicinity of the Project. The EMF levels are expected to be well below the *ICNIRP Guidelines for Limiting Exposure to Time-Varying Electric and Magnetic Fields (1Hz - 100Hz)* (ICNIRP Guidelines) reference levels at the nearest receivers.

Table 6-16 ICNIRP reference levels for general public exposure at 50Hz

Frequency	Electric field (kV/m)	Magnetic field (μT)
50Hz	5	200

Additionally, the ICNIRP Guidelines literature review determined that the epidemiological and biological data concerning chronic conditions (i.e. long-term) were carefully reviewed and it was concluded that there is no compelling evidence that they are causally related to low frequency EMF exposure.

The impacts of EMF have been assessed in the hazard register (refer to Table 6-17) and in the risk assessment (refer to Section 6.4.4).

Bushfire

Details regarding the assessment and mitigation of bushfire are set out in Section 6.5 of this EIS. The results of the Bushfire Assessment were used to determine appropriate Bushfire Protection Measures, including the implementation of a 10 – 25m Asset Protection Zone (APZ) around all permanent and temporary built infrastructure.

6.4.3. Standard protection measures

BESS safeguards

The development of the Corowa BESS will incorporate the following risk mitigation and management systems and procedures:

- **Battery Management System:** The BESS will be equipped with a BMS which will monitor the operational and fault status of the system for all parameters required to enable the safe operation of the batteries, including State of Charge (SoC), voltage, current, power limits and temperatures. Parameters are monitored at the appropriate level of 'battery cell', 'module' and 'rack', as appropriate.
- **Fire Suppression System (FSS):** The BMS will include a built-in detection system and may potentially include a built-in suppression system.
- **Thermal Management System (TMS):** The Project design and operational procedures will follow specific thermal regulation measures to manage and mitigate fire risk as identified in different BESS OEMs meeting specific measures and requirements.
- **Contaminated Water Management:** In the unlikely event of a BESS fire event, water used for cooling / to prevent the spread of fire may become contaminated with potentially hazardous substances. To avoid these contaminants mobilising into the environment, engineering solutions¹⁶ would be implemented in the design stage to ensure that this water is captured and contained. This would be addressed within a Fire Management Plan, prepared in

¹⁶ This could include the installation of impervious retention facilities to capture run-off from fire and smoke suppressing activities, and suitable treatment plants for the disposal of contaminated water in accordance with the appropriate Australian standards for the storage and handling of dangerous goods.

accordance with the Victorian Country Fire Authority's (CFA's) Design Guidelines and Model Requirements for Renewable Energy Facilities (CFA, 2023)¹⁷.

- **Asset Protection Zone (APZ):** The Project design will include an APZ of varying width around all permanent and temporary built infrastructure in accordance with the BFAR (NGH, 2025), incorporating adequate perimeter access for fire brigade vehicles, as detailed in FRNSW guideline "Access for fire brigade vehicles and fire fighters".

Subject to detailed design phase of the Project, the BESS may also include:

- Gas detection and suppression
- Water suppression
- Pressure relief vent
- Pressure blast panels.

In accordance with NFPA 855 14.3.2.2, the containerised BESS would be designed to include a 2-hour fire resistance rating and a fire alarm system. Other safeguards include:

- Emergency stop
- Ground fault detection
- Manual Service Disconnect (MSD) switch
- Overcurrent protection.

BESS separation distances

A separation distance may be the most effective control to reduce the likelihood and consequence of fire propagation as a result of thermal runaway events (self-heating of an electrochemical system in an uncontrollable fashion). The separation distances assumed by this assessment for the BESS include:

- 4,000mm between pairs of BESS units, or the distance recommended by the OEM
- 3,500mm between a pair of BESS units and a wall or other infrastructure, or the distance recommended by the OEM
- 1,000mm between BESS containers (back-to-back), or the distance recommended by the OEM.

In accordance with the National Fire Protection Agency (NFPA) 855 *Standard for the Installation of Stationary Energy Storage Systems* (NFPA 855), the minimum clearance to enclosures for outdoor stationary Energy Storage Systems (ESS) installations is 10 feet. A minimum clearance of 3,500mm between BESS containers exceeds this requirement.

The Applicant is yet to specify a battery OEM and procure UL9540A test reports for the selected battery OEM. Selection of technology is typically finalised during detailed design, and given the early stage of the Project, no certainty about technology can be provided.

Publicly available product specifications and/or cell level UL9540A test reports for utility scale LFP batteries, indicate that 100mm to 500mm separation is suitable to prevent thermal runaway from propagating from battery unit to battery unit. Based on this data, it is reasonable to anticipate that a

¹⁷ This is not a NSW RFS guideline but it is the guideline that speaks to this risk most appropriately.

back-to-back separation of 1,000mm is practical at the planning phase (and may be reduced during detailed design).

Recent full-scale fire tests of grid-scale BESS, conducted in accordance with UL9540A protocols, indicate that many leading OEMs are now achieving non-thermal propagation between adjacent BESS units. These results, observed in tests by manufacturers such as Hithium, Sungrow, Fluence, and Canadian Solar, demonstrate that with appropriate system design and fire containment measures, thermal runaway events can be effectively confined to the initiating unit without spreading to neighbouring systems.

Based on the above, the BESS configuration and separation distances are considered appropriate at the planning phase of the development. Following the implementation of the recommendations in the PHA, including the proposed separation distances, the likelihood of a multi-module fire would be minimised to a 'non-credible event'.

Detailed design standards

The detailed design of the BESS will comply with relevant standards and codes, as well as OEM product specifications, UL9540A test report recommendations and the recommendations of the Fire Safety Study.

6.4.4. Preliminary Risk Screening

Approach

The objective of the Preliminary Risk Screening (PRS) was to determine whether the proposed development is considered a 'potentially hazardous industry' as defined by the Resilience and Hazards SEPP.

Projects that are classified as a 'potentially hazardous' industry require a PHA in accordance with HIPAP 6 to determine the risk to people, property and the environment.

The risk screening process considers the type and quantity of hazardous materials to be stored on site as well as the expected number of transport movements. Risk screening is undertaken by comparing the storage quantity and the number of road movements of the hazardous materials with screening threshold specified in the *Hazardous and Offensive Development Application Guidelines – Applying SEPP 33* (DoP, 2011) (Applying SEPP 33). The screening thresholds represent the quantities below which it can be assumed that significant off-site risk is unlikely.

The assessment considered the use (including the mode of storage and transportation) of a range of hazardous materials, from refrigerants to LFP battery cells, through diesel fuel and herbicides. Details of the assessment are set out in Tables 4-1 and 4-2 of the PHA, attached in Appendix E4.

Results

The results of the PRS indicated that the storage and transport of hazardous materials do not exceed the relevant thresholds. Accordingly, **the Project would not be considered potentially hazardous**

industry (with the implementation of codes and standards) and it can be assumed that significant off-site risk is unlikely.

6.4.5. Preliminary Hazards Analysis

Approach

The methodology for the PHA included the following:

- Identification of hazards / events (hazardous scenario)
- Analysis of consequences (rating of insignificant, minor, moderate or major) and associated likelihood (from extremely unlikely to likely)
- Generation of a hazard register, wherein hazards and events, their causes and consequences are listed, mitigation measures are identified, and their likelihood is rated
- Undertaking of a risk assessment: considering the likelihood and consequence of each of the hazardous scenarios identified, determine the Risk Acceptance Criteria: from High (unlikely to be tolerated); through Medium (tolerable if practical); to Low (broadly acceptable).

Results

A total of 17 hazardous scenarios were identified in the hazard register. Of these, none (0) were categorised as high-risk events, 13 were categorised as medium-risk events and 4 were identified as low-risk events. The risk assessment results are summarised in Table 6-17 below.

Table 6-17 Risk assessment results

No.	Hazard	Event	Consequence rating	Controls	Likelihood	Risk rating
1	Electrical	Exposure to voltage	Major	- Electrical switch-in & switch-out protocol (pad lock) - BMS including fault detection and shut-off function - Ground fault detection - Manual Service Disconnect (MSD) switch - Overcurrent protection - Rescue kits (i.e., insulated hooks)	Very unlikely	Medium
2	Arc flash	Arc flash	Major	- Maintenance procedure (e.g., deenergize equipment) - Preventative maintenance (insulation)	Very unlikely	Medium
3	EMF	Exposure to EMF	Insignificant	- Location and selection (incl. separation distance) - Optimising equipment layout and orientation - Reducing conductor spacing - Balancing phases and minimising residual current - Incidental shielding (i.e., BESS building/enclosure, switch room) - Exposure to personnel is short duration in nature (transient) - Studies found that the EMF for commercial solar power generation facilities complies with ICNIRP occupational exposure limits	Extremely unlikely	Low

No.	Hazard	Event	Consequence rating	Controls	Likelihood	Risk rating
4	Fire	Fire – transformers and PCU	Major	- Preventative maintenance (e.g., insulation, replacement of faulty equipment) - Activation of emergency shutdown (ESD button)	Very unlikely	Medium
5	Fire	Fire – substation / switch room	Major	- Inverter/transformers (PCU) are in designated area - Preventative maintenance (e.g., insulation, replacement of faulty equipment) - Electrical switch-in & switch-out protocol (pad lock) - Circuit breakers - Substation is locked and located in designated area - Security fence and controlled access - Activation of emergency shutdown (ESD button)	Extremely unlikely	Medium
6	Fire	Fire – temporary construction facilities	Major	- Cooling water supply on-site - Defendable boundary for firefighting will be established (i.e., APZ) - Dedicated smoking area - Fire protection system in the temporary construction facilities	Very unlikely	Medium
7	Fire	Bushfire	Major	Bushfire Protection Measures (BPM) in accordance with <i>Planning for Bush Fire Protection 2019</i>, including: - APZs - Access	Very unlikely	Medium

No.	Hazard	Event	Consequence rating	Controls	Likelihood	Risk rating
				- Construction siting and design - Landscaping - Services - Emergency and evacuation planning (fire safety study, emergency response plan and bush fire emergency management and operations plan). Additional controls including: - Separation between BESS containers - Fire-resistant enclosures and passive fire barriers between battery racks - Gas detection & venting systems to prevent pressure buildup - Remote monitoring & emergency response plans for early intervention.		
8	Reaction	Thermal runaway in battery	Major	- Separation distances in accordance with product specifications and UL9540A test reports - LFP battery cells with high thermal stability - BMS - Overcurrent protection - Battery module isolation loss alarm FSS - FSS - TMS 2-hour fire resistance rating and a fire alarm system - Emergency stop	Very unlikely	Medium

No.	Hazard	Event	Consequence rating	Controls	Likelihood	Risk rating
				- Ground fault detection - MSD switch		
9	Chemical	Release of electrolyte from the battery cell (liquid/vented gas) resulting in fire and/or explosion	Major	- Layers of battery case (pod and external casing) - Spill cleanup using dry absorbent material - BMS including fault detection and shut-off function - HVAC system - BESS FSS	Very unlikely	Medium
10	Chemical	Battery coolant leak	Minor	- Layers of battery case (pod and external casing) - Spill cleanup using dry absorbent material - BMS fault detection and shut-off function	Very unlikely	Low
11	Chemical	Refrigerant leak (BESS and refrigeration/chiller units)	Minor	- BESS layers of battery case (pod and external casing) - BESS BMS fault detection and shut-off function - Chiller Unit separation distance to other equipment	Very unlikely	Low
12	Chemical	Exposure to hazardous material (herbicide/pesticide)	Minor	- Product will be stored in dedicated storage area in a bund - A spill kit will be kept near the dedicated storage area - Quantity kept in work area will be minimised - No spraying will be done during high wind - Limited usage prior to and during rain events	Very unlikely	Low

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Corowa Battery Energy Storage System

No.	Hazard	Event	Consequence rating	Controls	Likelihood	Risk rating
13	Chemical	Release of diesel from storage tank, filling point or during handling resulting in fire	Major	- Diesel is a combustible liquid and will be stored away from other flammable materials (e.g., gasoline) - Secondary containment (i.e., bunding) - Defendable boundary for firefighting will be established	Very unlikely	Medium
14	Chemical	Release of gasoline from storage tank or filling point resulting in fire	Major	- Secondary containment (i.e., bunding) - Defendable boundary for firefighting will be established	Very unlikely	Medium
15	External factors	Water ingress resulting in fire (BESS, PCU or switch rooms)	Major	- Location siting (i.e., outside of flood prone area) - Switch rooms and BESS are housed in dedicated enclosure/building, which will be designed and constructed with ingress protection and in accordance with relevant standards - Drainage system - Preventative maintenance (check for leaks)	Extremely unlikely	Medium
16	External factors	Vandalism due to unauthorised personnel access	Moderate	- Project infrastructures are in secure fenced area - Onsite security protocol - During construction, the area will be patrolled, and fence will be installed	Unlikely	Medium
17	External factors	Lightning strike	Major	Project designed in accordance with <i>Australian Standard AS/NZS 1768 Lightning protection</i> , including:	Very unlikely	Medium

Environmental Impact Statement

Corowa Battery Energy Storage System

No.	Hazard	Event	Consequence rating	Controls	Likelihood	Risk rating
				• Earthing • Lightning protection mast (substations) • Site exclusion/closure		

The hazardous scenario with the worst-case consequence was identified to be a fire. As the separation distances exceed requirements, and the risks at the site boundary are not considered to exceed the acceptable risk criteria, the proposed separation distances are considered appropriate at the planning phase of the development. Following the implementation of the recommendations of the PHA, including the proposed separation distances, the likelihood of a multi-module fire would be minimised to a 'non-credible event'. Therefore, the likelihood for fires is rated as Very unlikely.

6.4.6. Uncertainty

Key uncertainties in this assessment are the incorporation of the *Standard protection measures* set out above, into the detailed design stage. As the final design and component selection will not be undertaken unless the Project is approved, the assumptions of the assessment are made clear in this assessment. Updated assessment will be required if these assumptions are not carried forward into the detailed design phase of the Project.

6.4.7. Mitigation measures

In summary, the risk assessment concluded that there is negligible potential for offsite fatalities or injuries. Based on the risk acceptance criteria used for the study, the risk profile for the Project is considered tolerable, given the measures taken, **As Low as Reasonably Practicable (ALARP)**.

The PHA demonstrates that the risk levels associated with the BESS do not impede the approval of the Project. This PHA demonstrates that the Project does not pose a significant off-site risk and that a Level 1 assessment is appropriate in accordance with *Multi-Level Risk Assessment* (DoP, 2011).

Table 6-18 Safeguards and mitigation measures to manage BESS hazards

ID	Mitigation measures	Project phase
H1	The results of the PHA would be used as inputs into other safety studies required, including: • Emergency response plan • Fire safety study • Bush Fire Emergency Management and Evacuation Plan (BFEMEP) that identifies all relevant risks and mitigation measures associated with the construction and operation of the Project, including: ○ Detailed measures to prevent or mitigate fires igniting ○ Work that should not be carried out during total fire bans ○ Availability of fire-suppression equipment, access and water ○ Storage and maintenance of fuels and other flammable materials ○ Notification of the local NSW RFS Fire Control Centre for any works that have the potential to ignite surrounding vegetation, proposed to be carried out during a bushfire fire danger period to ensure weather conditions are appropriate ○ Appropriate bushfire emergency management planning.	All phases
H2	The Applicant would only procure a BESS where the OEM has conducted and	Pre-construction

ID	Mitigation measures	Project phase
	documented full-scale fire testing in accordance with UL 9540A protocols, demonstrating non-propagation of thermal runaway between adjacent BESS units	
H3	Following a decision of the BESS OEM, the detailed design of the BESS will be undertaken to comply with the requirements of Section 3.2 of the PHA (Appendix E.4), including separation distances, UL9540A test reports and OEM recommendations	Pre-construction
H4	If the Applicant chooses to use the Tesla Megapack, all recommendations from the Victorian Big Battery Fire Statement of Technical Findings – Victorian Government 2021 will be implemented.	All phases

6.5. Bushfire

6.5.1. Approach

A Bushfire Assessment Report is required as per the SEARs issued 23 July 2025 (included in full, Appendix A). The Project is required to be assessed against the requirements of the NSW *Planning for Bush Fire Protection* (PBP 2019) (NSW RFS, 2019). The assessment was carried out by NGH Consulting.

The Bushfire Assessment consisted of the following stages:

- A desktop assessment of proposed infrastructure in relation to potential bushfire risk factors present, including vegetation, slope and access
- A site assessment to confirm bushfire risk factors present, and the applicable requirements of PBP 2019
- An assessment of Project compliance against PBP 2019 and *Australian Standard (AS) 3959:2018 – Construction of Buildings in Bush-fire Prone Area* (Standards Australia, 2018).

The Study Area for the Bushfire Assessment comprised the Project Site and an area measuring 140m surrounding the Project Site.

6.5.2. Existing environment

Forest fire danger index

The Forest Fire Danger Index (FFDI) is a measure of fire danger in areas of native vegetation. It is based on vegetation dryness, air temperature, wind speed and humidity, and considers the chances of a fire starting, potential fire spread, intensity, and difficulty of suppression. The FFDI can range from 50 to 100, where the higher FFDI indicates a higher degree of fire danger.

The default FFDI for the Federation Council LGA (Southern Riverina Fire Weather District) encompassing the Study Area and Project Site is FFDI 80.

Topography and slope

Slope and topography are key factors influencing bushfire behaviour, with fires tending to move more rapidly and with greater intensity uphill compared to flat or downhill terrain.

Effective slope¹⁸ informs the delineation of the Asset Protection Zone (APZ), and Bushfire Attack Level (BAL) construction standards, to comply with the aims and objectives of the PBP 2019. An APZ is a bushfire protection measure, providing a buffer around assets, established from the earliest stages of construction, and maintained in perpetuity. The size and design of APZs follow PBP 2019 guidelines and are influenced by factors such as vegetation type, slope, and the nature of the development.

¹⁸ Effective slope refers specifically to the gradient of the land beneath vegetation hazards and is considered in areas where the slope is less than 20°.

Vegetation types and classification

Vegetation is an important characteristic that influences fire behaviour and can elevate fire risk. Attributes of vegetation fuel vary across vegetation groups (type, amount, arrangement, moisture content), and these attributes affect bushfire characteristics, including ignition, spread, and intensity.

Plant Community Type (PCT) mapping can assist in vegetation classification. One PCT was identified within the Subject Land, being PCT 76: *Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions*. The Development Footprint contains this PCT as a low condition derived grassland within the existing substation area, and along the roadside. A woodland component of this PCT is located immediately southwest of the Development Footprint.

Bushfire-prone land

Bushfire-prone land (BFPL) comprises areas that have been certified by the Commissioner of the NSW Rural Fire Service (RFS) as able to support a bushfire, and are categorised as Category 1, Category 2 or Category 3, depending on the vegetation type and the intensity of bushfire that may potentially occur.

The Study Area is mapped, at a desktop level, predominantly as Vegetation Category 3¹⁹. The field assessment, however, indicates that the Study Area comprises a combination of Vegetation Category 1²⁰ and Vegetation Category 3.

A summary of the vegetation formations, categories and slope classes in the areas surrounding the Project Site, is provided in Table 6-19.

6.5.3. Bushfire protection measures

All structures located on land identified as BFPL must satisfy the aims and objectives outlined in the PBP 2019 for:

- Building construction requirements
- APZ
- Access and egress
- Water supply and utilities
- Plans and emergency procedures.

The sections to follow provide details of how the Project complies with the aims and objectives of the PBP 2019 for the above-listed elements.

• ¹⁹ Vegetation Category 3 comprises grasslands, freshwater wetlands, semi-arid woodlands, alpine complex, and arid shrublands. This category includes grazed grasslands and woodlands. These areas can support faster moving bushfires than other categories in high winds.

• ²⁰ Vegetation Category 1 comprises areas of forests, woodlands, heaths (tall and short), forested wetlands, and timber plantations. These areas generally support the highest intensity bushfires and are considered the highest risk vegetation.

Building construction requirements

The National Construction Code (NCC) (ABCB, 2022) contains all requirements for construction comprising the Building Code of Australia (BCA) as Volumes 1 and 2, and the Plumbing Code of Australia as Volume 3. The EP&A Act 1979 mandates that building work must comply with the BCA.

The switch room and the operation and maintenance facility/site office are identified as Class 8 buildings under the NCC. Buildings identified as Class 5 to Class 8 under the NCC, as well as BESS units are not directly covered by the NCC, however, they are considered in the context of an overall development.

For bushfire protection, all buildings in BFPL areas are to comply with AS 3959:2018 and the National Association of Steel-framed Housing (NASH) (NASH, 2014). Where applicable, assets should be constructed to withstand no greater than 29kW/m² calculated at 1,090K, corresponding to a BAL-29 or less separation distance.

BAL-29 was calculated and mapped using FireMaps GIS as shown in Figure 6-23. Project approval conditions generally do not permit construction in BAL-40 or BAL-Flame Zone (FZ).

Asset Protection Zone (APZ)

An APZ is a managed buffer between bush fire hazards and buildings, designed to reduce fuel loads, radiant heat, flame, smoke, and ember attack. The dimensions for APZs are designed in line with PBP 2019 requirements and are determined by surrounding vegetation type, slope, and the type of asset/development (NSW RFS, 2019). APZs may include roads or land maintained to meet the standards in Appendix 4 of PBP 2019 and the NSW RFS Standards for Asset Protection Zones (NSW RFS, 2015). A cleared and fuel-reduced area is vital in bushfire protection and influences construction requirements necessary to mitigate bushfire impacts.

The nominated APZ for the Project Site is based on a minimum BAL-29 separation distance (Figure 6-23). The minimum APZ distances for the site during construction are detailed in Table 6-19 below and shown in Figure 6-24. The minimum APZ distances and locations for operation are also shown in Figure 6-24. The APZ location is to commence from the perimeter of the outermost assets, outwards. As such, the APZ location may be subject to change based on future design layout. It is assumed that the built infrastructure including BESS, switch room, ancillary infrastructure, operation and maintenance buildings, and temporary facilities will not be located within the APZ shown in Figure 6-24. However, roads, access tracks, parking areas, fire water tanks, steel mesh fencing, and noise walls (if fire resistant and non-combustible) can be placed within the APZ.

Table 6-19 Vegetation and slope within the Study Area and associated minimum APZ distances

Direction	Vegetation formation	Vegetation Category	General slope	Slope class	APZ (m)
North	Woodland	Vegetation Category 1	Downslope	> 0° to 5°	13
North-east	Grassland	Vegetation Category 3	Upslope	All upslope and flat land (0°)	10
East	Grassland	Vegetation Category 3	Upslope	All upslope and flat land (0°)	10

Direction	Vegetation formation	Vegetation Category	General slope	Slope class	APZ (m)
South-east	Forest	Vegetation Category 1	Upslope	All upslope and flat land (0°)	20
South	Grassland	Vegetation Category 3	Downslope	> 0° to 5°	11
South-west	Grassland	Vegetation Category 3	Downslope	> 0° to 5°	11
West	Forest	Vegetation Category 1	Downslope	> 0° to 5°	25
North-west	Woodland	Vegetation Category 1	Downslope	> 0° to 5°	13

Asset Protection Zone management

All landscaping and vegetation within the established APZ must comply with requirements detailed in Appendix 4 of PBP 2019 and Standards for Asset Protection Zones (NSW RFS, n.d.). This includes but is not limited to the management of trees, shrubs, and grasses as per PBP 2019 (Table 6-20).

Table 6-20 APZ management requirements as per PBP 2019

Vegetation type	Minimum requirements
Trees	- Tree canopy cover should be less than 15% at maturity - Trees at maturity should not touch or overhang the building - Lower limbs should be removed up to a height of 2m above the ground - Tree canopies should be separated by 2m to 5m - Preference should be given to smooth barked and evergreen trees.
Shrubs	- Large discontinuities or gaps in shrub vegetation - Shrubs should not be located under trees - Shrubs should not form more than 10% ground cover - Clumps of shrubs should be separated from exposed windows and doors by a distance of at least twice the height of the vegetation.
Grasses	- Grass should be kept mown (no more than 100mm in height) - Leaves and vegetation debris should be removed.

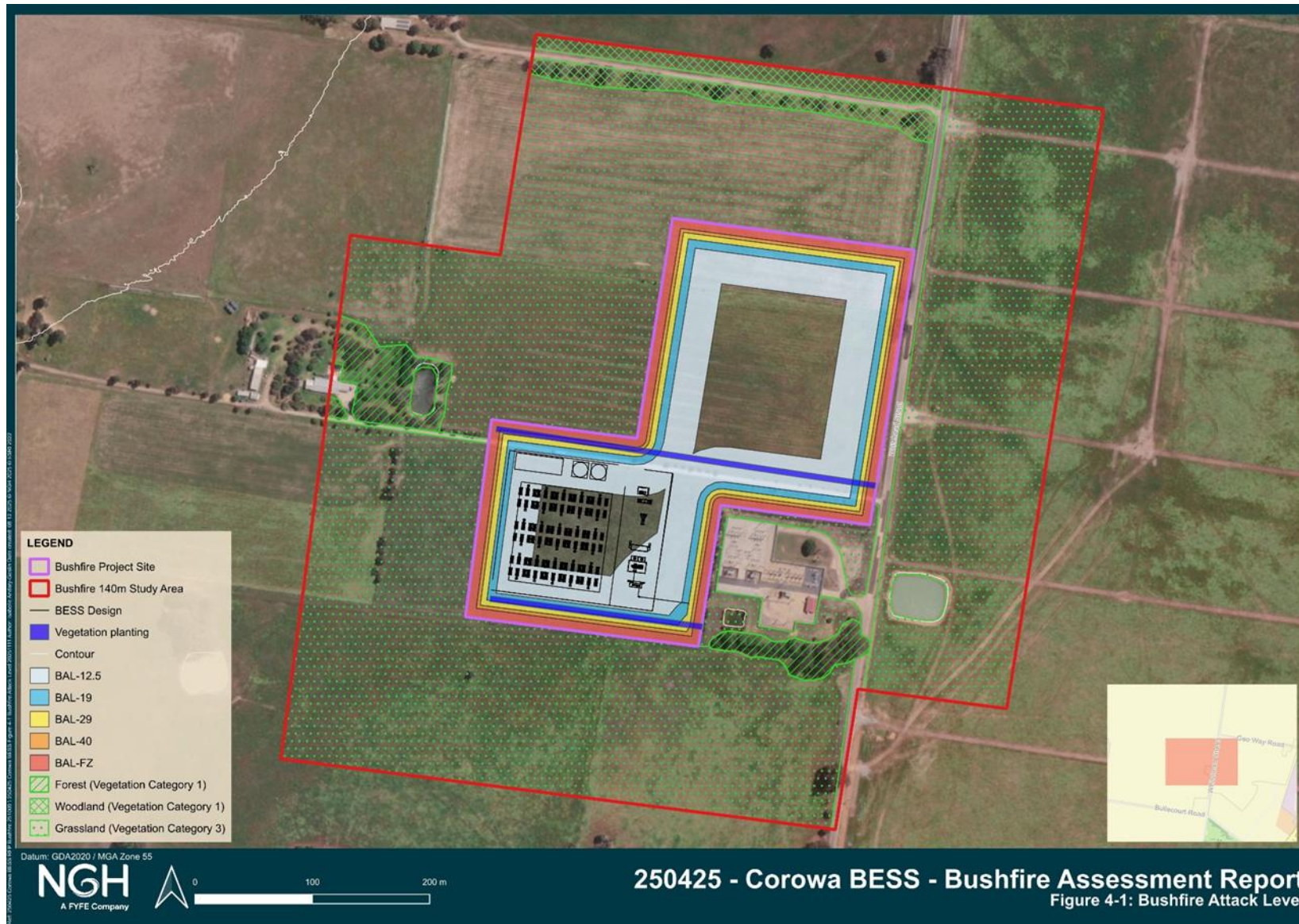


Figure 6-23 Bushfire Attack Level

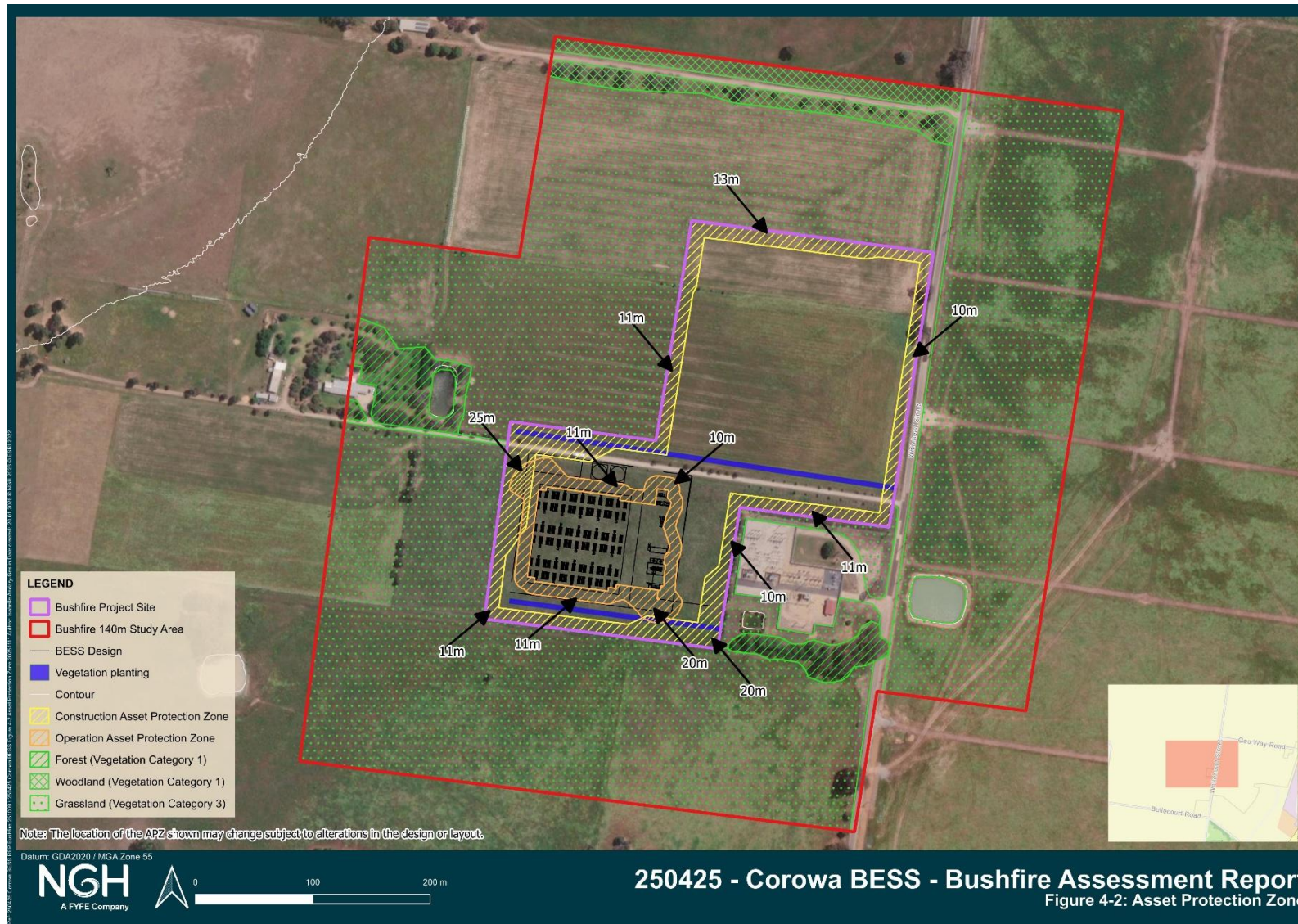


Figure 6-24 Asset Protection Zone

Access and egress

Access to the Project Site will be via an all-weather, access track off Whitehead Street. Whitehead Street connects to Riverina Highway to the north and Bullecourt Road to the south.

The access and egress requirements were assessed in accordance with the PBP 2019 performance criteria and found to be fully compliant. A summary of compliance is provided in Table 6-21.

Water supply and utilities

The water supply and utility requirements for the Project Site were assessed in accordance with the PBP 2019 performance criteria and found to be fully compliant. A summary of compliance is provided in Table 6-21.

Plans and emergency procedures

The Bushfire Assessment Report does not constitute a Bushfire Emergency Management and Evacuation Plan (BFEMEP). A BFEMEP will need to be developed for the Project prior to the commencement of construction.

Table 6-21 Performance criteria and acceptable solutions for access, water and electricity²¹

Performance criteria	Acceptable solutions	Notes	Complies / Will comply
Access			
Firefighting vehicles are provided with safe, all-weather access to structures.	Property access roads are two-wheel drive, all-weather roads	-	✓
	Perimeter roads are provided for residential subdivisions of three or more allotments	Although not a subdivision, a perimeter road will be provided for the BESS.	✓
	Subdivisions of three or more allotments have more than one access in and out of the development	Not a subdivision.	N/A
	Traffic management devices are constructed to not prohibit access by emergency services vehicles	-	✓
	Maximum grades for sealed roads do not exceed 15° and an average grade of not more than 10° or other gradient specified by road design standards, whichever is the lesser gradient	-	✓
	All roads are through roads	Road designs are not finalised, however will comply with PBP 2019 access requirements including through roads.	✓
	Dead end roads are not recommended, but if unavoidable, are not more than 200m in length,	Road designs are not finalised, however will comply with PBP 2019 access requirements including	✓

²¹ Criteria deemed to be 'not applicable' to the Project have been removed from this table but are shown in the Bushfire Assessment Report in Appendix E5.

Performance criteria	Acceptable solutions	Notes	Complies / Will comply
	incorporate a minimum 12m outer radius turning circle, and are clearly sign posted as a dead end	through roads.	
	Where kerb and guttering is provided on perimeter roads, roll top kerbing should be used to the hazard side of the road	Kerbing is not proposed.	N/A
	Where access/egress can only be achieved through forest, woodland and heath vegetation, secondary access shall be provided to an alternate point on the existing public road system	Access available to the Project Site from the north and south along Whitehead Street. Access primarily through grassland.	✓
	One way only public access roads are no less than 3.5m wide and have designated parking bays with hydrants located outside of these areas to ensure accessibility to reticulated water for fire suppression.	No one way public access roads. Static water supply only.	N/A
The capacity of access roads is adequate for firefighting vehicles.	The capacity of perimeter and non-perimeter road surfaces and any bridges/causeways is sufficient to carry fully loaded firefighting vehicles (up to 23 tonnes); bridges/causeways are to clearly indicate load rating.	- -	✓
There is appropriate access to water supply.	Hydrants are located outside of parking reserves and road carriageways to ensure accessibility to reticulated water for fire suppression	Static water supply only. If hydrants are added to the proposed Project, they are to comply.	N/A
	Hydrants are provided in accordance with the relevant clauses of AS 2419.1:2005 - <i>Fire hydrant installations System design, installation and</i>	Static water supply only. If hydrants are added to the proposed Project, they are to comply.	N/A

Performance criteria	Acceptable solutions	Notes	Complies / Will comply
	<i>commissioning</i>		
	There is suitable access for a Category 1 fire appliance to within 4m of the static water supply where no reticulated supply is available.	-	✓
Perimeter roads			
Access roads are designed to allow safe access and egress for firefighting vehicles while residents are evacuating as well as providing a safe operational environment for emergency service personnel during firefighting and emergency management on the interface.	Are two-way sealed roads	Perimeter roads may alternatively be all-weather heavy gravel to meet the performance criteria requirement.	✓
	Minimum 8m carriageway width kerb to kerb	A 5m all-weather road with 1.5m cleared either side to create 8m width. This is to allow two fire trucks to be able to pass each other. This meets the performance criteria for perimeter roads.	✓
	Parking is provided outside of the carriageway width	-	✓
	Hydrants are located clear of parking areas	Static water supply only. If hydrants are added to the proposed Project they are to comply.	N/A
	Are through roads, and these are linked to the internal road system at an interval of no greater than 500m	Road designs are not finalised, however will comply with PBP access requirements including through roads.	✓
	Curves of roads have a minimum inner radius of 6m	-	✓
	The maximum grade road is 15° and average grade of not more than 10°	-	✓

Performance criteria	Acceptable solutions	Notes	Complies / Will comply
	The road crossfall does not exceed 3°	-	✓
	A minimum vertical clearance of 4m to any overhanging obstructions, including tree branches, is provided.	-	✓
Non-Perimeter Roads			
Access roads are designed to allow safe access and egress for firefighting vehicles while residents are evacuating.	Minimum 5.5m carriageway width kerb to kerb	No non-perimeter roads.	N/A
	Parking is provided outside of the carriageway width	No non-perimeter roads.	N/A
	Hydrants are located clear of parking areas	No non-perimeter roads. If hydrants are added to the proposed Project they are to comply.	N/A
	Roads are through roads, and these are linked to the internal road system at an interval of no greater than 500m	No non-perimeter roads.	N/A
	Curves of roads have a minimum inner radius of 6m	No non-perimeter roads.	N/A
	The road crossfall does not exceed 3°	No non-perimeter roads.	N/A
	A minimum vertical clearance of 4m to any overhanging obstructions, including tree branches, is provided.	No non-perimeter roads.	N/A
Property access			
Firefighting vehicles can access the	There are no specific access requirements in an	-	✓

Performance criteria	Acceptable solutions	Notes	Complies / Will comply
dwelling and exit the property safely.	urban area where an unobstructed path (no greater than 70m) is provided between the most distant external part of the proposed dwelling and the nearest part of the public access road (where the road speed limit is not greater than 70kph) that supports the operational use of emergency firefighting vehicles. In circumstances where this cannot occur, the following requirements apply: • Minimum 4m carriageway width • In forest, woodland and heath situations, rural property access roads have passing bays every 200m that are 20m long by 2m wide, making a minimum trafficable width of 6m at the passing bay • A minimum vertical clearance of 4m to any overhanging obstructions, including tree branches • Provide a suitable turning area in accordance with Appendix 3 of the PBP (NSW RFS, 2019) • Curves have a minimum inner radius of 6m and are minimal in number to allow for rapid access and egress • The minimum distance between inner and outer curves is 6m • The crossfall is not more than 10° • Maximum grades for sealed roads do not exceed 15° and not more than 10° for unsealed roads		

Performance criteria	Acceptable solutions	Notes	Complies / Will comply
	A development comprising more than three dwellings has access by dedication of a road and not by right of way.		
Water supplies			
An adequate water supply for firefighting purposes is installed and maintained.	Reticulated water is to be provided to the development where available	Static water supply only.	N/A
	A static water and hydrant supply is provided for non-reticulated developments or where reticulated water supply cannot be guaranteed	Static water supply only.	✓
	Static water supplies shall comply with Table 5.3d of the PBP (NSW RFS, 2019).	-	✓
Water supplies are located at regular intervals. The water supply is accessible and reliable for firefighting operations.	Fire hydrant, spacing, design and sizing complies with the relevant clauses of AS 2419.1:2005	Static water supply only. If hydrants are added to the proposed Project, they are to comply.	N/A
	Hydrants are not located within any road carriageway	Static water supply only.	N/A
	Reticulated water supply to urban subdivisions uses a ring main system for areas with perimeter roads.	Static water supply only.	N/A
Flows and pressure are appropriate.	Fire hydrant flows and pressures comply with the relevant clauses of AS 2419.1:2005.	Static water supply only. If hydrants are added to the proposed Project, they are to comply.	N/A
The integrity of the water supply is	All above-ground water service pipes are metal,	-	✓

Performance criteria	Acceptable solutions	Notes	Complies / Will comply
maintained.	including and up to any taps		
	Above-ground water storage tanks shall be of concrete or metal.	-	✓
Electricity services			
Location of electricity services limits the possibility of ignition of surrounding bush land or the fabric of buildings.	Where practicable, electrical transmission lines are underground	This reference refers to distribution lines, not transmission lines.	✓
	Where overhead, electrical transmission lines are proposed as follows: Lines are installed with short pole spacing of 30m, unless crossing gullies, gorges or riparian areas No part of a tree is closer to a power line than the distance set out in ISSC3 <i>Guideline for Managing Vegetation Near Power Lines</i> .	This reference refers to distribution lines, not transmission lines.	✓
Gas services			
Location and design of gas services will not lead to ignition of surrounding bushland or the fabric of buildings.	Reticulated or bottled gas is installed and maintained in accordance with AS/NZS 1596:2014 - <i>The storage and handling of LP Gas</i> , the requirements of relevant authorities, and metal piping is used	No reticulated or bottled gas currently proposed within development.	N/A
	All fixed gas cylinders are kept clear of all flammable materials to a distance of 10m and shielded on the hazard side	No reticulated or bottled gas currently proposed within development.	N/A

Performance criteria	Acceptable solutions	Notes	Complies / Will comply
	Connections to and from gas cylinders are metal	No reticulated or bottled gas currently proposed within development.	N/A
	Polymer-sheathed flexible gas supply lines are not used	No reticulated or bottled gas currently proposed within development.	N/A
	Above-ground gas service pipes are metal, including and up to any outlets.	No reticulated or bottled gas currently proposed within development.	N/A

6.5.4. Uncertainty

Key uncertainties in this assessment are the incorporation of the *Bushfire protections measures* set out above, into the detailed design stage. Specifically, the layout of bushfire management infrastructure such as water storage tank locations is currently indicative. The final design would be confirmed in consultation with NSW RFS and FRNSW and will incorporate recommendations from these agencies.

6.5.5. Mitigation measures

The proposed development has been assessed to comply with relevant bushfire protection measures, including emergency access, and water supply provisions as per PBP 2019. It is therefore concluded that the proposed development can satisfy the bushfire protection requirements of the relevant legislation, codes, and guidelines.

Consequently, the mitigation strategy centres on ensuring that the detailed design will comply with the assessments and assumptions made in the Bushfire Assessment (Appendix E5, Section 4).

Table 6-22 Safeguards and mitigation measures to manage bushfire risks

ID	Mitigation measures	Project phase
BF1	The detailed design is to comply with the assessments and assumptions made in the Bushfire Assessment. Changes may require reassessment to confirm compliance with relevant legislative requirements.	Pre-construction
BF2	A Bush Fire Emergency Management and Evacuation Plan (BFEMEP) will be developed for the Project prior to construction	Pre-construction

6.6. Landscape and visual amenity

6.6.1. Approach

This section summarises the findings of the Landscape Character and Visual Impact Assessment (LCVIA) as well as providing a draft Landscape Plan undertaken by Moir Studio on behalf of the Applicant, provided in Appendix E6 and E7. The LCVIA was prepared to respond to the Project SEARs (Appendix A) and provides an assessment of the potential landscape character and visual amenity impacts of the Project and the recommended measures to mitigate them.

The assessment includes:

- Objective assessment of the relative aesthetic value of the landscape; defined as visual quality and expressed as high, moderate, low or very low. This assessment generally relates to variety, uniqueness, prominence and naturalness of the landform, vegetation and water forms within each character type.
- Determination of the landscape sensitivity and its ability to absorb different types of development on the basis of physical and environmental character.
- An assessment of viewer sensitivity to change. This includes how different groups of people view the landscape (for example, a resident as opposed to a tourist), and how many people are viewing the Project and from how far away.
- Viewpoint analysis to identify areas likely to be affected by development of the site and a photographic survey using a digital camera and a handheld GPS unit to record position and altitude.
- Preparation of photomontages depicting the Project from key viewpoints.
- Assessment of visual impacts.
- Recommendations to reduce the visual impacts of the Project and maintain the area's visual quality.

Appendix E6 provides a more detailed explanation of the study methods. Considering the generally low height of proposed infrastructure, the LCVIA focuses on impacts within and in proximity to a 2.5km buffer from the Project Site, this is defined as the Study Area. The Study Area is shown in Figure 6-25.

The LCVIA has considered the impacts of the Project in accordance with its layout and description as per Appendix E6.

Study Area

Refer to Section 4.2

- LEGEND
- Project Site
 - Development Footprint
 - Lot Boundary
 - Study Area (2.5 km from Project Site)
 - Local Government Area
 - Existing Transmission Line
 - Highways
 - Major Roads
 - Railway
 - Roads
 - Contours
 - Watercourse
 - Hydro Area

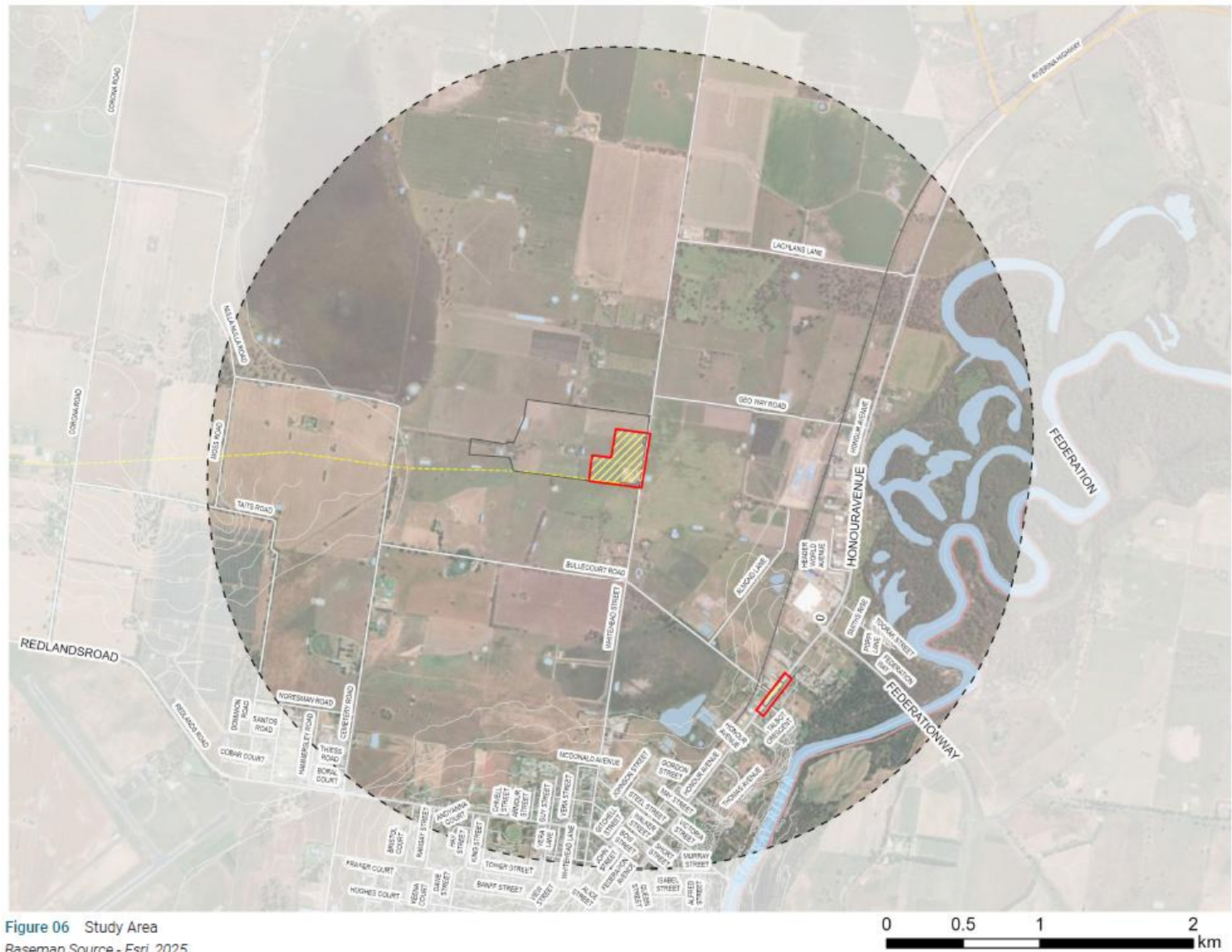


Figure 6-25 LCVIA Study Area (Moir Studio, 2025)



6.6.2. Existing environment

Landscape character

The Project Site falls within the Riverina Interim Biogeographical Regionalisation for Australia (IBRA). Located near the New South Wales and Victoria state border, the Study Area (refer to Figure 6-25) predominately contains the Murray Fans subregion as well as a portion of the Victorian Riverina subregion located to the southeast of the Project Site.

The landform of the Murray Fans subregion is characterised as a relatively confined alluvial fan which is constrained by sediments from northern Victorian rivers, the Murrumbidgee fan, and the Cadell fault. This landscape includes meandering channels, floodplains, source-bordering dunes, overflow lakes and swamps. Typical vegetative categories in the subregion include River Red Gum forests with River Cooba trees found on the low floodplains and channels contrasted by Yellow Box and Black Box intermixed with saltbush on the high floodplains and terraces. White Cypress Pines are found along dunes, sandy levees and lunettes with common reed, cumbungi and grasses present in swamps.

The Project Site itself is zoned RU1 – Primary Production. Land use within the Project Site and its immediate surrounds are comprised of cropping land, with agricultural grazing pastures located directly to the south (Moir Studio, 2025).

Key landscape characteristics of the Project include:

- Topographical character: most of the agricultural land is gently undulating to nearly flat. Closer to the Murray River, the topography becomes more varied with features such as levees, terraces and small depressions associated with the river corridor and floodplain. Soils in the area vary depending on the landform and include red-brown earths, grey clays and pockets of deep sands.
- Hydrological character: Murray River is the main hydrological feature within the Study Area, located approximately 2.5 km to the southeast of the Project Site. Wetland areas and marshes associated with the Murray River are also present to the east. There are numerous small farm dams and other man-made water storages are scattered throughout the agricultural landscape
- Vegetation character: Vegetation within the Study Area is mainly cleared and modified. However, any existing remanent vegetation are typical to the Murray Fans subregion. Dominant vegetation communities consist of extensive River Red Gum forests and River Cooba trees along the Murray River corridor, and scattered communities of Black Box and Yellow Box.
- Roads and infrastructure: The Project is located immediately west of Whitehead Street, with a sealed local road that connecting the Riverina Highway (northeast of the Project Site) with the Corowa township providing access to residences north of Corowa. The Corowa Substation is located adjacent to the Project Site and is accessed via Whitehead Street. Overhead powerlines and poles associated with the substation are existing features within the surrounding landscape. No major scenic routes exist within the Study Area.
- Local heritage items: local heritage site include:
 - Corowa Railway Station and Yard Group - listed in State Heritage Register
 - Corowa Distilling Co. (formerly Corowa Flour Mill) - listed in State Heritage Register
 - Corowa Heritage Conservation Area defined under the Corowa Local Environment Plan 2012 (NSW Government, 2025).

Landscape Character Zones

Moir Studio defined four Landscape Character Zones (LCZs) based on these features (Figure 6-32). These individual zones are detailed below and summarised in Table 6-23 in terms of their landscape character visual impact rating. This considers scenic quality, sensitivity to visual change and the likely magnitude of change, referencing the DPHI's Large Scale Solar Guideline Technical Supplement (DPHI, 2022b). As there are no applicable guidelines for BESS projects, this guideline has been adapted.

LCZ01 – Agricultural Plains

The Project is located within this LCZ. The landform is characterised by flat to gently undulating terrain. Land within this LCZ is predominantly zoned as RU1 - Primary Production under the Corowa LEP 2012. The land is highly cleared and modified for agricultural cropping, grazing native vegetation and grazing modified pastures. Scattered remnants of vegetation are typically in the form of clusters or lone trees, and windbreaks associated with residential receivers.

The scenic quality, sensitivity, magnitude and overall landscape character rating of this LCZ is rated as **Low**.



Figure 6-26 Image depicting views of agricultural plains from Bullecourt Road (Moir Studio, 2025).



Figure 6-27 Image depicting views of agricultural plains from Cemetery Road (Moir Studio, 2025).

LCZ02 – Murray River Corridor

This LCZ comprises of the Murray River catchment and surrounding riparian edge. The riparian corridor supports the establishment of mature vegetation communities including River Red Gum and River Cooba. This LCZ is distinct from its other surrounding LCZs, due to its extensive dense vegetation and minimal modifications in the landscape.

The scenic quality and sensitivity are rated as **Moderate**. The magnitude and overall landscape character rating of this LCZ is rated as **Low**.

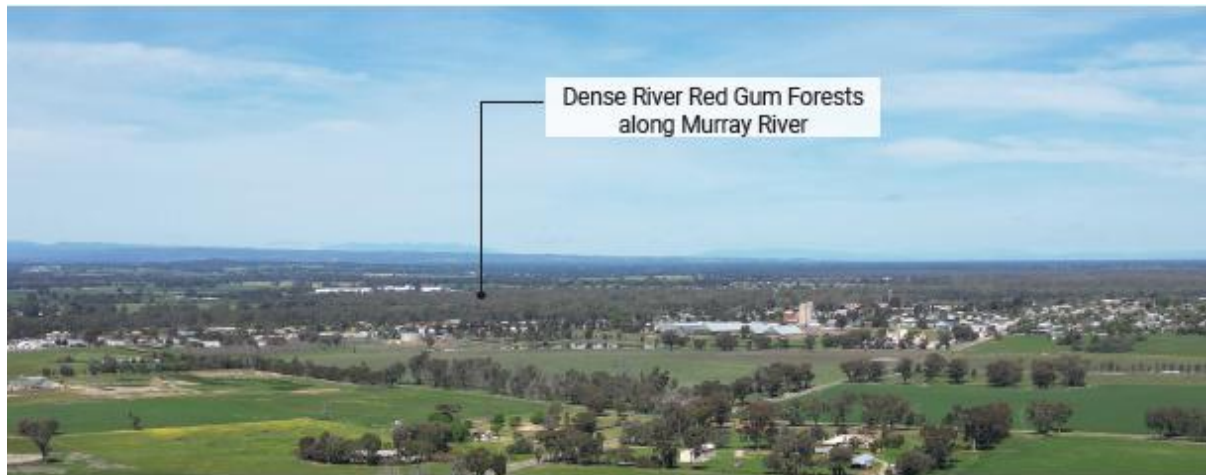


Figure 6-28 Aerial image depicting view of dense riparian vegetation along the Murray River corridor to the east of the Project Site (Moir Studio, 2025).

LCZ03 – Corowa Township

The township of Corowa sits approximately 1.8 km to the south of the Project and within the Study Area. Land within this LCZ is predominantly zoned as R1 - General Residential. Characterised by the highly modified landscape, which includes residential lots and commercial businesses. This LCZ sits adjacent to the Murray River, and as such includes areas for recreational use.

The scenic quality and sensitivity are rated as **Very Low**. The magnitude and overall landscape character rating of this LCZ is rated as **Low**.



Figure 6-29 Aerial image depicting view of Corowa township to the southeast of the Project Site (Moir Studio, 2025).



Figure 6-30 View of road infrastructure and industrial structures along Whitehead Street, bordering Corowa township (Moir Studio, 2025).

LCZ04 – Energy Infrastructure

This LCZ comprises of the Corowa Solar Farm, which is an existing solar energy production infrastructure located approximately 2 km to the southwest of the Project. The existing landscape is cleared and modified to facilitate the development.

The scenic quality, sensitivity, magnitude and overall landscape character rating of this LCZ is rated as **Very Low**.



Figure 6-31 Google Earth aerial image depicting Corowa Solar Farm (Moir Studio, 2025).

Landscape Character Zones
Refer to Section 4.9

- LEGEND
- Project Site
 - Development Footprint
 - Lot Boundary
 - Study Area (2.5 km from Project Site)
 - Local Government Area
 - Existing Transmission Line
 - Highways
 - Major Roads
 - Railway
 - Roads
 - Watercourse
 - Hydro Area
 - LCZ01 - Agricultural Plains
 - LCZ02 - Murray River Corridor
 - LCZ03 - Corowa Township
 - LCZ04 - Energy Infrastructure



Figure 6-32 Landscape character zones (Moir Studio, 2025)

Table 6-23 Summary of Landscape Character Assessment (Moir Studio, 2025).

LCZ	Name	Scenic quality rating	Sensitivity	Magnitude	Landscape character impact rating
LZC01	Agricultural Plains	LOW	LOW The landscape has been highly modified and cleared from its natural state for agricultural cropping and grazing activity. Existing energy infrastructure such as the Corowa substation, overhead power lines form part of the existing character of the landscape. It is unlikely that the Project will alter the existing character of the landscape.	LOW The Project is located within this LCZ. There are opportunities to view the Project from within the LCZ, however, existing scattered vegetation assists in screening views. In addition, the proposed screening vegetation is likely to contain views further.	LOW
LZC02	Murray River Corridor	MODERATE	MODERATE The landscape consists of extensive River Red Gum forests. Minimal human intervention in majority of the LCZ.	LOW Due to the densely vegetated character of the LCZ, views of the Project are unlikely to be viewed from any area of the LCZ.	LOW
LZC03	Corowa Township	VERY LOW	VERY LOW The landscape is highly modified and influenced by the Corowa settlement.	LOW Due to distance and intervening elements (vegetation and built structures), it is unlikely that the Project will be viewed from majority of the areas within the LCZ.	VERY LOW
LZC04	Energy Infrastructure	VERY LOW	VERY LOW The landscape is modified for agricultural and energy production purposes. The topography is predominantly flat with no prominent features.	VERY LOW The Project is located to the northeast of this LCZ. Screen plantings and other scattered vegetation towards the northeast are likely to obstruct views.	VERY LOW

6.6.3. Potential impacts

Zone of visual influence

A Zone of Visual Influence (ZVI) map was prepared to understand the theoretical visibility of the proposed infrastructure at an early stage of the Project's assessment. It represents the area over which a development can theoretically be seen based on topography. The ZVI analysis does not consider distance or the influence of vegetation or built structures in screening views, and as such provides a worst-case scenario to begin the assessment. The ZVI is useful as preliminary tool because it is accurate in identifying residences and viewpoints *that would not see* the infrastructure due to topography. Further assessment is required to establish if those with a theoretical view of the Project would be impacted, given actual distance from the Project and existing intervening structures or vegetation.

It is noted that the BESS infrastructure site is likely to be raised to a minimum of 141.25m AHD, to allow a 500mm freeboard and to protect assets from flood water. The modelling takes this into account and models the expected infrastructure heights, including the noise wall to surround the project.

The summary of findings of the ZVI are summaries below:

- 12 out of 13 non-associated receivers within the Study Area have theoretical visibility of the site.
- All seven dwelling entitlements have theoretical visibility of the site.

The ZVI has been used to identify areas of potentially high visibility. These were then ground validated and subject to more specific detailed analysis.

Viewshed Mapping

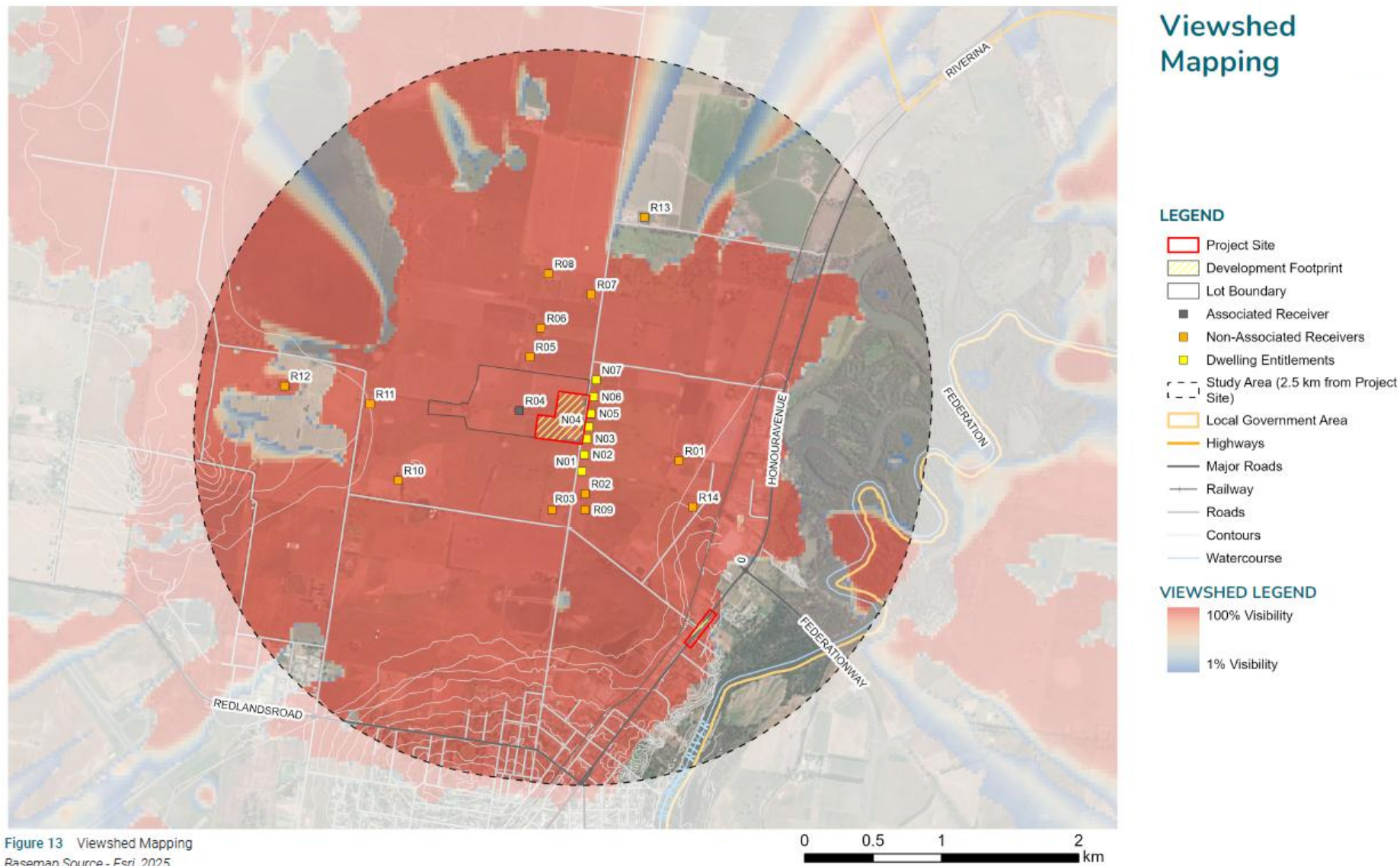


Figure 6-33 Viewshed Mapping showing theoretical visibility, based only on topography and Project height (Moir Studio, 2025)

Visual impact of nearby receivers and public viewpoints

As for the landscape character assessment, the overall visual impact is determined by combining the magnitude and sensitivity ratings. Viewpoints with very low or low visual impact do not require mitigation. Viewpoints that have a moderate or high visual impact are considered for mitigation to reduce the visual impacts associated with the Project.

Nearby receivers

Based on topography alone, 12 private receivers within the 2.5 km Study Area were identified to have a theoretical line of sight to the Project. However, further assessment using aerial imagery determined that eight of these receivers are likely to have obstructed views due to existing vegetation surrounding dwellings, agricultural infrastructure, and scattered trees within native grazing pastures. Four dwellings may have partial views of the Project; however, given the viewing distance and the relative scale of the development, these are expected to result in a Low visual impact rating.

No receivers were assessed to have greater than low visual impact ratings however, mitigation is being considered in line with community consultation commitments made by the Applicant, as shown on the Indicative Infrastructure Layout in Section 3.1. Refer to Table 6-25 for summary by each receiver.

Lots with dwelling entitlements

The visual assessment is required to consider constructed or approved dwellings. However, lots that have dwelling entitlements were also considered. There are seven dwelling entitlements located directly east of the Project (refer to Table 6-26).

No receivers were assessed to have greater than low visual impact ratings (Table 6-25) in consideration of the proposed vegetation screening adopted as above.

Public viewpoints

Four public viewpoints were selected from publicly accessible locations to represent a range of views. Viewpoints are selected to illustrate the following:

- Areas of high scenic value, or community value
- Views from public areas such as camp grounds, rest stops, lookouts, parks, community halls etc.
- Views from public roads
- Range of distances from the Project
- Range of elevations in relation to the Project
- Range of extent of visibility of the Project

The Project will result in a Low to Very Low visual impact on the existing landscape character. Due to the existing screen planting associated with the Corowa Substation, there are limited opportunities to view the Project from publicly accessible locations. Where views are available, the visual magnitude is not significant enough to change the existing landscape character.

From VP02 and VP03, views are fragmented due to the existing vegetation. From VP01, views are open, however with the existing substation and power lines in this view, the introduction of the Project results in a low contrast with the existing landscape.

The results from the visual impact assessment for public viewpoints are summarised in Table 6-24.

Table 6-24 Results of the public viewpoint analysis

Viewpoint	Location	Visual sensitivity	Visual magnitude	Visual impact rating
VP01	Whitehead Street, Corowa	Very Low	Very Low	Very Low
VP02	Whitehead Street, Corowa	Very Low	Very Low	Very Low
VP03	Bullecourt Road, Corowa	Very Low	Very Low	Very Low
VP04	Geo Way Road, Corowa	Very Low	Very Low	Very Low

The detailed assessment of individual viewpoints, located on Figure 6-34 and shown in photomontages in Figure 6-40 and Figure 6-41, indicated that:

- Public views of the Project are primarily limited to areas along Whitehead Street and Bullecourt Road.
- While visible from certain viewpoints (VP01, VP02, VP03), the overall visual impact is rated as **VERY LOW**.
- Views are limited by existing vegetation and the existing Corowa Substation.

Table 6-25 Summary of private receiver visual impacts, with and without mitigation

Receiver ID	Location	Visual Sensitivity	Visual Magnitude	Visual Impact	Visual Magnitude (with proposed screening)	Visual Impact (with proposed screening)
R05	309 Whitehead Street	Moderate	Low	Low	Very Low (No visibility)	Very Low
R06	345 Whitehead Street	Moderate	Very Low (No visibility)	Very Low	-	-
R07	373 Whitehead Street	Moderate	Very Low (No visibility)	Very Low	-	-
R03	136 Bullecourt Road	Moderate	Low	Low	Very Low (No visibility)	Very Low
R02	226 Whitehead Street	Moderate	Very Low (No visibility)	Very Low	-	-
R01	91 Almond Lane	Moderate	Very Low (No visibility)	Very Low	-	-
R08	361 Whitehead Street	Moderate	Very Low (No visibility)	Very Low	-	-
R09	214 Whitehead Street	Moderate	Very Low (No visibility)	Very Low	-	-
R10	242 Bullecourt Road	Moderate	Low	Low	Very Low (No visibility)	Very low
R11	68 Nulla Nulla Road	Moderate	Low	Low	Very Low (No visibility)	Very low
R12	57 Nulla Nulla Road	Moderate	Very Low (No visibility)	Very Low	-	-

Environmental Impact Statement

Corowa Battery Energy Storage System

Receiver ID	Location	Visual Sensitivity	Visual Magnitude	Visual Impact	Visual Magnitude (with proposed screening)	Visual Impact (with proposed screening)
R14	23 – 69 Almond Lane	Moderate	Very Low (No visibility)	Very Low	-	-

Table 6-26 Summary of Dwelling Entitlement Visual impacts

Receiver ID	Location	Potential Impacts	Visual Impact
N01	Lot 3/DP13001492	- Based on the viewshed analysis, the subject lot is likely to have a line of sight. - The existing vegetation as well as the proposed screening will likely obstruct views to the Project.	Very Low
N02	Lot 4/DP13001492	- Based on the viewshed analysis, the subject lot is likely to have a line of sight. - The existing vegetation as well as the proposed screening will likely obstruct views to the Project.	Very Low
N03	Lot 5/DP13001492	- Based on the viewshed analysis, the subject lot is likely to have a line of sight. - The existing vegetation and the existing substation will likely obstruct views to the Project. Likely to be viewed as part of the existing infrastructure.	Low
N04	Lot 6/DP13001492	- Based on the viewshed analysis, the subject lot is likely to have a line of sight. - The existing vegetation and the existing substation will likely obstruct views to the Project. Likely to be viewed as part of the existing infrastructure.	Low
N05	Lot 7/DP13001492	- Based on the viewshed analysis, the subject lot is likely to have a line of sight. - The existing vegetation as well as the proposed screening will likely obstruct views to the Project.	Very Low
N06	Lot 8/DP13001492	- Based on the viewshed analysis, the subject lot is likely to have a line of sight. - The existing vegetation as well as the proposed screening will likely obstruct views to the Project.	Very Low
N07	Lot 9/DP13001492	- Based on the viewshed analysis, the subject lot is likely to have a line of sight. - The existing vegetation as well as the proposed screening will likely obstruct views to the Project.	Very Low

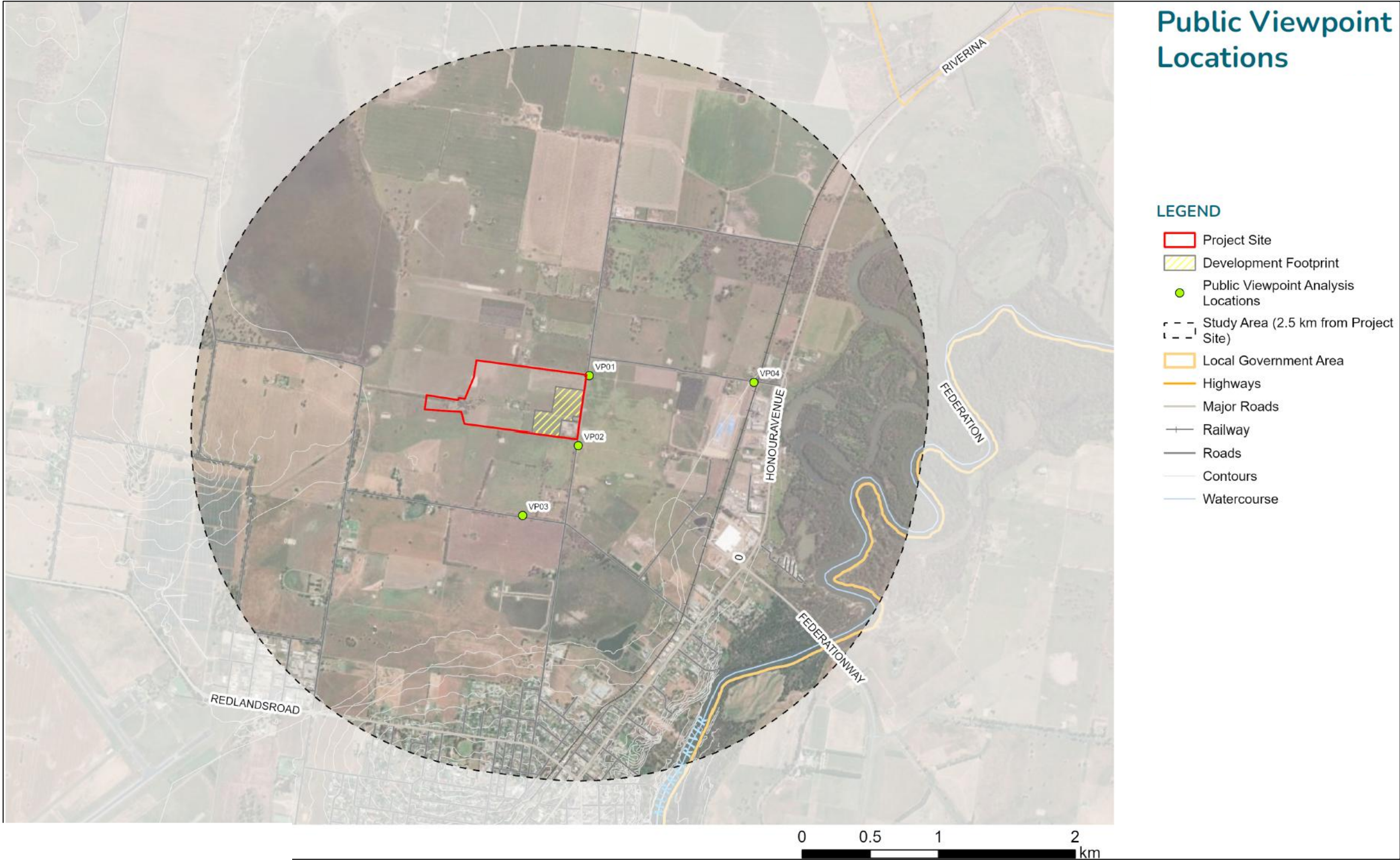


Figure 6-34 Public viewpoints (Moir Studio, 2025)



Figure 6-35 Public viewpoint 1 – Whitehead Street, Corowa NSW (Moir Studio, 2025)



Figure 6-36 Public viewpoint 2 – Whitehead Street, Corowa NSW (Moir Studio, 2025)



Figure 6-37 Public viewpoint 3 – Bullecourt Road, Corowa NSW (Moir Studio, 2025)



Figure 6-38 Public viewpoint 4 – Geo Way Road, Corowa NSW (Moir Studio, 2025)

Cumulative visual impacts

The occurrence of large-scale energy storage projects within a region has the potential to alter the perception of overall landscape character irrespective of being viewed in a single viewshed, as these projects could become part of the existing landscape.

Due to the size and scale of the Project, cumulative visual impact was assessed 2.5km of the Project Area. There is one infrastructure project associated with large scale energy production and reticulation:

- Corowa Solar Farm
- Existing 132kV Essential Energy overhead transmission line, associated Corowa Substation electrical infrastructure and street powerlines.

The results of the public and private viewpoint assessment of the Project show the visual impacts from the Project are limited to private viewpoints and private agricultural land immediately surrounding the Project. The desktop ZVI was verified during the site assessment. There was no opportunity for a montage from a public location due to both distance and intervening vegetation.

Due to the low scale of the Project, low accessibility from public viewpoint locations and intervening vegetation, the cumulative visual impacts are confined to the immediate surrounds and are therefore considered low.

Photomontages

A photomontage is a visualisation based on the superimposition of the Project onto a viewpoint photograph for the purpose of creating a realistic representation of proposed or potential changes to a view. Often with the photomontage, a 3D model is used, called a wireframe.

A wireframe is a computer-generated image based on a digital terrain model, that indicates the 3D shape of the landscape in combination with additional elements. Wireframe diagrams can be seen as a worst-case scenario as they do not consider factors such as vegetation and structures and only consider the topography. Wireframe diagrams have been utilised in this LCVIA to verify photomontages.

Due to intervening topography, vegetation and/or infrastructure, there were no opportunities for photomontages from key viewpoints to represent the potential Project visual impact. Two panoramas looking toward the Project from receivers R1 and R2 were selected to represent general visibility of the Project for the closest non associated receivers. Viewpoints selected for the preparation of the panoramas are generally those determined to have greatest potential visual magnitude change and impact in comparison to other viewpoints analysed.

PM01 was selected to represent a view of nearby non-associated residences (Figure 6-40). PM02 was selected to represent a view of a nearby non-associated residences from an alternative direction (Figure 6-41). The location of these receivers is shown in Figure 6-39.

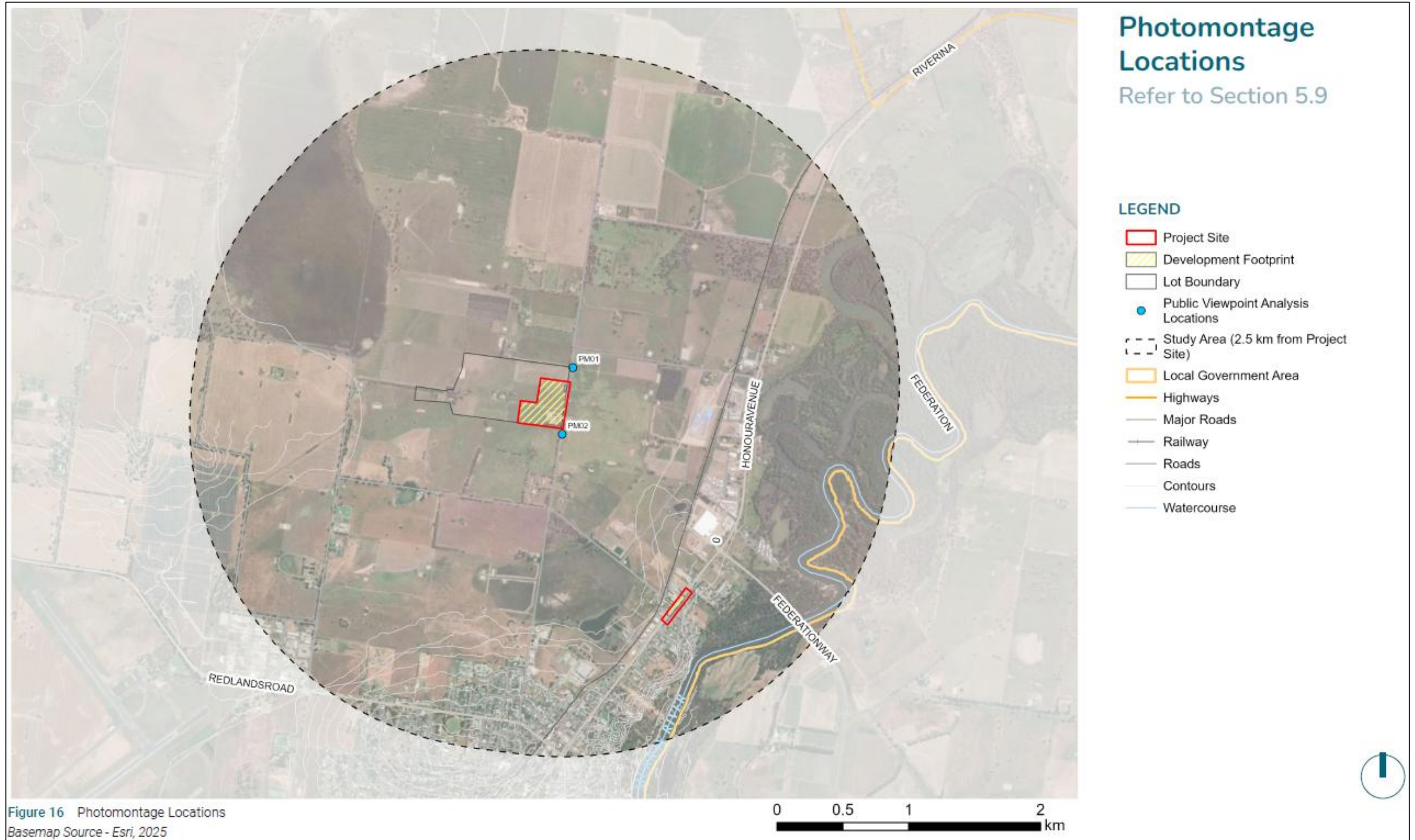


Figure 6-39 Photomontage locations (Moir Studio, 2025)



180° Proposed View



180° Proposed View (With Screen Planting)

Figure 6-40 PM01 panorama taken along Whitehead Street, looking southwest towards Project Site (Moir Studio, 2025)



180° Proposed View



180° Proposed View (With Screen Planting)

Figure 6-41 PM02 panorama taken along Whitehead Street, looking northwest towards Project Site (Moir Studio, 2025)

Night lighting

It is likely that there would be limited visual impacts resulting from night lighting of ancillary structures, given the ability to mitigate this impact. Any night lighting would be designed with reference to the following recommendations that have been developed with reference to *The Dark Sky Planning Guidelines* (DPHI, 2025) and the *Australian Government Department of the Environment and Energy, National Light Pollution Guidelines for Wildlife* (DCCEEW, 2020). Generally, the lighting would be controlled by

- Only use lighting for areas that require lighting i.e., paths, building entry points
- Reduce the duration of lighting
- Switch off lighting when not required
- Consider the use of sensors to activate lighting and timers to switch off lighting
- Use the lowest intensity required for the job
- Use energy efficient bulbs and warm colours
- Direct light downwards to eliminate
- Ensure lights are not directed at reflective surfaces
- Use non-reflective dark coloured surfaces to reduced reflection of lighting
- Keep lights close to the ground and/or directed downwards
- Use light shield fittings to avoid light spill (refer Figure 6-42).



Figure 6-42 Light shielding (DCCEEW, 2020)

6.6.4. Draft landscape plan

A draft landscape plan has been developed by Moir Studio, to outline how the proposed vegetation screen would be established and maintained. It incorporates native vegetation local to the area. The draft landscape plan can be seen below in Figure 6-43 and Figure 6-44. A more detailed Landscaping Plan would be prepared post-approval, prior to landscaping works.

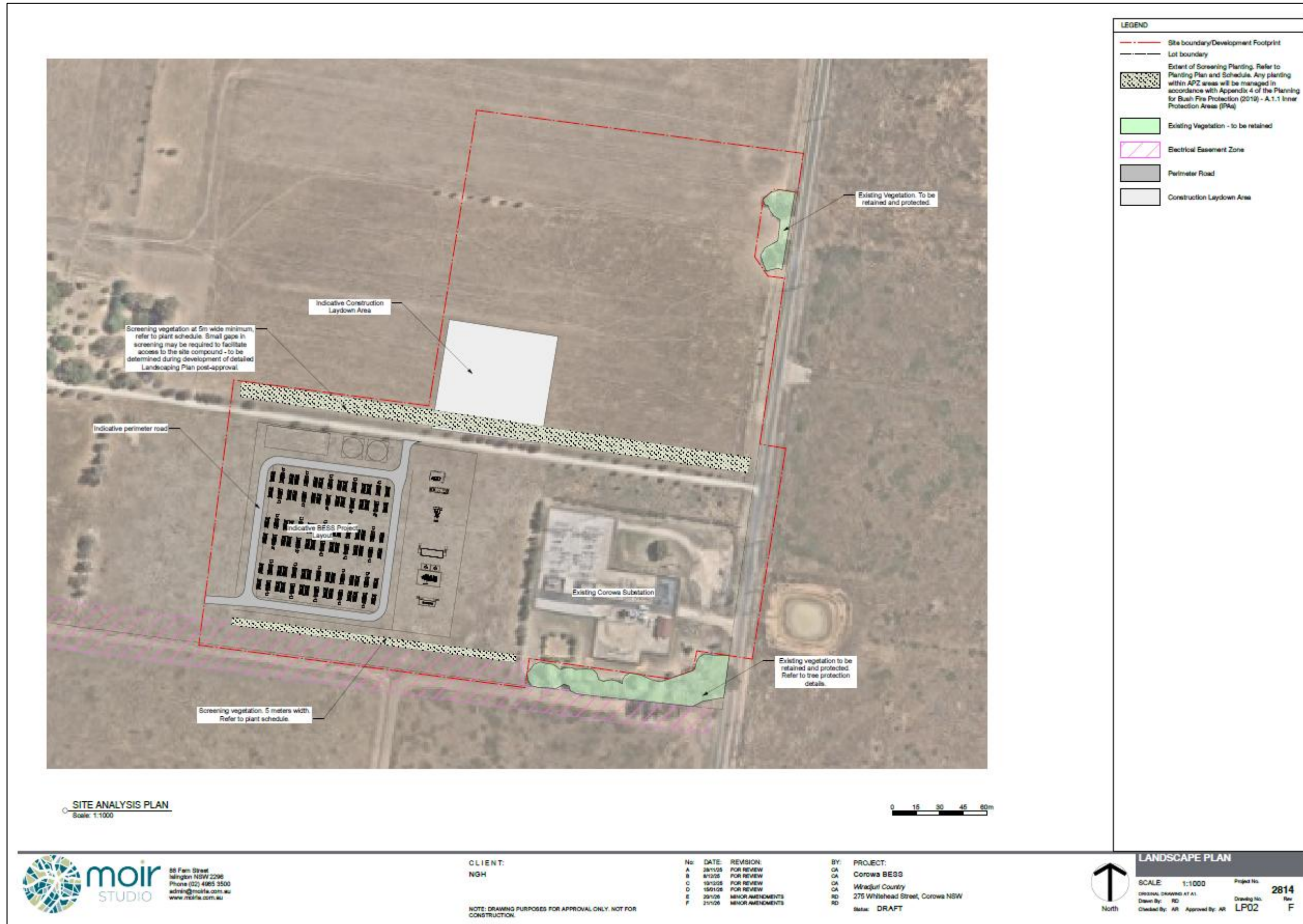


Figure 6-43 Draft landscape plan (Moir Studio, 2025)

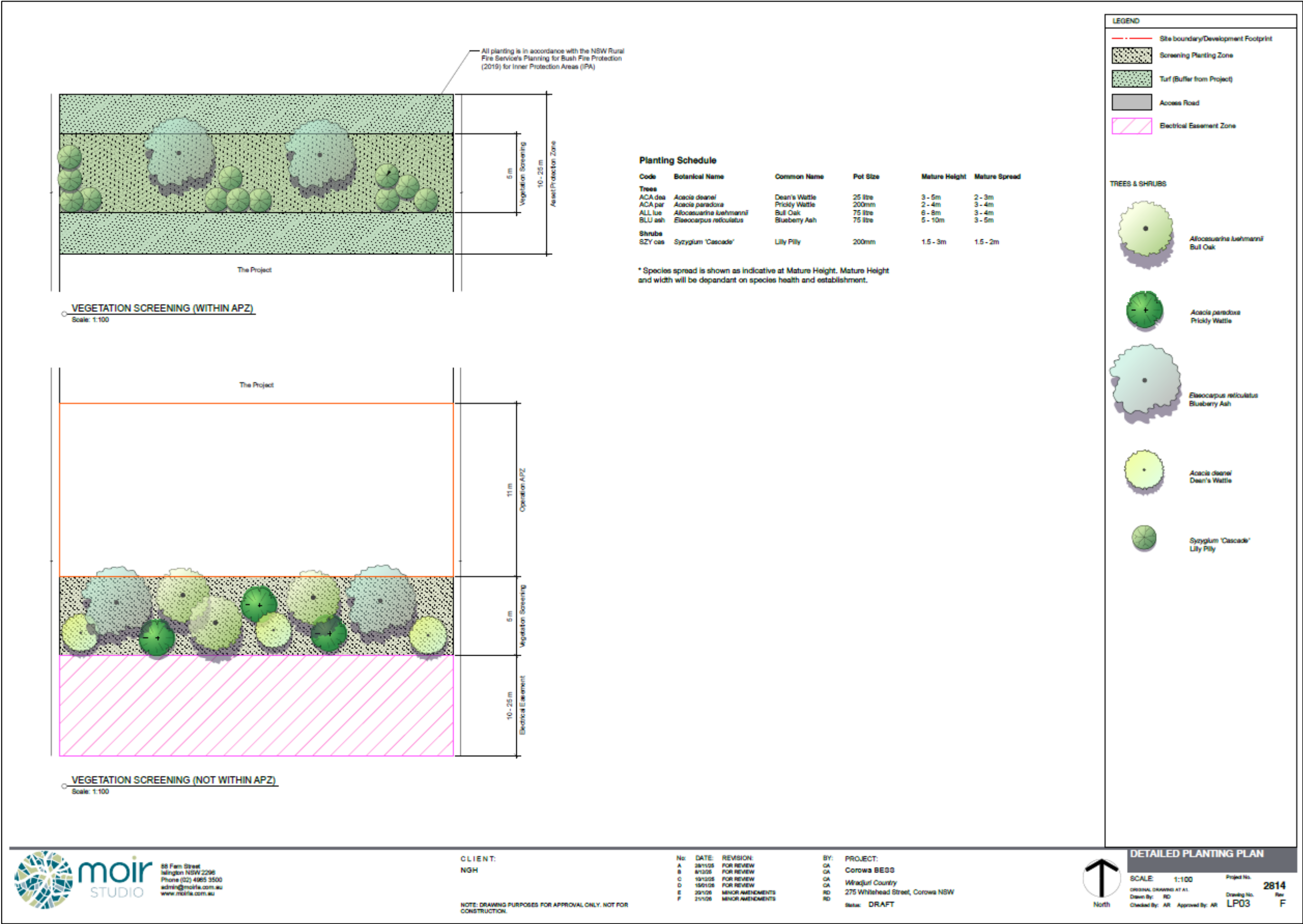


Figure 6-44 Planting matrix (Moir Studio, 2025)

6.6.5. Uncertainty

A key uncertainty is the ability of proposed vegetation screening to grow and in time effectively soften views of infrastructure and the whether the existing screening will be retained in the long term to continue to provide screening. It is noted that screening is not required to achieve a low visual impact at any existing receiver, dwelling entitlement or public view point assessed. The mitigation measures adopted below aim to maximise the success of onsite plantings and minimise the contrast of infrastructure with the landscape, through design considerations.

6.6.6. Mitigation measures

While no specific mitigation measures are required to achieve a low visual impact rating, the Applicant would establish additional vegetation screening along the northern and 'southern boundaries of the Project (refer to Figure 6-43). Safeguards and mitigation measures to address visual amenity impacts are detailed in Table 6-27 below.

Table 6-27 Safeguards and mitigation measures to manage Aboriginal cultural heritage

ID	Mitigation measures	Project phase
VA1	Building design - Consider use of materials that integrate with the surrounding landscape Where practicable use suitable colours and finishes for project infrastructure to minimise visual impacts	Design
VA2	Dark Sky Planning guidelines and national light Pollution Guidelines for Wildlife will be considered during detailed design. Cut off and direct light fittings (or similar technologies would be used where appropriate to minimise glare and light spill onto private property.	Design
VA3	- Landscaping will be installed along the north and south of the BESS facility in accordance with the draft landscape plan. The final location and extent of landscaping will be determined during detailed design and development of a detailed Landscaping Plan post-approval. These would consider the key principals: - Planting should remain in keeping with existing landscape character - Species selection is to be typical of the area - Planting layout should avoid screening views of the broader landscape - Avoid the clearing of existing vegetation where possible. Where appropriate reinstate any lost vegetation. - Allow native vegetation to regrow over any areas of disturbance	Design

6.7. Noise

6.7.1. Approach

Renzo Tonin & Associates were engaged to conduct a Construction and Operational Noise Assessment for the Project. The assessment addresses noise and vibration impacts arising from the construction and operational phases of the Project, in accordance with the SEARs (provided in full in Appendix A) and relevant EPA requirements and guidelines including:

- NSW 'Interim Construction Noise Guideline' (ICNG – DECC, 2009)
- NSW 'Noise Policy for Industry' (NPfI – EPA, 2017)
- Assessing Vibration: A Technical Guideline (DECC, 2006)
- NSW 'Road Noise Policy' (RNP – DECCW, 2011).

This chapter provides a summary of the approach, results and recommendations of the specialist assessment. A copy of the full assessment report is attached in Appendix E8.

Important assumptions underpinning the assessment include the proposed hours of work, the physical extent of the areas where works will take place (the Development Footprint), the equipment proposed to be used and the proximity to nearby receivers. In this assessment, *all* receivers (including the Project-associated R4 and the dwelling entitlements where homes have not yet been constructed, N1 – N7) are assessed.

Long-term background noise monitoring was undertaken by GHD at 275 Whitehead Street, Corowa, between 28/11/2024 and 11/12/2024, to establish the Rating Background Levels (RBLs)²². The background noise levels are used to derive construction and operational Project noise trigger levels. Mitigation is considered where the predicted noise from the Project would exceed these trigger levels.

Construction noise assessment approach

The ICNG provides two methods for assessment of construction noise, being either a quantitative or a qualitative assessment. A quantitative assessment is recommended for major construction projects of significant duration, and involves the measurement and prediction of noise levels, and assessment against set criteria. A qualitative assessment is recommended for small projects with duration of less than three weeks and focuses on minimising noise disturbance through the implementation of reasonable and feasible work practices, and community notification.

The construction works for the project include:

- Access road upgrade at Whitehead Street
- Road intersection upgrade at Honour Avenue and Bullecourt Road
- BESS construction

²² An RBL is a single, overall figure that represents the background noise for a specific period (day, evening or night) over a monitoring period. It is determined using a statistical method that involves measuring the ambient background noise over several days and finding the median value of the tenth percentile of these measurements for each assessment period. The RBL is used to determine appropriate noise limits for developments, often by adding a specific decibel value to the RBL to set a Noise Management Level (NML).

The access road upgrade and the road intersection upgrade construction works are both expected to be completed within three weeks. Therefore, consistent with the ICNG requirements, a qualitative assessment was carried out for these construction works.

Given the length of the construction works for the BESS is approximately 18 months, a quantitative assessment was carried out, consistent with the ICNG requirements. Noise emissions were predicted by modelling noise sources (typical construction equipment and their sound power levels), receiver locations, topographical features of the surrounding environment, and possible noise control treatments. The noise modelling programme calculates the contribution of each noise source at each specified receptor point and allows for the prediction of total noise from a site.

The modelling exercise takes into account the effect of factors such as:

- The height difference between noise sources and receivers
- Separation distances between sources and receivers
- Ground type between sources and receivers
- Attenuation from barriers (natural and purpose-built).

Operational noise assessment approach

Noise impacts arising from the operation of the Project have been assessed against the Noise Policy for Industry (NPfI). The assessment procedure comprises two parts:

1. Controlling intrusive noise impacts in the short-term for residences; and
2. Maintaining noise level amenity for residences and other land uses.

In accordance with the NPfI, noise impacts should be assessed against the Project noise trigger level²³, which is the lower value of the project intrusiveness noise level and project amenity noise level.

Additional noise assessments; sleep disturbance, road noise, cumulative impacts

To assess the likelihood of sleep disturbance, the potential of maximum noise levels from the BESS during the night-time period has been considered. In accordance with the NPfI, a detailed maximum noise level event assessment should be undertaken where the subject development night-time noise levels at a residential location exceed:

- LAeq,15min 40 dB(A) or the prevailing RBL plus 5dB, whichever is the greater, and/or
- LAFmax 52 dB(A) or the prevailing RBL plus 15dB, whichever is the greater.

The NSW 'Road Noise Policy' (RNP) sets out criteria to be applied to types of road and land uses. These noise criteria are to be applied when assessing noise impact and determining mitigation measures for sensitive receivers that are potentially affected by road traffic noise associated with the construction of the project, with the aim of preserving the amenity appropriate to the land use.

²³ A project noise trigger level is the maximum acceptable noise level for a specific project and is determined by the more stringent of two values: the project **intrusiveness noise level** and the project **amenity noise level**. The intrusiveness level protects against a sudden, significant change in noise, while the amenity level protects against cumulative noise impacts and maintains the character of an area. This level ensures a project does not unacceptably increase noise, balancing the need to limit intrusive noise and protect the environment.

To consider cumulative noise impacts, other noise generating developments in the area were considered, including the existing Essential Energy 132 / 22 kilovolt (kV) Corowa substation immediately to the east and the Corowa industrial area located over 1 km to the west.

6.7.2. Existing environment

A total of 21 receivers, comprising 14 existing and seven potential future receivers were identified within 2km of the Project Site (Table 6-28 and Figure 6-45).

Table 6-28 Identified noise received locations

ID	Address	Description
R01	91 Almond Lane, Corowa	Residential property, 870m east of Project Site
R02	226 Whitehead Street, Corowa	Residential property, 420m south of Project Site
R03	136 Bullecourt Road, Corowa	Residential property, 510m south of Project Site
R04	275 Whitehead Street, Corowa	Residential property, 140m west of Project Site
R05	309 Whitehead Street, Corowa	Residential property, 430 north-west of Project Site
R06	345 Whitehead Street, Corowa	Residential property, 610m north of Project Site
R07	373 Whitehead Street, Corowa	Residential property, 870m north of Project Site
R08	361 Whitehead Street, Corowa	Residential property, 990m north of the Project Site
R09	214 Whitehead Street, Corowa	Residential property, 530m south-east of the Project Site
R10	136 Bullecourt Road, Corowa	Residential property, 1,050m south-west of the Project Site
R11	Lot 4 DP253483	Residential property, 1,230m west of the Project Site
R12	Lot 319 DP753734	Residential property, 1,870m west of the Project Site
R13	Lot 68 DP753734	Residential property, 1,530m north of the Project Site
R14	373 Whitehead Street, Corowa	Residential property, 1,070m south-east of the Project Site
N01	240 Whitehead Street, Corowa	Future residential property, 310m south-east of Project Site
N02	248 Whitehead Street, Corowa	Future residential property, 250m south-east of Project Site
N03	262 Whitehead Street, Corowa	Future residential property, 220m east of Project Site
N04	276 Whitehead Street, Corowa	Future residential property, 220m east of Project Site
N05	286 Whitehead Street, Corowa	Future residential property, 220m north-east of Project Site
N06	296 Whitehead Street, Corowa	Future residential property, 280m north-east of Project Site
N07	306 Whitehead Street, Corowa	Future residential property, 380m north-east of Project Site

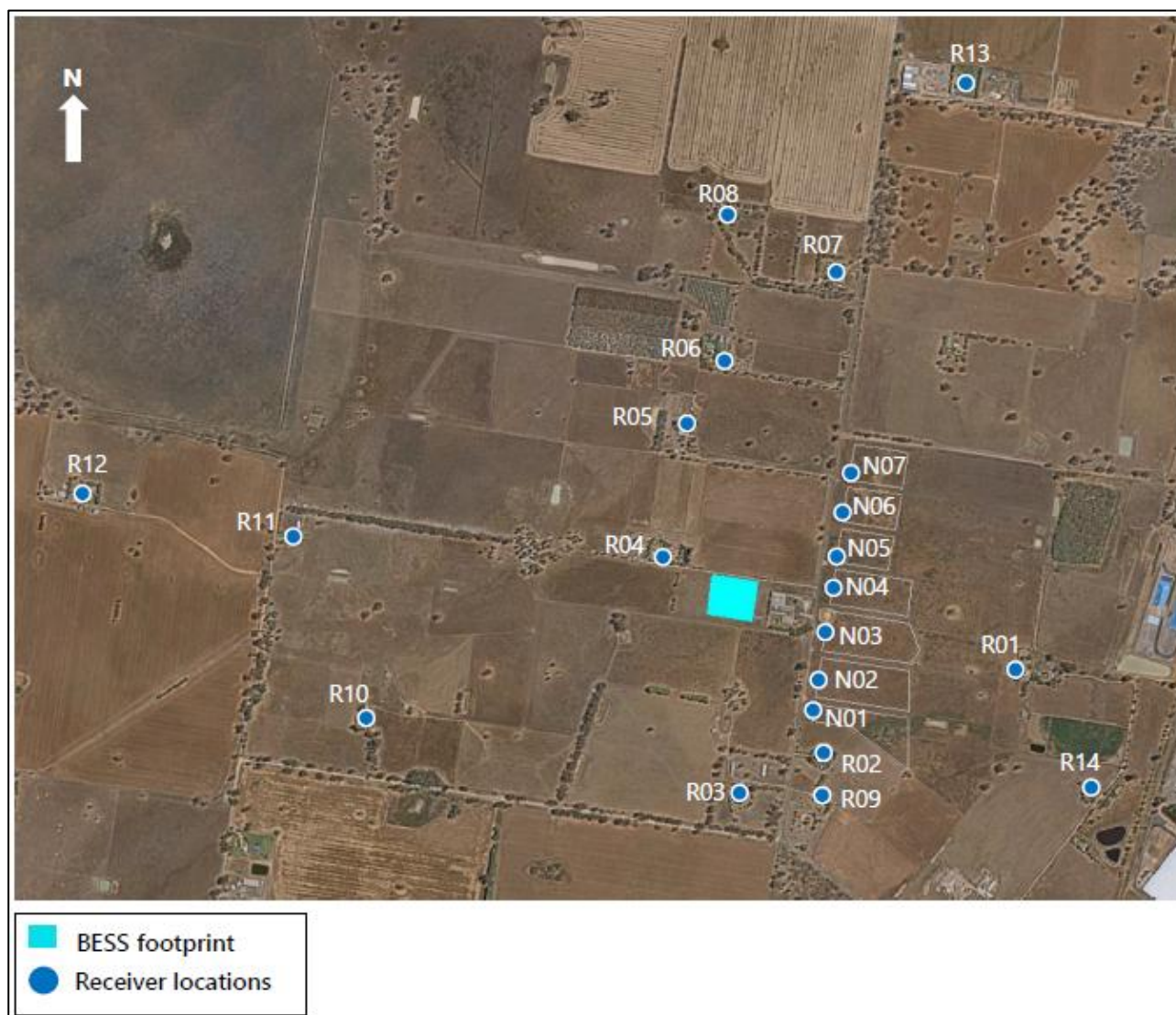


Figure 6-45 Project Site and receiver locations

Existing noise environment

Background noise monitoring established Rating Background Levels (RBLs) from which the construction and operational Project noise trigger levels have been derived. The background noise ranges from 32-35 decibels, depending on the time of day the activity is undertaken.

6.7.3. Potential impacts

Construction noise assessment results

Table 6-30 presents the construction noise management levels established for the nearest noise sensitive residential receivers based upon the applicable RBLs, the proposed construction hours and the ICNG requirements. Given that construction works are to occur during the daytime period, as presented in Section 2.4.1, only the daytime period will be assessed.

Table 6-29 Construction noise management levels at residential receivers, dB(A)

Time of day	Applicable Rating Background Levels dB(A)
Day (7:00am to 6:00pm)	35
Evening (6:00pm to 10:00pm)	32
Night (10:00pm to 7:00am)	32

Table 6-30 Construction noise management levels at residential receivers, dB(A)

Location	Day L_{A90} Background Noise Level (RBL)	Day Noise Management Level $L_{Aeq}(15min)$
All residential receivers	35	45

The typical plant and equipment likely to be used by the contractor to carry out the necessary construction works for the BESS project are listed in Table 6-31, along with their individual sound power levels.

Table 6-31 Typical construction equipment & sound power levels

Plant item	Plant Description	L_{Aeq} Sound Power Levels (single item)
1	Crane	110
2	Drum roller	109
3	Padfoot roller	109
4	Wheeled loader	109
5	Dump truck	108
6	30t Excavator	107
7	Grader	107
8	Chain trencher	104
9	Water truck	104
10	Telehandler	98
11	Forklift	90

The results of the modelling indicate that the predicted construction noise levels from the construction of the BESS *generally comply* with the construction Noise Management Level (NML)²⁴ at all receivers.

- However, the construction NML would be exceeded when construction works are conducted at the closest proximity to receivers R02, R03 and R05 when the three noisiest plant items are operating concurrently. This scenario would not, however, typically occur on site.
- The construction NML would be exceeded at receivers R04, and N01 – N07:

²⁴ A Noise Management Level (NML) is a set of criteria used to assess the impact of construction noise on a community. It is calculated by adding a specific number of decibels to the existing background noise level, with different levels for day and night work. A higher NML, or the level at which a project is deemed to be “highly noise affected” is set at 75dB(A).

- Receiver R4 is an involved / associated landowner²⁵, hence construction phase exceedances can be managed at this location.
- Receivers N01 – N07 are potential future receivers. It is not known at this time whether these receivers would be constructed and occupied during the construction phase of the BESS.
- Construction noise levels at all receivers during the construction of the BESS and the access road are predicted to be below the 'highly noise affected' level of 75dB(A).

For construction works conducted within close proximity to the dwellings / buildings of receivers R02 – R05 and N01 – N07, potential noise exceedances could be managed by:

- Implementing time restrictions and / or
- Providing periods of repose for residents, where feasible and reasonable.

Allowing the construction activities to proceed expeditiously, despite the noise exceedance, may be the preferred method to complete the works as quickly as possible. Residents would be consulted to determine appropriate respite periods and would be notified of the potential noise impact during this time so that they could organise their day around the noisy period.

In addition, the following noise management measures would apply to the access road upgrade at Whitehead Street and the road intersection upgrade at Honour Avenue and Bullecourt Road:

- Plant and equipment should be properly maintained.
- Avoid any unnecessary noise when carrying out manual operations and when operating plant.
- Any equipment not in use for extended periods during construction work should be switched off.
- Good relations with people living and working in the vicinity of a construction site should be established at the beginning of the Project and be maintained throughout the Project, as this is of paramount importance. Keeping people informed of progress and taking complaints seriously and dealing with them expeditiously is critical. The person selected to liaise with the community should be adequately trained and experienced in such matters.
- A management procedure be put in place to deal with noise complaints that may arise from the construction works. Each complaint would need to be investigated, and appropriate noise amelioration measures be put in place to mitigate future occurrences, where the noise in question is in excess of allowable limits.

Noise management commitments, as recommended by the noise assessment, are included in Table 6-39.

²⁵ Also known as an Associated Receiver, these are receivers, usually dwellings, on privately-owned land where the owner has reached an agreement with the Applicant in relation to the development and the management of impacts. They are considered 'Project Associated' and are not required to be assessed for impacts covered by the agreement.

Table 6-32 Predicted LAeq,15min Construction Noise Levels, dB(A) – constructed dwellings

Plant item	Plant description	Predicted Leq 15 min construction noise levels													
		R01	R02	R03	R04 (associated receiver)	R05	R06	R07	R08	R09	R10	R11	R12	R13	R14
Noise Management Level		45	45	45	45	45	45	45	45	45	45	45	45	45	45
1	Crane	33 – 39	40 – 44	39 – 43	46 – 52	38 – 43	35 – 40	32 – 36	31 – 35	38 – 41	33 – 36	29 – 30	27 – 31	23 – 30	32 – 37
2	Drum roller	32 – 38	39 – 43	38 - 42	45 – 51	37 – 42	34 – 39	31 - 35	30 – 34	37 – 40	32 – 35	28 – 29	26 – 30	25 – 29	31 – 36
3	Padfoot roller	32 – 38	39 – 43	38 – 42	45 – 51	37 – 42	34 – 39	31 – 35	30 – 34	37 – 40	32 – 35	28 – 29	26 – 30	25 – 29	31 – 36
4	Wheeled loader	32 – 38	39 – 43	38 – 42	45 – 51	37 – 42	34 – 39	31 – 35	30 – 34	37 – 40	32 – 35	28 – 29	26 – 30	25 – 29	31 – 36
5	Dump truck	31 – 37	38 – 42	37 – 41	44 – 50	36 – 41	33 – 38	30 – 34	29 – 33	36 – 39	31 – 34	27 – 28	25 – 29	24 – 28	30 – 35
6	30t Excavator	30 – 36	37 – 41	36 – 40	43 – 49	35 – 40	32 – 37	39 – 33	28 – 32	35 – 38	30 – 33	26 – 27	24 – 28	23 – 27	29 – 34
7	Grader	30 - 36	37 – 41	36 – 40	43 – 49	35 – 40	32 – 37	29 – 33	28 – 32	35 - 38	30 – 33	26 - 27	24 – 28	23 – 27	39 – 34
8	Chain trencher	27 – 33	34 – 38	33 – 37	40 – 46	32 – 37	29 – 34	26 – 30	25 – 29	32 – 35	27 – 30	23 – 24	21 – 25	20 – 24	26 – 31
9	Water truck	27 – 33	34 – 38	33 - 37	40 – 46	32 – 37	29 – 34	26 – 30	25 – 29	32 – 35	27 – 30	23 – 24	21 – 25	20 – 24	36 – 31
10	Telehandler	21 – 27	28 – 32	29 – 31	34 – 40	26 – 31	23 – 28	20 – 34	<20	26 – 39	21 – 24	<20	<20	<20	20 – 25
11	Forklift	<20	20 – 24	<20 - 23	26 – 32	<20 – 23	<20 – 20	<20	<20	<20-21	<20	<20	<20	<20	<20
Up to 3 (noisiest_ plant operating concurrently)		37 - 43	44 - 48	43 - 47	50 - 57	42 - 47	39 - 44	36 - 40	35 – 39	42 - 45	37 - 40	33 - 34	31 - 35	30 - 34	36 - 41

Table 6-33 Predicted LAeq,15min Construction Noise Levels, dB(A) – dwelling entitlements

Plant item	Plant description	Predicted Leq 15 min construction noise levels						
		N01	N02	N03	N04	N05	N06	N07
Noise Management Level		45	45	45	45	45	45	45
1	Crane	45 – 50	46 – 52	47 - 53	47 – 53	47 – 51	45 – 49	43 – 47
2	Drum roller	44 – 49	45 – 51	46 – 52	46 – 52	46 – 50	44 – 48	42 – 46
3	Padfoot roller	44 – 49	45 – 51	46 – 52	46 – 52	46 – 50	44 – 48	42 – 46
4	Wheeled loader	44 - 49	45 – 51	46 – 52	46 – 52	46 – 50	44 – 48	42 – 46
5	Dump truck	43 – 48	44 – 50	45 – 51	45 – 51	45 – 49	43 – 47	41 – 45
6	30t Excavator	42 – 47	43 – 49	44 – 50	44 – 50	44 – 48	42 – 46	40 – 44
7	Grader	42 – 47	43 – 49	44 – 50	44 – 50	44 – 48	42 – 46	40 – 44
8	Chain trencher	39 – 44	40 – 49	41 – 47	41 – 47	41 – 45	39 – 43	34 – 41
9	Water truck	39 – 44	40 – 46	41 – 47	41 – 47	41 – 45	39 – 43	37 – 41

Plant item	Plant description	Predicted Leq 15 min construction noise levels						
		N01	N02	N03	N04	N05	N06	N07
10	Telehandler	33 - 38	34 – 40	35 – 41	35 – 41	35 – 39	33 – 37	31 – 35
11	Forklift	25 – 30	26 – 32	27 – 33	27 – 33	27 – 31	25 – 29	23 – 27
Up to 3 (noisiest_ plant operating concurrently		49 - 54	50 - 56	51 - 57	51 - 55	51 - 55	49 - 53	47 - 51

6.7.4. Operational noise assessment results

The Project noise trigger levels (being the lower / more stringent values for project intrusiveness noise level and project amenity noise level) have been determined and are summarised in Table 6-34, ranging from 37 - 40, depending on the time the activity is undertaken.

Table 6-34 Project noise trigger levels, dB(A)

Receiver	LAeq, 15 min Project Noise Trigger Levels		
	Day	Evening	Night
All residential receivers	40	37	37

Table 6-35 lists the plant and equipment likely to be used for the operation of the Project, and their corresponding sound power levels.

Table 6-35 Operational plant and equipment and sound power levels

Plant item	Plant description	LAeq Sound Power Levels, dB(A)
1	MVPS (30 in total)	85 (each)*
2	BESS containers (60 in total)	79 (each)*
3	HV transformer (1 in total) (132/33kV 100MW)	86 (each)**

* Based on sound power level data provided by the client or manufacturer

** Based on sound power level data from past projects and / or RT's database

In accordance with the NPfl, where the character of the noise is assessed as being particularly annoying (inherently tonal, impulsive or intermittent), then an adjustment of 5dB(A) is added to the predicted value. The noise from transformers is tonal in nature and therefore a 5 dB(A) penalty has been applied to the predicted noise contribution of these items.

Noise emissions were predicted by modelling the noise sources, receiver locations, topographical features of the intervening area and possible noise control treatments. Standard noise-enhancing meteorological conditions²⁶ were applied. The noise modelling programme calculates the contribution of each noise source at each specified receptor point and allows for the prediction of total noise from a site.

The operational noise levels would exceed the Project noise trigger levels for receivers R04, N02, N03, N04, and N05 in the evening and night periods during all noise enhancing meteorological conditions, as shown in Table 6-38.

For this reason, a 3.5m high solid noise barrier has been recommended and is now proposed as part of the Project (and has been assessed in other chapters, for bushfire and visual impacts in particular). The location

²⁶ Standard meteorological conditions: – 0.5 m/s wind velocity at 10 m from ground level between each noise source and each noise sensitive receiver. Wind direction was based on wind travelling from the source to the receiver.

Slight to gentle breeze: 3 m/s wind velocity at 10 m from ground level between each noise source and each noise sensitive receiver (as per NPfl default wind conditions). Wind direction was based on wind travelling from the source to the receiver

Moderate temperature inversion: applicable for noise predictions during nighttime periods only. F-class temperature inversion with 2 m/s wind velocity at 10 m from ground level between each noise source and each noise sensitive receiver

of the noise wall would be as shown in Figure 6-46. The height of the barrier is referenced to the existing (natural) ground level directly under the barrier.

The construction of the barrier would be from a durable material with sufficient mass to prevent direct noise transmission e.g. masonry, steel, fibrous-cement, timber, acrylic or polycarbonate, selected to withstand the weather elements. For example, a double-skinned profiled sheet steel construction with a cavity (minimum 50mm) between the sheets and each sheet having 0.6 mm minimum base metal thickness (e.g. 'Colorbond' or similar) is adequate for use as a noise screen. Where acrylic or polycarbonate sheets are to be used to form part of a noise barrier, the thickness of the sheets should be a minimum 12mm thick.

The noise barrier would give regard to the following to maintain acoustic integrity:

- Any penetrations through the fabric of the barrier should be sealed air tight
- All joints and gaps between barrier / planks / sheets should be sealed air tight
- Any gaps between the barrier and the ground should be filled to ensure that the barrier provides appropriate noise attenuation.

Modelling results indicate that the worst-case operational noise levels comply with the project noise trigger levels for all receivers when the 3.5m high noise barrier is implemented. Therefore, no other operational mitigation measures are required to manage operational noise impacts.



Figure 6-46 Proposed noise wall location to achieve noise compliance for all receivers in operation

Table 6-36 Predicted LAeq,15min operational noise levels at sensitive receiver locations, dB(A) – no noise wall

Receiver location	Project noise trigger levels			Predicted operational noise levels			Comply? (yes / no)
	Day	Evening	Night	Standard conditions	Slight to gentle breeze	Moderate temperature inversion	
R01	40	37	37	22	23	23	Yes
R02	40	37	37	29	30	30	Yes
R03	40	37	37	27	28	28	Yes
R04 (associated receiver)	40	37	37	39	40	40	No
R05	40	37	37	27	28	28	Yes
R06	40	37	37	25	25	25	Yes
R07	40	37	37	20	20	20	Yes
R08	40	37	37	<20	<20	<20	Yes
R09	40	37	37	25	26	36	Yes
R10	40	37	37	<20	<20	<20	Yes
R11	40	37	37	<20	<20	<20	Yes
R12	40	37	37	<20	<20	<20	Yes
R13	40	37	37	<20	<20	<20	Yes
R14	40	37	37	<20	<20	<20	Yes
N01	40	37	37	35	35	35	Yes
N02	40	37	37	38	38	38	No
N03	40	37	37	40	40	40	No
N04	40	37	37	40	40	40	No
N05	40	37	37	38	38	38	No
N06	40	37	37	34	34	34	Yes
N07	40	37	37	31	31	31	Yes

Table 6-37 Predicted LAeq,15min operational noise levels at sensitive receiver locations, dB(A) – with 3.5m noise wall

Receiver location	Project noise trigger levels			Predicted operational noise levels			Comply? (yes / no)
	Day	Evening	Night	Calm & isothermal conditions	Slight to gentle breeze	Moderate temperature inversion	
R01	40	37	37	20	21	21	Yes
R02	40	37	37	27	28	28	Yes
R03	40	37	37	25	26	26	Yes
R04	40	37	37	36	37	37	Yes
R05	40	37	37	26	27	27	Yes
R06	40	37	37	22	23	23	Yes
R07	40	37	37	<20	<20	<20	Yes
R08	40	37	37	<20	<20	<20	Yes
R09	40	37	37	25	26	26	Yes
R10	40	37	37	<20	<20	<20	Yes
R11	40	37	37	<20	<20	<20	Yes
R12	40	37	37	<20	<20	<20	Yes
R13	40	37	37	<20	<20	<20	Yes
R14	40	37	37	<20	<20	<20	Yes
N01	40	37	37	31	32	32	Yes
N02	40	37	37	33	34	34	Yes
N03	40	37	37	35	36	36	Yes
N04	40	37	37	35	36	36	Yes
N05	40	37	37	34	35	35	Yes
N06	40	37	37	31	32	32	Yes
N07	40	37	37	29	29	29	Yes

6.7.5. Additional noise assessments

Sleep disturbance assessment

To assess the likelihood of sleep disturbance, the potential of maximum noise level events from the operational Project during the night-time period, has been considered.

The results of the sleep disturbance assessment for residential receivers indicated that noise levels during the night-time period will be well below the nominated sleep disturbance criteria, and hence no sleep disturbance is expected to occur.

Road noise assessment

Noise impacts from the potential increase in traffic on the surrounding road network, due to construction and operational activities, has been assessed against the NSW Road Noise Policy (RNP).

Peak vehicle movements will occur during the construction phase and are presented in Table 6-38. Vehicle movements will only occur during the day-time period when construction works occur. During the operational phase, vehicle access to the site will be limited to maintenance vans or delivery trucks, on an irregular basis. Traffic noise impacts during the operational phase of the project would therefore be minimal and insignificant; no further assessment is considered warranted.

Table 6-38 Summary of estimated construction traffic volumes during peak construction

Vehicle type	Vehicle movements (two-way)	
	Daily	Peak hour
Heavy vehicle	48	12
Light vehicle	120	60
TOTAL	168	72

Road traffic noise level contributions from the vehicle movements associated with the construction works are within the applicable noise criteria based on dwellings being at the closest distance from the road.

Furthermore, as the predicted noise levels are at least 2 dB(A) less than the relevant traffic noise criterion, it is not expected that the traffic noise contribution from the construction vehicles would result in an exceedance of the traffic noise criterion and/or increase the existing traffic noise levels by more than 2 dB(A).

Therefore, traffic noise levels because of the construction works for the project would not adversely contribute to the existing traffic noise levels at the most affected residences along the surrounding roads.

6.7.6. Uncertainty

The specialist assessment provides in-principle feasible and reasonable noise management measures for the reduction of noise impacts on sensitive receivers. Where actual construction activities / plant differ from those assessed, more detailed design of noise control measures may be required once specific items of plant and construction methods have been chosen and assessed on site.

In addition, the advice provided by the specialist is in respect of acoustic impacts only. Supplementary professional advice may need to be sought in respect of fire ratings, structural design, buildability, fitness for purpose and the like.

6.7.7. Mitigation measures

Construction noise was predicted to exceed the nominated noise management level at three non-associated receivers; one associated receiver and seven potential future receivers (dwelling entitlements) during the construction phase of the project. Measures are included below to limit the potential impact of noise generated by construction activities to acceptable levels at these locations.

Results indicate that the worst-case operational noise levels comply for all receivers with the implementation of 3.5 m high solid noise barriers, which is now proposed as part of the Project.

The operational noise from the BESS project would not contribute to the cumulative noise impact at any of the identified receivers.

Road traffic noise impacts due to additional traffic generated during the construction phase of the project on residential properties along the access route were found to comply with the relevant RNP criteria. Road traffic noise impacts from traffic associated with the operation of the project were negligible due to the minimal traffic movements.

Table 6-39 Safeguards and mitigation measures to manage noise impacts

ID	Mitigation measures	Project phase
N1	A noise management wall 3.5m high would be located as set out in noise assessment. Updated modelling may be required to demonstrate the final design complies at all receivers, in operation.	Design
N2	A construction noise management plan would be developed to reduce noise emissions and would include the following: • Plant and equipment should be properly maintained. • Avoid any unnecessary noise when carrying out manual operations and when operating plant. • Any equipment not in use for extended periods during construction work should be switched off. • Good relations with people living in the vicinity of the construction site should be established at the beginning of the Project and must be maintained throughout the Project. Keeping people informed of progress and taking complaints seriously and dealing with them expeditiously is critical. The person selected to liaise with the community should be adequately trained and experienced in such matters. • A management procedure would be put in place to deal with noise complaints that may arise from the construction works. Each complaint would need to be investigated, and appropriate noise amelioration measures be put in place to mitigate future occurrences, where the noise in question is more than allowable limits.	Construction

6.8. Hydrology and flooding

6.8.1. Approach

The assessment of impacts relating to flooding was undertaken in two parts:

1. A Desktop Flood Assessment was prepared to assess available flood-related information, identify potential flood risks and provide initial recommendations for Project planning and development. One publicly available flood study²⁷ has been completed for the broader Murray River system. This study incorporated the townships of Corowa, Howlong and Mulwala and included a flood model for the Murray River, as well as a local overland flow model for the Corowa Township. These models formed the basis for assessing flood risk at the Project Site.
2. A Hydrological Investigation was undertaken to provide input and support to the structural and civil design of the Project, by modelling the existing flood extent, depth, flood levels and velocity for the 10% annual exceedance probability (AEP)²⁸, 5% AEP, 1% AEP, the 1% AEP with climate change and the Probable Maximum Flood (PMF)²⁹ design events, in line with Australian Rainfall and Runoff (ARR) 2019 guidelines, for both pre- and post-development scenarios.

This was done in order to address the SEARs, specifically:

- *An assessment of the likely impacts of the development (including flooding and flood modelling) on surrounding watercourses (including their Strahler Stream Order), groundwater resources and surface water movements, and measures proposed to monitor, reduce and mitigate these impacts including water management*
- *Identification of any flood risk on site having regard to adopted flood studies, the potential effects of climate change and any relevant provisions of the NSW Flood Risk Management Manual;*
 - *Where the development could alter flood behaviour, affect flood risk to the existing community or expose its users to flood risk, provide a flood impact and risk assessment (FIRA) prepared in accordance with the Flood Impact and Risk Assessment – Flood Risk Management Guide LU01;*
 - *Detailed design solutions and operational procedures to mitigate flood risk where required.*

The Desktop Flood Assessment and the Hydrological Investigation Report, both compiled by Fyfe, are attached as Appendix E.9.

²⁷ Corowa, Howlong and Mulwala Flood Study – Final Report, WMA Water, 2015

²⁸ This means there is a 1% chance that an event, such as a flood or a certain rainfall amount, will be equalled or exceeded in any given year. Also known as the 1 in 100-year flood.

²⁹ The largest flood that could possibly occur in a region. It is calculated by combining a range of extreme conditions, such as probable maximum precipitation (PMP), to determine the maximum possible extent of a floodplain. PMF events are extremely rare but are used for designing critical infrastructure.

6.8.2. Existing environment

Murray River model

The flood study showed that the Project Site is not affected by the 1% AEP Murray River flood event (refer to Figure 6-47).

Under PMF conditions, the Murray River flood would extend across the full extent of the Project Site, to a depth of approximately 1m of floodwater (refer to Figure 6-48).

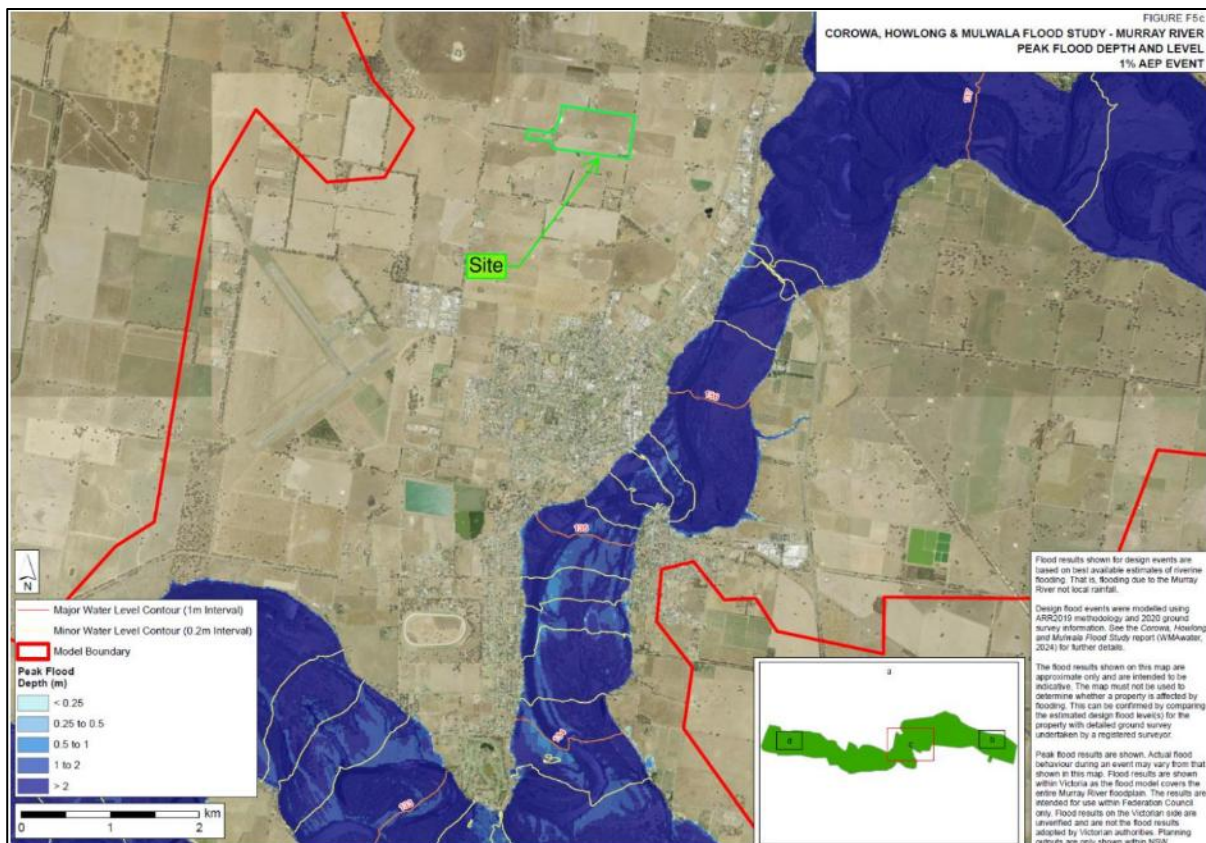


Figure 6-47 Location of the Project Site (indicated in green) relative to the 1% AEP Murray River flood extent

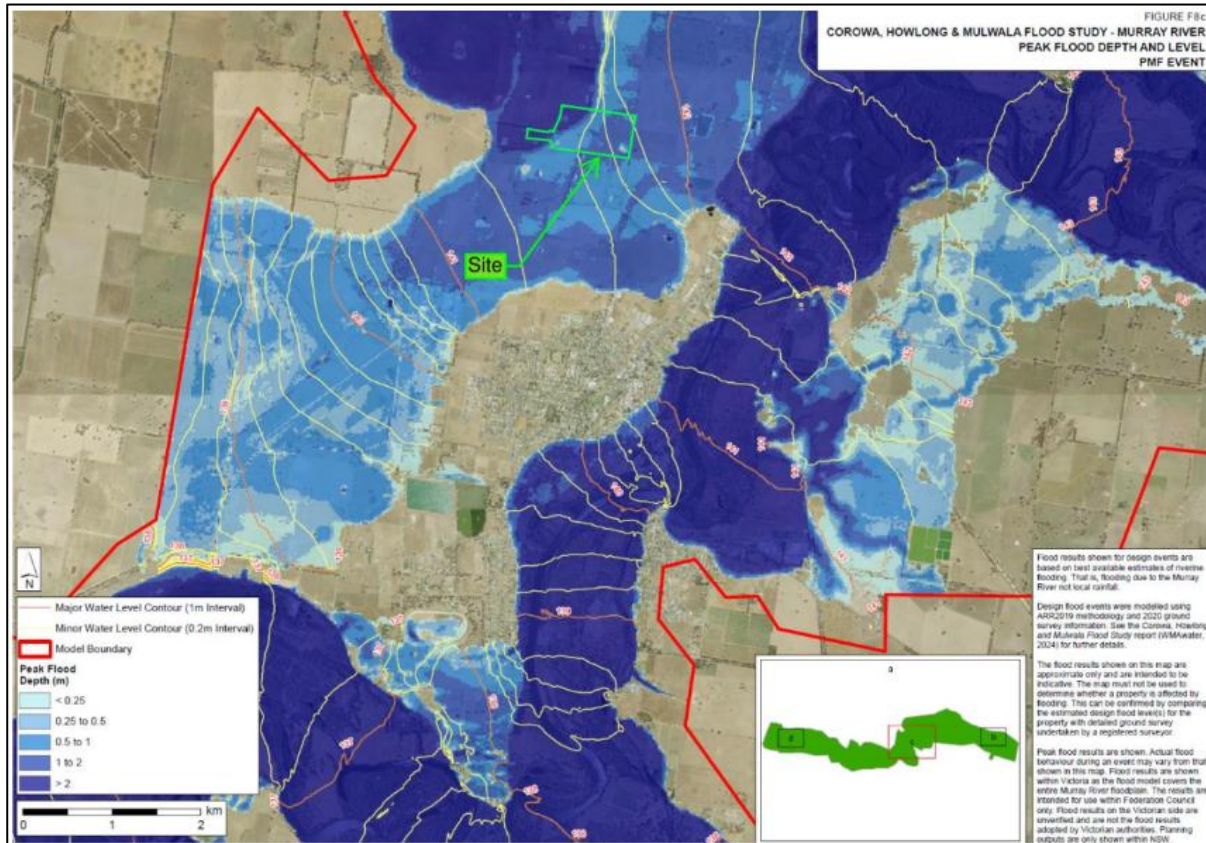


Figure 6-48 Location of the Project Site (indicated in green) relative to the Murray River PMF extent

Local overland flood model

As can be seen in Figure 6-49, portions of the Project Site are subject to local flooding as a result of overland flow from the external catchment areas to a depth of approximately 0.25m.

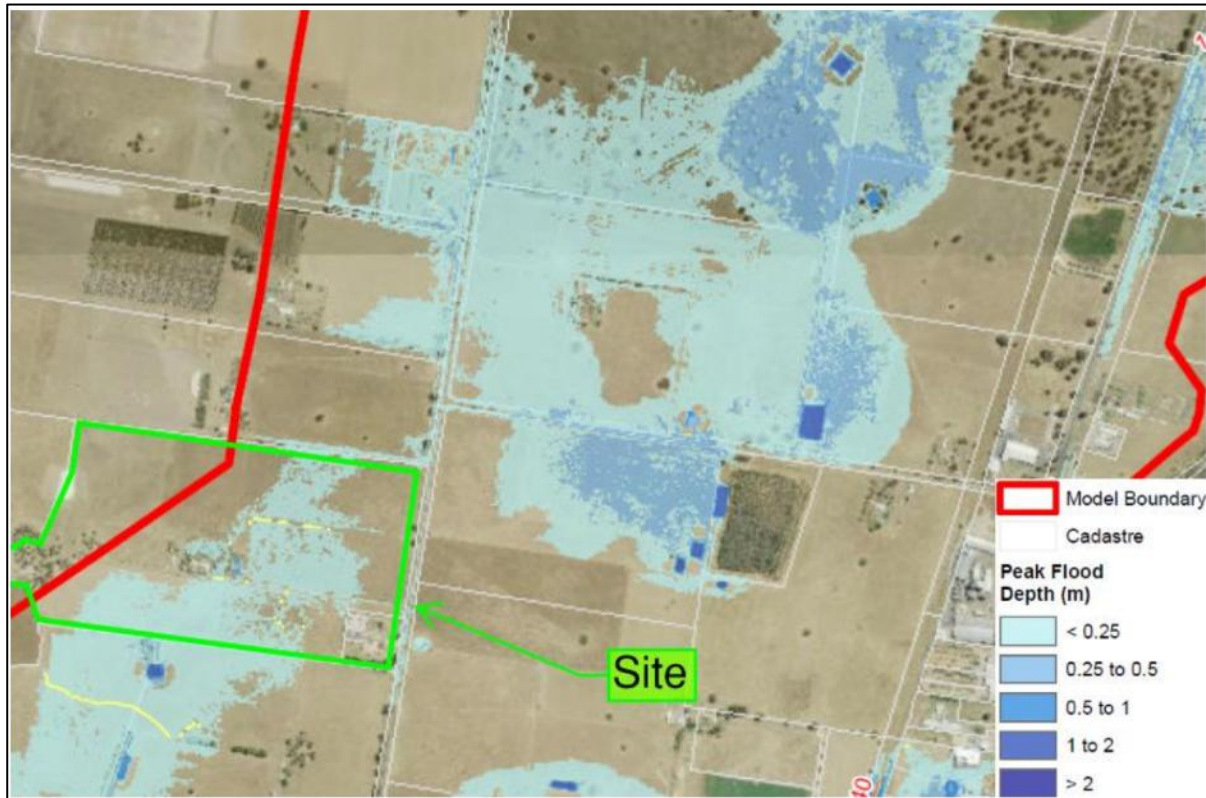


Figure 6-49 Impact of overland flows on the Project Site (indicated in green)

Hydraulic hazards area mapping

The hydraulic hazards map (Figure 6-50) indicates that, although the site is submerged during a 1% AEP flood event, it is generally safe for people, vehicles and buildings during the 1% AEP flood event.

Under PMF conditions, the floodwaters would extend across the full extent of the property with approximately 0.5m depth, however the flood velocity is generally lower than 0.25m/s.

As such, even under PMF conditions, the hydraulic hazard map (Figure 6-51) shows that the Project Site has relatively low risk, marked as category H2 – Unsafe for small vehicles.

The existing Corowa Substation, located east of the Project Site, is considered safe and free from flooding, even under PMF conditions (Figure 6-51) due to its elevated bench level.

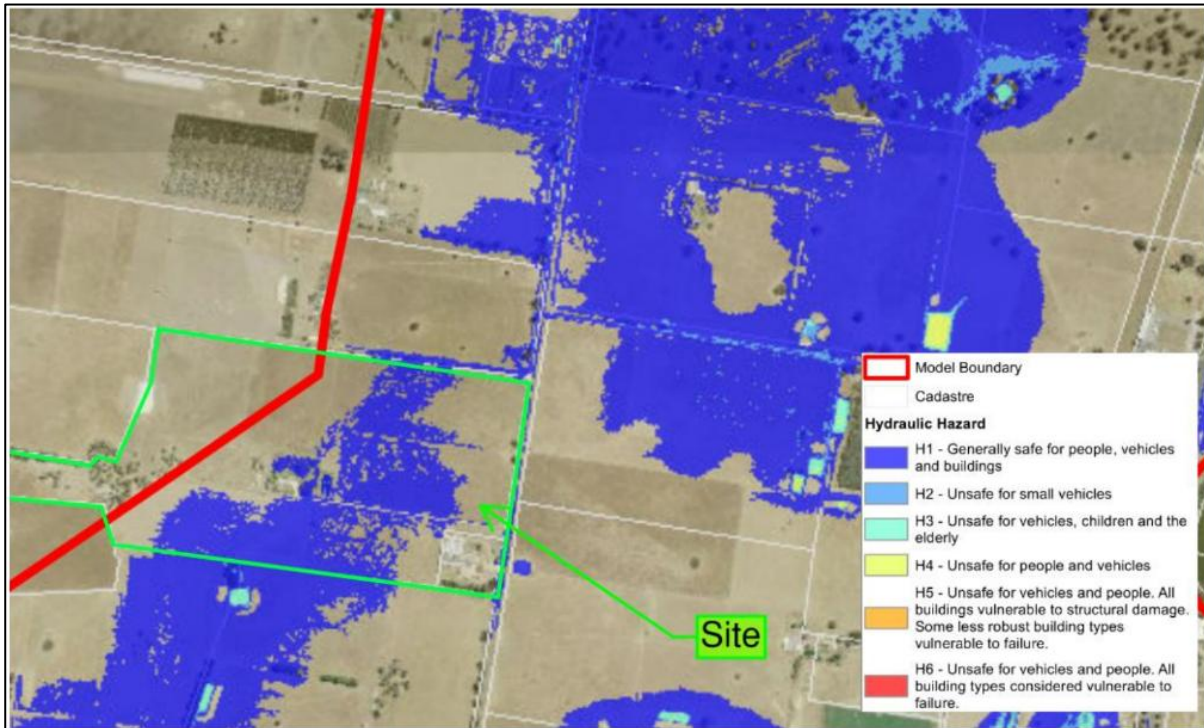


Figure 6-50 Hydraulic hazard map for the 1% AEP flood event

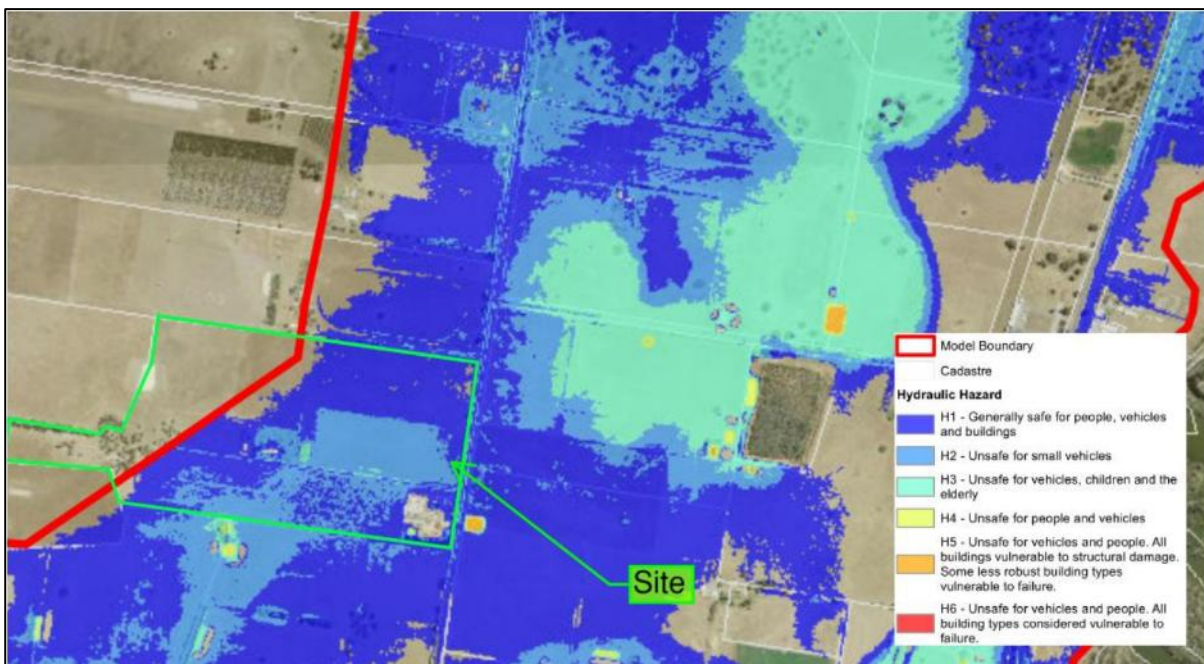


Figure 6-51 Hydraulic hazard map for the PMF event

Flood Modelling

Detailed hydraulic modelling was undertaken for the purpose of identifying flood risk on the Project Site, to determine if / how the Project could alter local flood behaviour, affect flood risk to surround land uses and provide design solutions to mitigate flood risks, where necessary. The methods employed and the results of the Hydrological Investigation are detailed in the sections to follow.

Methodology

The scope of the Hydrological Investigation included the following:

1. Generation of a large-scale pre-development model with a 10m grid size, covering the site and its estimated upstream catchment. Proposed storm events modelled were the 10% AEP, 5% AEP and 1% AEP storm events with durations of 1 hour, 2 hours 4.5 hours, 9 hours, 12 hours, 24 hours, 36 hours and 48 hours. The 1-metre resolution DEM for modelling was sourced from publicly available data on the ELVIS website for flood modelling. A median rainfall hyetograph was applied to the model with magnitude sourced from the ARR Datahub, to conservatively model flooding impacts on the new site.
2. Produce the flood map for the large-scale pre-development model, to identify the critical storm duration for all design AEPs and identify the contributing catchments to the site.
3. Generate a small-scale pre-development with 2-metre grid size as the pre-development model, covering the contributing catchments and the site.
4. Perform a sensitivity analysis on the soil loss parameters to reduce uncertainty of the model and ensure the model results reflect the reality.
5. Following pre-development model, the proposed Site layout, with suitable Finished Floor Level (FFL) for flood mitigation, was included into the model to model the post-development scenario. The flood model was run under these circumstances, with no additional flood mitigation strategies implemented, to identify the influence increasing site levels will have on the adjacent property owners. The need for any additional flood mitigation strategies was also reviewed at this stage.
6. The post-development model, was also run to include climate change in accordance with ARR2019 to identify the sites sensitivity to increased rainfall and flooding.

Findings

In summary, the findings of the Hydrological Investigation show that, under pre-development conditions, the Project Site is directly impacted by overland flooding in all design events. Flood depths are up to 200mm, however, flood velocities are very low in all scenarios, indicating that the flooding on the Project Site is due to local ponding rather than external flow (refer to Figure 6-52 to Figure 6-54).

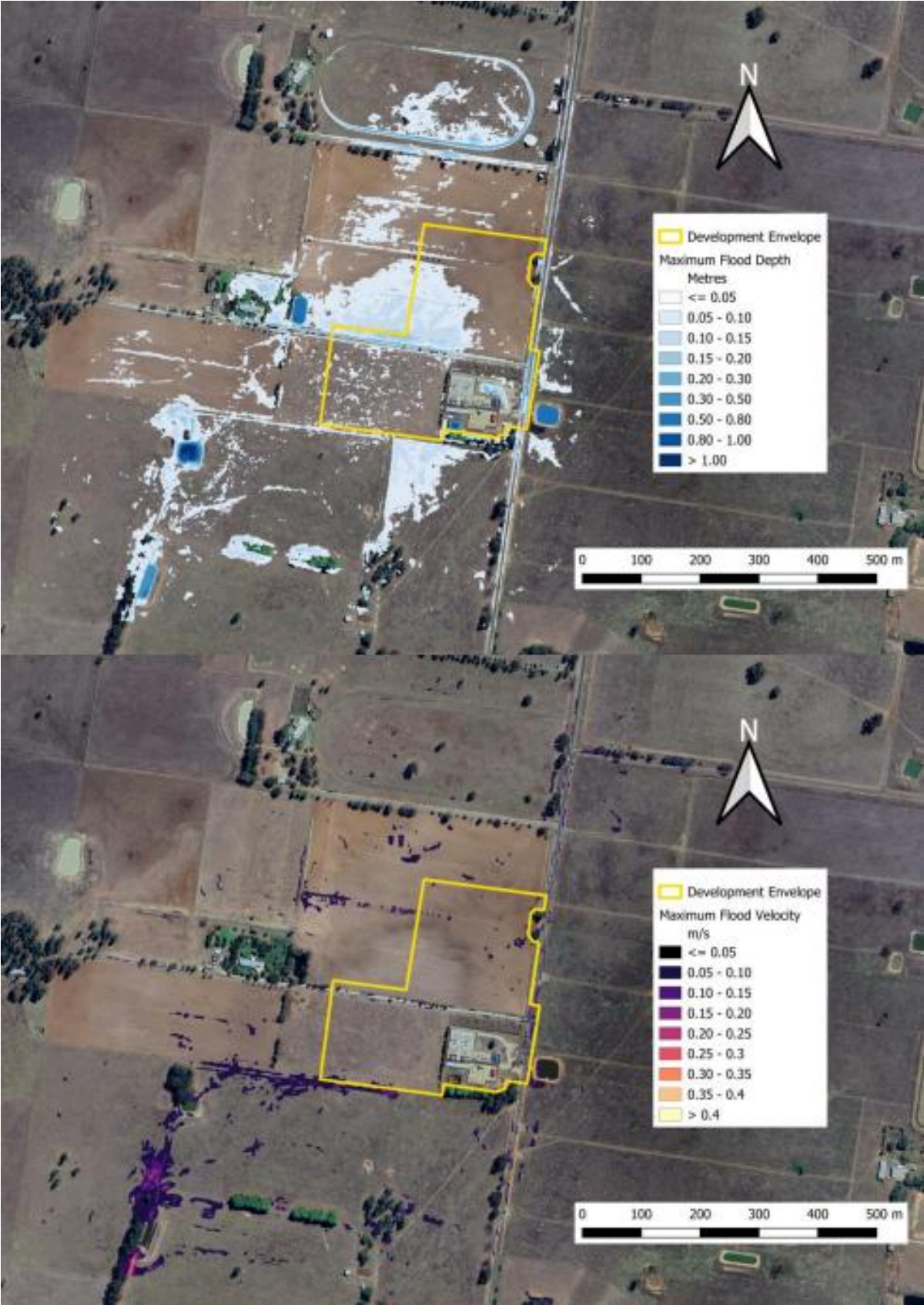


Figure 6-52 Pre-development maximum flood depth (m) and velocity (m/s) mapping for the 10% AEP design event

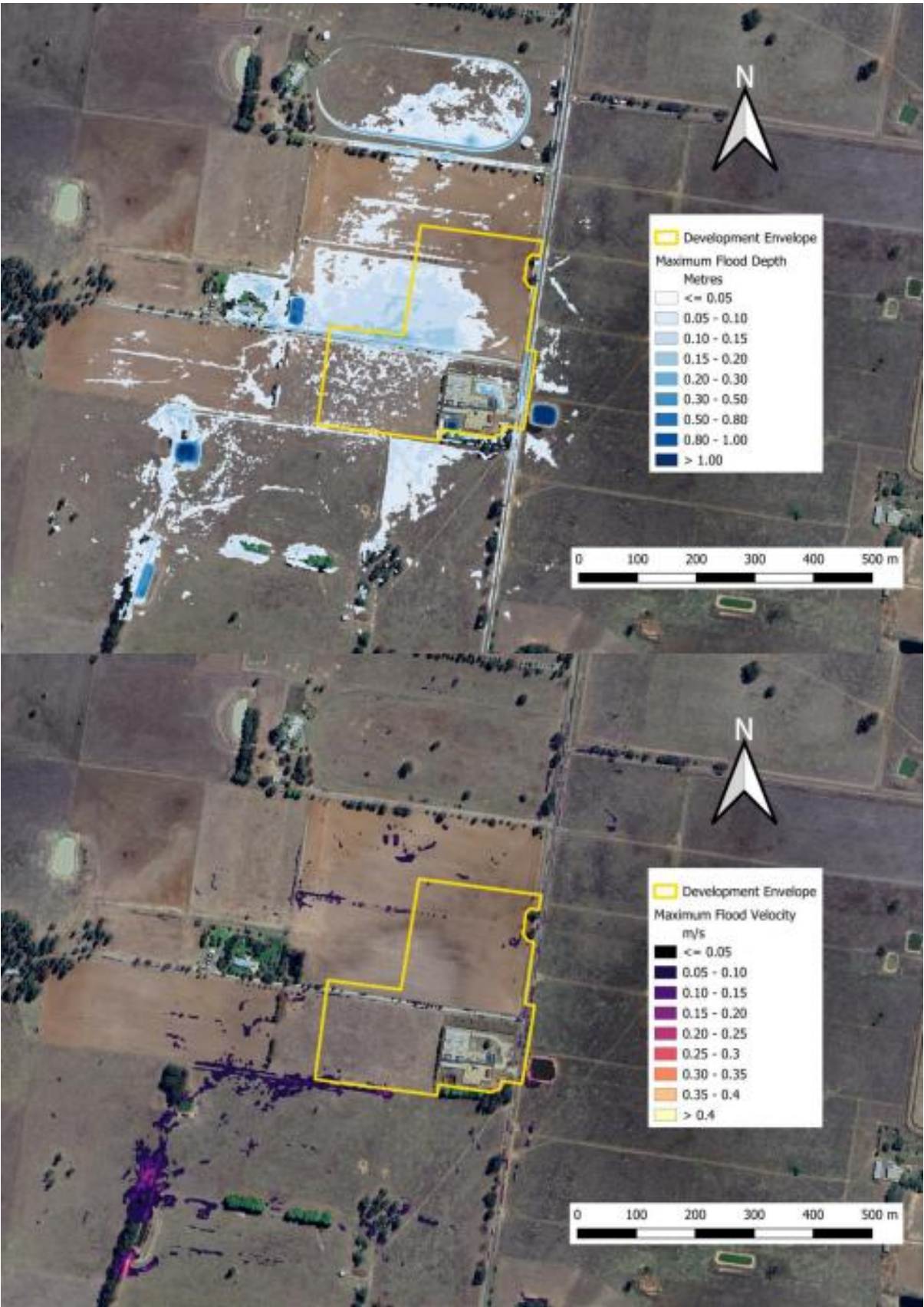


Figure 6-53 Pre-development maximum flood depth (m) and velocity (m/s) mapping for the 5% AEP design event

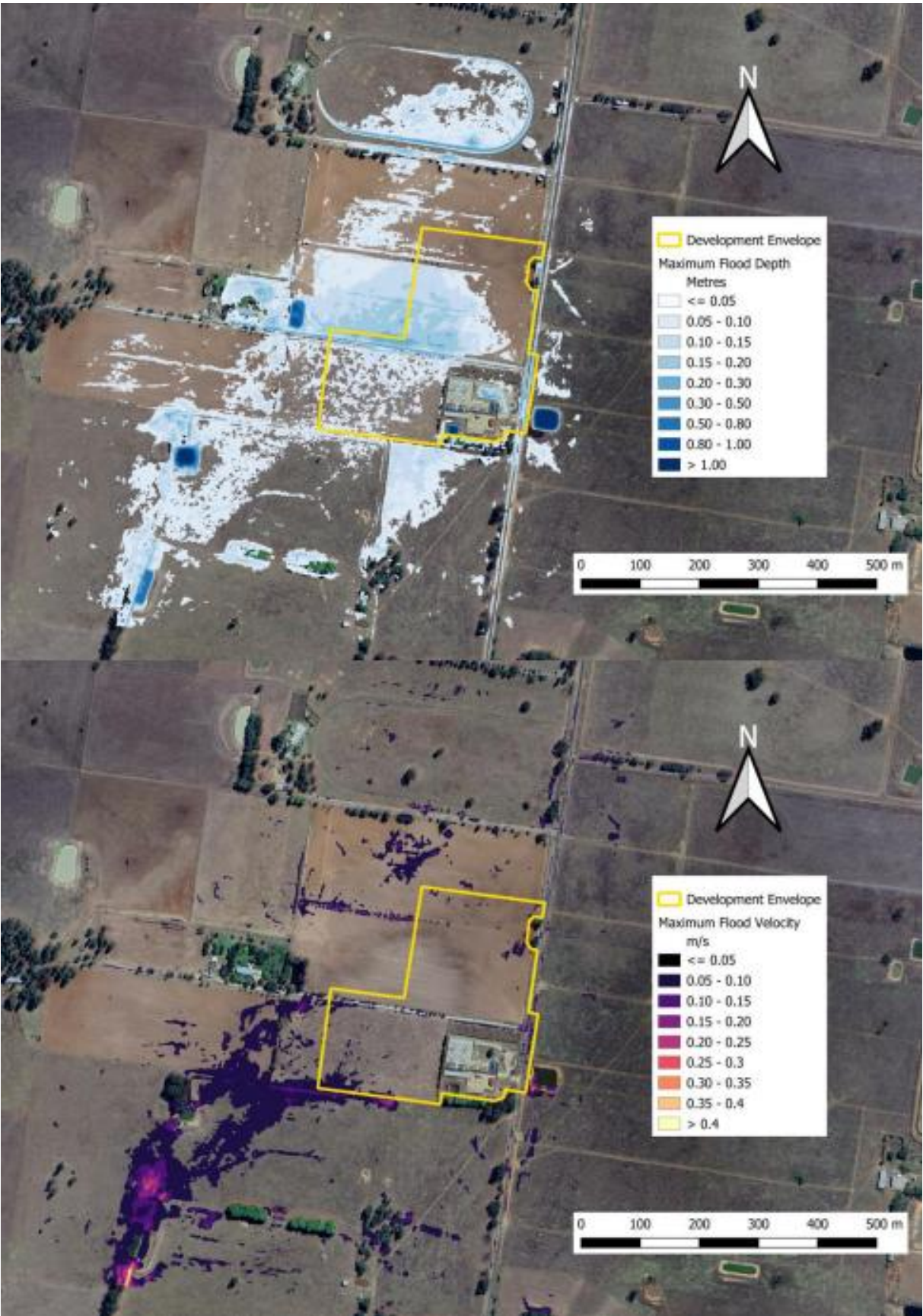


Figure 6-54 Pre-development maximum flood depth (m) and velocity (m/s) mapping for the 1% AEP design event

In the post-development scenario, the implementation of the elevated hardstand will protect the Project Site from flooding under all design events, with sufficient 500mm freeboard (refer to Figure 6-55 to Figure 6-57).

The results of the modelling further indicate that the extent of flooding offsite is minimally impacted by the introduction of the Project and its elevated hardstand area, with no new properties inundated, or increases in flood depth elsewhere in the floodplain. The afflux map (Figure 6-58) identifies differences in flood level between the pre- and post-development scenario. This map confirms that the Project Site (with the elevated hardstand area) will not influence flooding way from its footprint. The small difference observed on the hardstand itself is due to the lifted surface level. This will be managed as local runoff in the detailed design phase.

The modelling further indicated that, in the climate change scenario, the Project Site is still protected and free from overland flooding, and that the proposed elevated hardstand can still provide the required 500mm freeboard (refer to Figure 6-59).

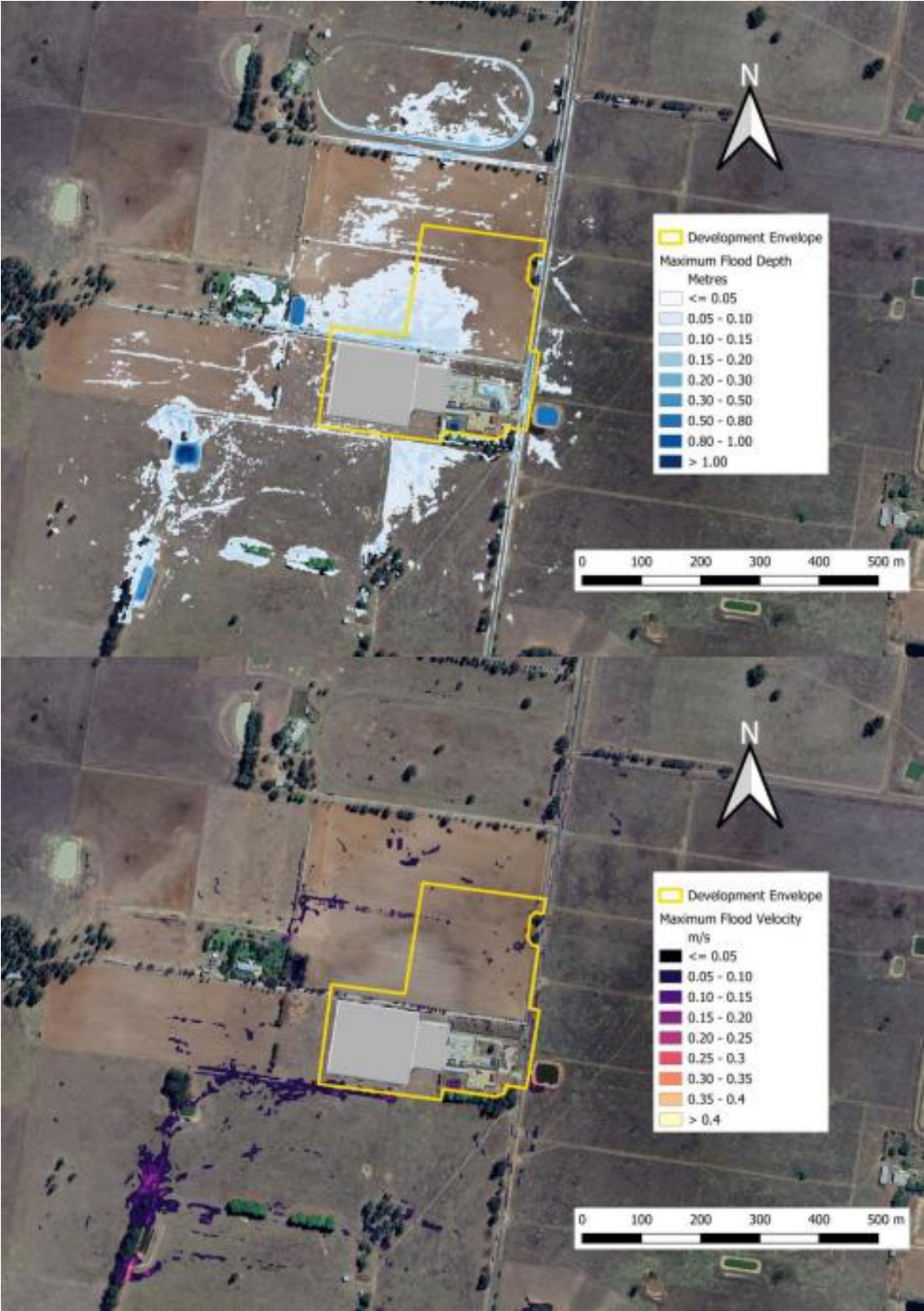


Figure 6-55 Post-development maximum flood depth (m) and velocity (m/s) mapping for the 10% AEP design event

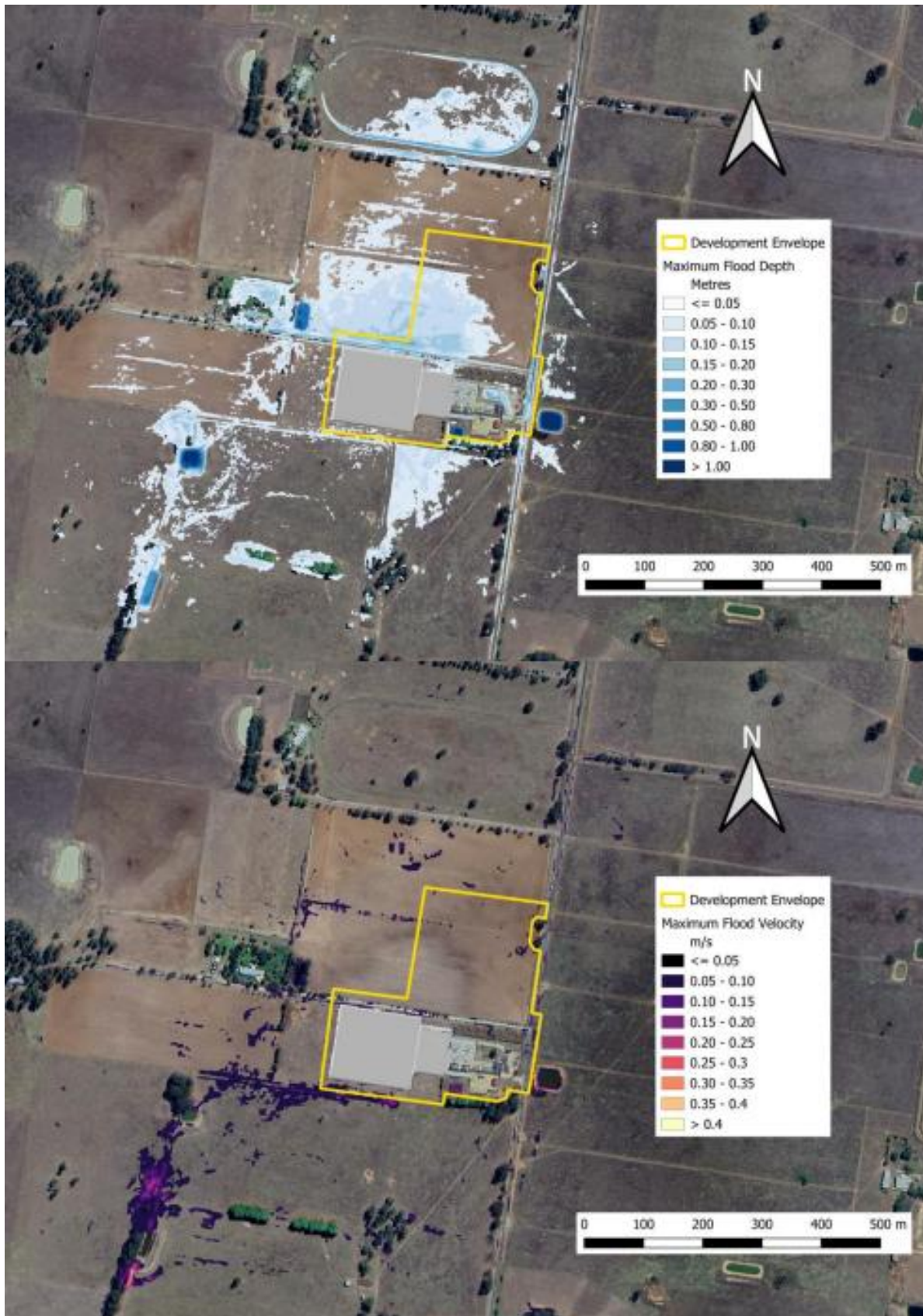


Figure 6-56 Post-development maximum flood depth (m) and velocity (m/s) mapping for the 5% AEP design event

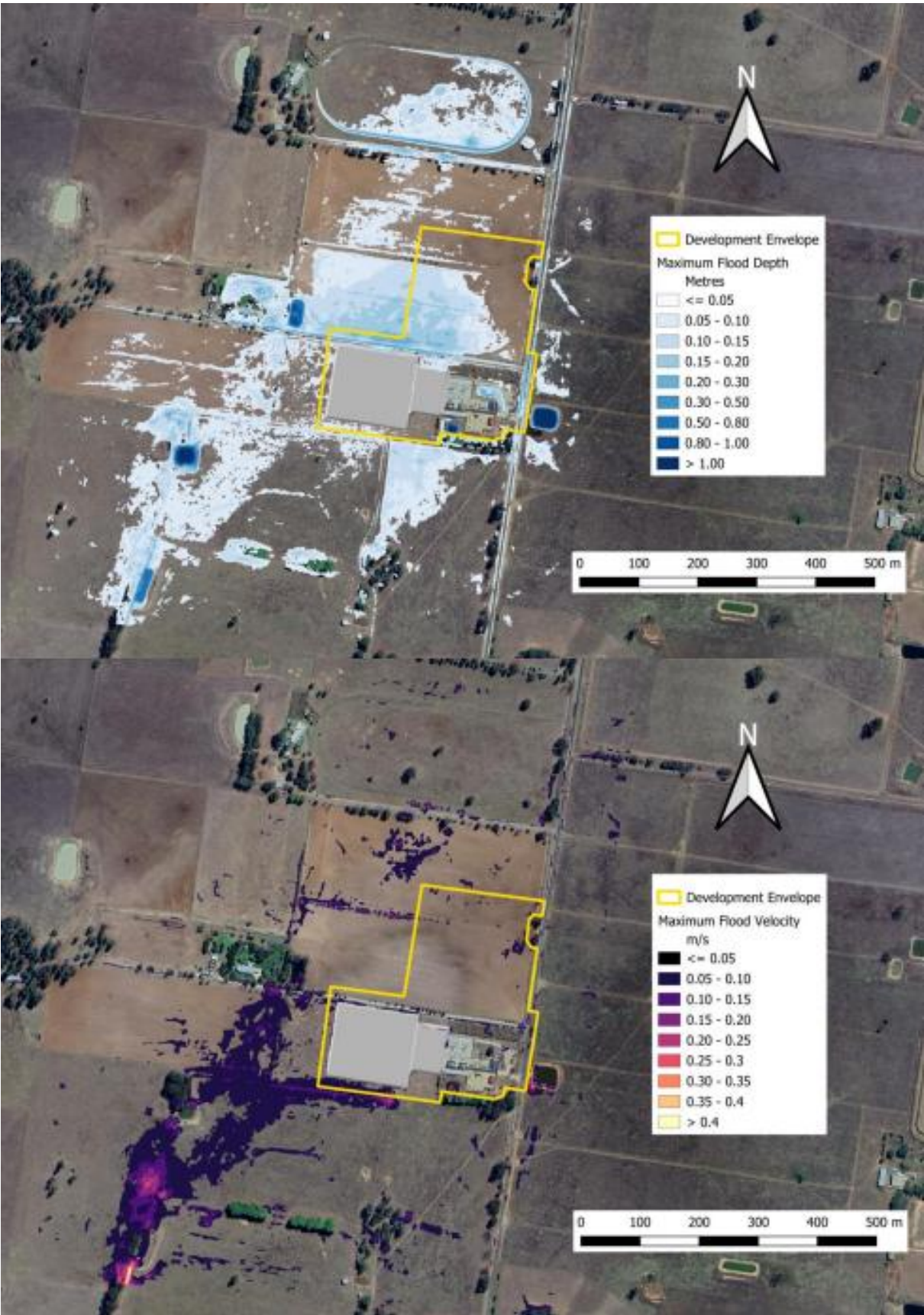


Figure 6-57 Post-development maximum flood depth (m) and velocity (m/s) mapping for the 1% AEP design event



Figure 6-58 Change in maximum flood levels in 1% AEP scenario

Environmental Impact Statement

Corowa Battery Energy Storage System

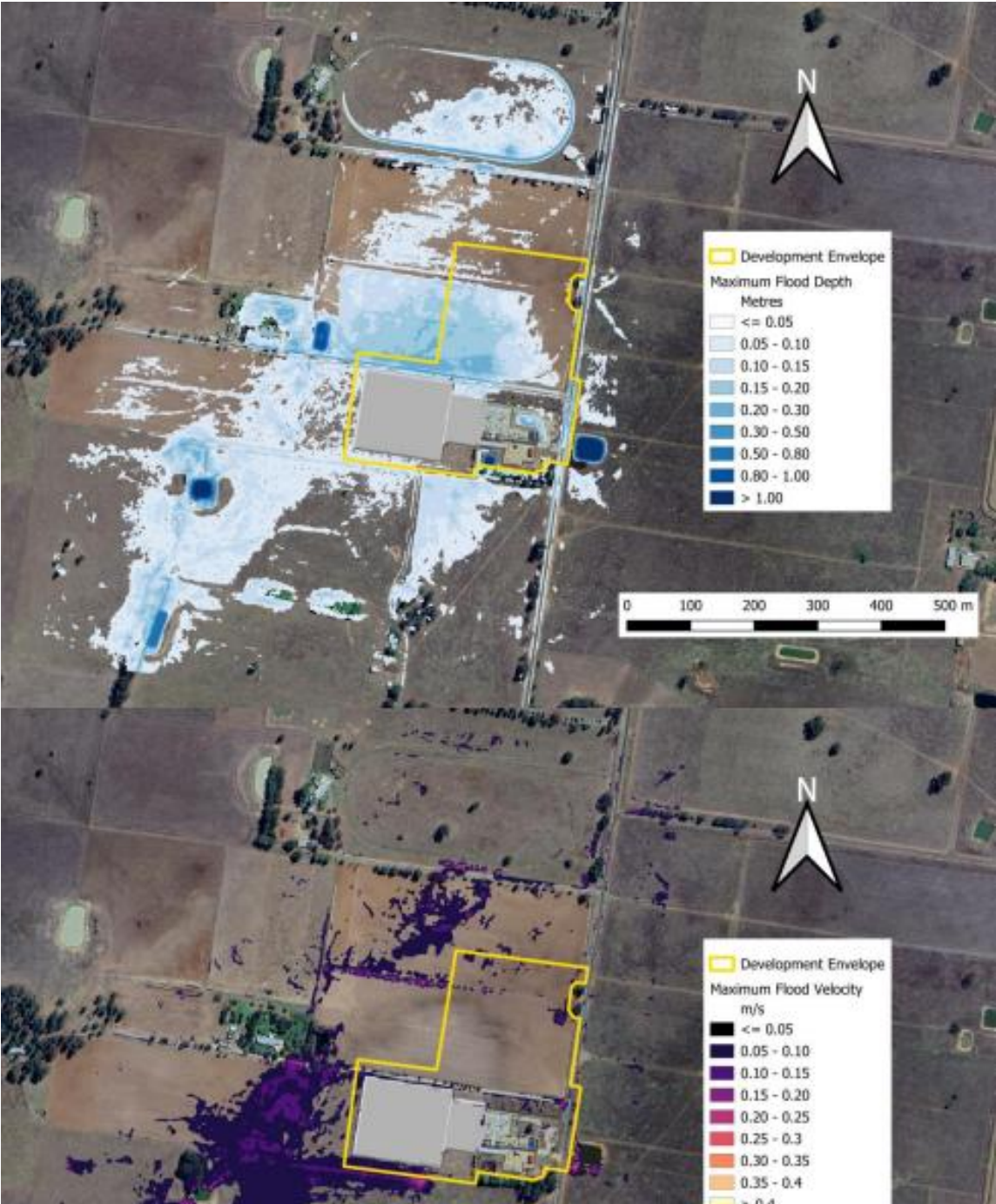


Figure 6-59 Maximum flood depth (m) and velocity (m/s) for the 1% AEP climate change scenario

6.8.3. Potential impacts

The Project avoids the H3, H4, H5 hazard mapping. An elevated bench level is required to ensure the operational infrastructure would be safe and free from flooding, as has been undertaken for the Corowa substation to the east.

Fyfe recommends that, based on the flood levels identified for the 1% AEP and PMF flood events, the Project Site be elevated to at least 141.25m AHD to protect the site from flooding, and to provide 500mm of freeboard. This would equate to between 0.75 and 1m of fill if the BESS is situated within the eastern half of the Project Site.

Changes to the regional topography have been reviewed and it has been confirmed that there will be no adverse effect on flood behaviour elsewhere in the catchment, through the displacement of floodwaters that would otherwise have flowed / ponded in this location.

The modelling exercise has demonstrated that, with an elevated hardstand in place:

- There will be negligible offsite hydrological impacts, and
- There will be negligible risk of increased erosivity of floodwaters.

6.8.4. Mitigation measures

Table 6-40 Safeguards and mitigation measures to manage hydrology and flooding impacts

ID	Mitigation measures	Project phase
H1	An elevated hardstand area of at least 141.25m AHD will be created on the Project Site to protect the site from flooding associated with the 1% AEP event, and to provide 500mm of freeboard.	Detailed Design

Environmental Impact Statement

Corowa Battery Energy Storage System

6.9. Soils

The information presented in this section summarises two specialist studies:

1. Soil Assessment
2. A Preliminary Site Investigation.

The assessments respond to the SEARs (provided in full in Appendix A). Copies of both assessment reports are attached to this document, as Appendix E10 and E11 respectively.

The purpose of these assessments was to evaluate soil properties, the likelihood of erosion and contamination risks during construction, operation, and decommissioning of the Corowa BESS.

6.9.1. Approach

Soil survey

The purpose of the Soil Technical Report was to identify current soil characteristics and assess the potential for erosion or contamination within the Development Footprint. As there are no specific guidelines for soil sampling at BESS sites, the survey followed the Large-Scale Solar Energy guidelines.

A desktop assessment was undertaken, to determine the expected soil classification, great soil group, land and soil capability, inherent soil fertility, hydrologic soil groups and soil landscapes of the Project Site. This was followed by a site investigation, comprising a drilling program, carried out on 14 October 2025, using a 6.5T S590 bobcat with a 450mm auger.

The soil sampling and classification was undertaken in accordance with the *Australian Soil and Land Survey Field Handbook* (CSIRO, 2009) and the *Australian Soil Classification* (Isbell, 1996). The density for number of boreholes completed was determined in accordance with the *Guidelines for Surveying Soil and Land Resources* (CSIRO, 2008) for a moderately (semi-detailed) intensity level.

A total of 4 sampling points were calculated as required for the 10.34ha Development Footprint (based on 1 sampling point per 2.56 ha). The location of the sampling points is shown in Figure 6-60 Borehole locations, tested for soil characteristics and contamination

Sampling was undertaken on 14 October 2025. During sampling, notes were made of site conditions, as well as a description of the soil profile, down to a depth of 1.5m.

Samples of topsoil and subsoil were taken and sent for laboratory testing at a National Association of Testing Authorities (NATA) accredited laboratory, to provide information on soil nutrient status and erosivity.

The survey area is identified as the area of land chosen to site the BESS. The boreholes (BH) were located within the Project Site and confined to the area proposed to site the BESS infrastructure. It does not include the transmission route or substation connection.

The results of the soil survey have been summarised in the sections to follow. The full report is available in Appendix E10.

Preliminary Site Investigation

The purpose of the PSI was to assess whether, based on preliminary soil analysis results, identified soil contamination poses unacceptable risks to human health on site, as required by the National Environment Protection (Assessment of Site Contamination) Measure (ASC NEPM).

The Project Site and surrounding land have been historically utilised for agricultural activities, specifically cropping. In addition to this, a substation is located within the south-eastern corner of the site. Agricultural activities and substations are listed as potentially contaminating land use activities within Table 1 of the Managing Land Contamination Planning Guidelines (EPA, 1998). Therefore, a PSI is required to satisfy the provisions of the *State Environmental Planning Policy (Resilience and Hazards) 2021*.

The scope of works included a site walkover (14 October 2025), a review of historical databases, land title searches, an aerial photography review, development of a preliminary conceptual site model (CSM), limited soil sampling program and the preparation of a PSI report. The assessment included the Development Footprint, including the BESS site and the intersection of Bullecourt Road and Honour Avenue.

Concurrent with the soil sampling, and in the same locations, additional samples were collected for contamination testing.

Soil samples were sent to ALS Environmental (Sydney) for the following analyses:

- BH01, BH02, BH03 and BH04 (surface (0.0 – 0.1m) and subsurface (0.5m) samples were analysed for:
 - Heavy metals (arsenic, cadmium, chromium, copper, nickel, lead, zinc and mercury)
 - Organochlorine Pesticides (OCPs)
 - Organophosphate Pesticides (OPPs)
- BH02 and BH03 (surface (0.0 – 0.1 m) and subsurface (0.5m) samples were also analysed for:
 - Benzene, Toluene, Ethylbenzene, Xylene and Naphthalene (BTEXN)
 - Total Recoverable Hydrocarbons (TRHs)
 - Polychlorinated Biphenyls (PCBs)
 - Polycyclic Aromatic Hydrocarbons (PAHs)
 - Phenols.

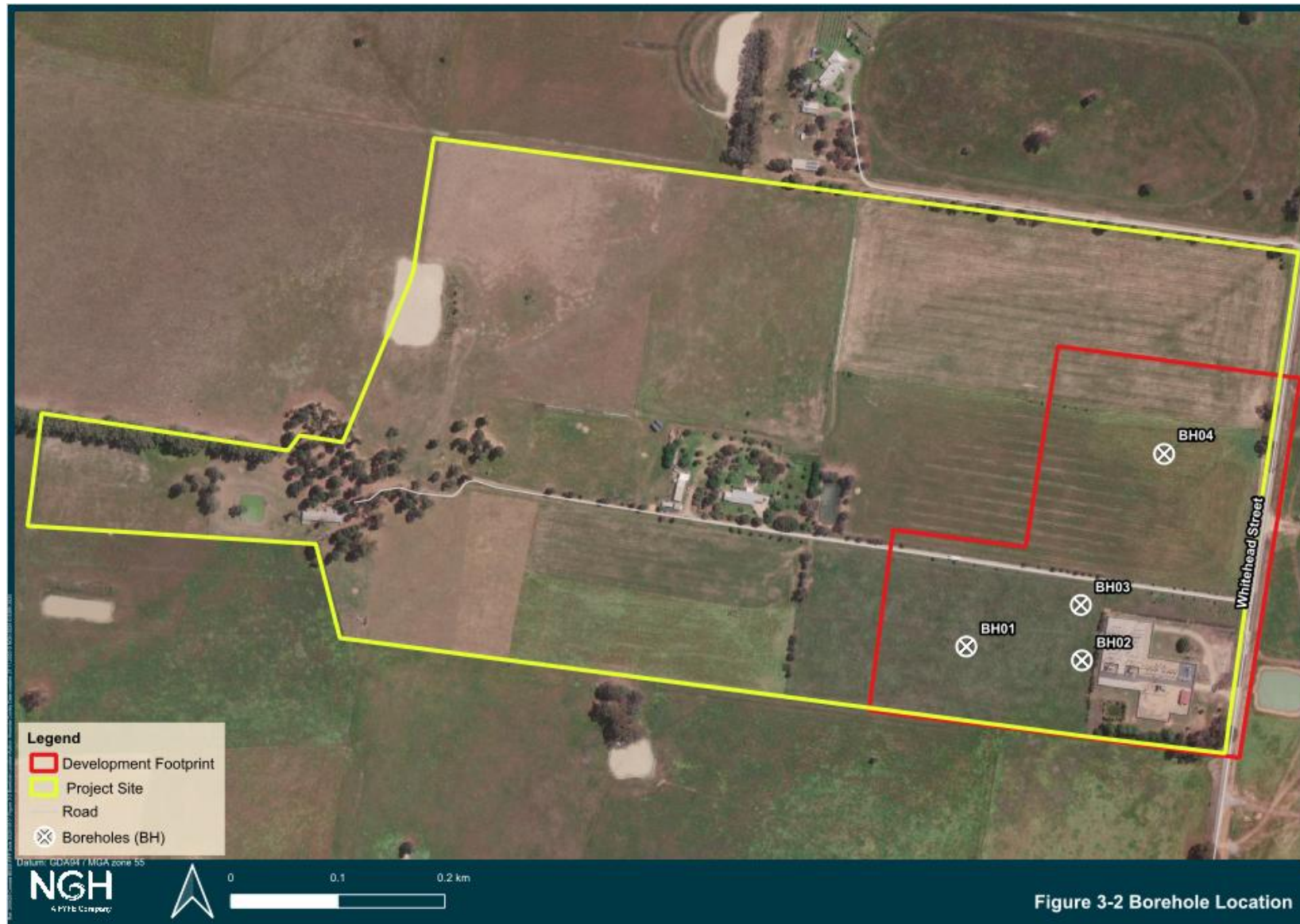


Figure 6-60 Borehole locations, tested for soil characteristics and contamination

6.9.2. Existing environment

Soil assessment

Desktop assessment

The desktop assessment indicated that the soils of the Project had the following statewide mapping and classifications and are summarised in Table 6-41.

Table 6-41 Findings of the desktop assessment

Aspect	Finding	Explanation
Australian Soil Classification (ASC)	Chromosols	Chromosols are soils with a strong texture contrast between A horizons and B horizons. The latter are not strongly acid and are not sodic. The soils of this order are among the most widespread soils used for agriculture in Australia, particularly those with red subsoils.
Great Soil Group	Red-brown earths	Red Brown Earth soils have a topsoil of sandy loam to light clay loam overlying a clay subsoil. The lighter textured topsoil is between 10 centimetres (cm) and 40 cm thick and varies from red to grey-brown. The lower topsoil is called the A2 Horizon. This may be bleached. The subsoil varies from yellow to red to grey.
Land and Soil Capability (LSC)	Class 3 (high capability land)	Land has moderate limitations and is capable of sustaining high impact land uses, such as cropping with cultivation, using more intensive readily available and widely accepted management practices. However, careful management of limitations is required for cropping and intensive grazing to avoid land and environmental degradation.
Soil Landscape	Wait-a-while (WaL) Stagnant Alluvial	Characterised as broad level plain on alluvium. Typical of the WaL soil landscape are slopes <1%, local relief <9 m, elevation 90-180 m, sparse narrow linear drainage line with Gilgais occurring locally
Biophysical Strategic Agricultural Land (BSAL)	None mapped in the area	The NSW Government's Strategic Regional Land Use Policy defines and identifies strategic agricultural land across NSW. Strategic agricultural land includes land with unique natural resource characteristic, known as biophysical strategic agricultural land (BSAL), and clusters of significant agricultural industries known as critical industry clusters (CIC). The policy has been developed to achieve balanced land use outcomes, specifically between mining,

Aspect	Finding	Explanation
		coal seam gas and agriculture.
State Significant Agricultural Land (SSAL)	The Project Site is partially mapped as SSAL	The NSW Department of Primary Industries is undertaking a mapping program of State Significant Agricultural Land (SSAL). A map of SSAL is an essential component of agricultural land use planning, enabling clearer local planning with informed prioritisation of future land uses. The current mapping is in draft and is coarse in nature.
Acid Sulfate Soils (ASS)	No land is currently mapped on the Project Site as being impacted by ASS	Inland acid sulfate soils occur on inland waterways, wetlands and drainage channels. Inland acid sulfate soils develop in waterlogged, saline and anaerobic (which means 'living without air') conditions. Inland acid sulfate soils became an issue during the drought in the 2000s, also known as the 'millennium drought'. This long period of drought reduced water levels and exposed acid sulfate material which oxidised and released acid and metals into inland waterways.
Hydrological Soil Groups	Slow infiltration	
Inherent soil fertility	Moderate	

Site observations

The Project Site was observed to be generally flat. There were no trees observed in the Development Footprint. There was a mix of introduced and native grasses. Groundcover was dense and ungrazed, refer Figure 6-61.

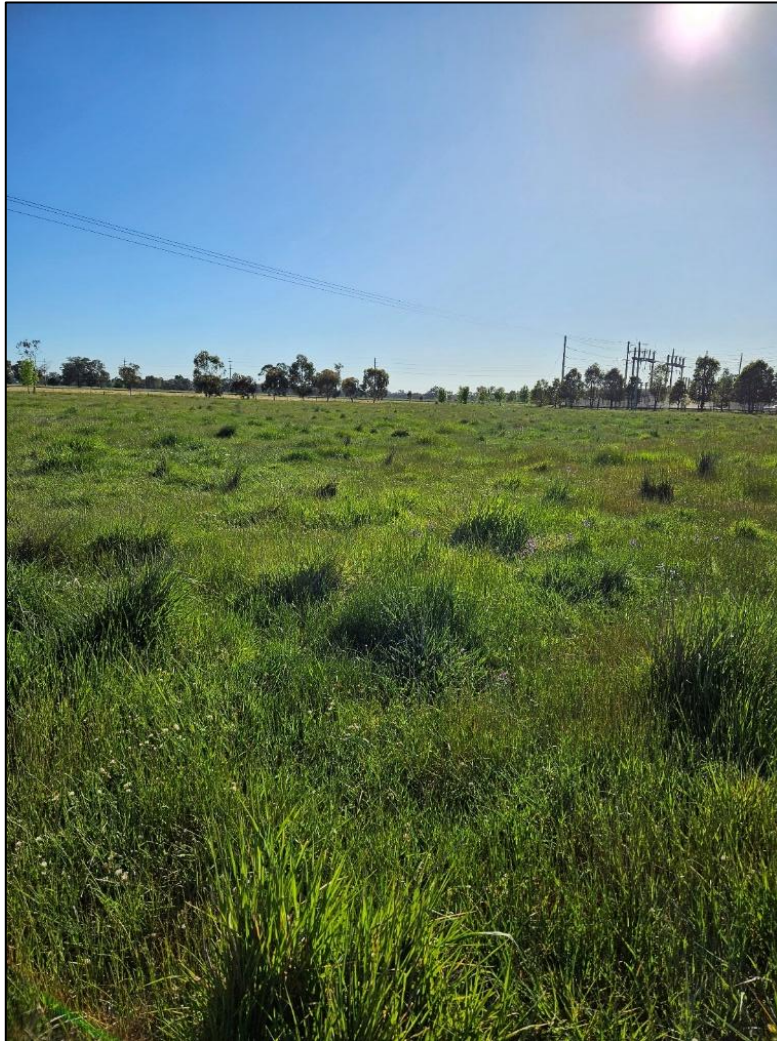


Figure 6-61 Project Site (picture of site conditions)

Surface conditions include:

- Vegetation covering 100% of the soil
- The Development Footprint has been predominantly cleared of tall standing native vegetation.
- All boreholes were terminated at full depth of 1.5 metres (m).

Boreholes are described in the Soil Technical Report included as Appendix E10.

As part of the PSI, an NGH Environmental Consultant completed a site walk over at the same time as the soil sampling effort.

Observations made during the site walk over include the following:

- The Development Footprint is Flat. Thick ground cover was observed.
- The adjoining substation occurs within the south-eastern corner of the Project Site.
- Transmission line infrastructure was observed
- Rural fencing and culverts associated with roads and tracks within the Project Site and adjacent to the Eastern boundary of the Project Site.

Laboratory analysis

Soil survey

Based on four topsoil samples and six subsoil samples, Table 6-42 provides a review of the desktop findings and the field results.

Table 6-42 Review between desktop findings and field results

Desktop	Soil survey results	Results summary
Australian Soil Classification (ASC) – Chromosols Soil Landscapes – Wait-a-while (WaL) Stagnant Alluvial.	All testing locations indicated a level of sodicity at one or more depths. This contradicts the description of a Chromosol.	Results are consistent with pH description for topsoils, but inconsistent with subsoil description, showing sodicity. Results are consistent with the WaL soil Landscape description.
Great Soil Group – Red-brown earths	Survey results are consistent with this definition with light clay overlaying heavier clays.	The CEC ranges from 4.6 to 38.2 with most topsoils being classed as a light soil (sandy loam to loam) in the topsoil trending to medium to heavy clay in the subsoil. The survey results are consistent with the description for Red-brown earths.
Land and Soil Capability – Class 3	Soil surveys have verified some limitations. Land Capability Class has not been verified but is accepted as a conservative approach at this time.	This is accepted as mapped.
Inherent Soil Fertility – Moderate	Soil nutrients are recorded as low to deficient in major nutrients such as nitrogen, phosphorus and calcium. Cations are very unbalanced throughout the soil profile.	The soil results reflect a low soil fertility and are in contrast to mapped soil fertility of Moderate. Soil structure is also unstable due to the imbalance of cations in the CEC. Emmerson Aggregate Test results range from Class 2 to Class 3. The topsoils and subsoils are considered dispersive with a moderate to high risk of dispersion. The topsoil organic carbon content is considered low for the topsoil across the site. Topsoils are considered non-sodic. Subsoils are considered to be slightly to moderately sodic.
Hydrologic Soil Groups – Slow infiltration.	Accepted as mapped.	Accepted as mapped.

The B horizon soils tested are inconsistent with the description of Chromosols. However, they are consistent with the description of the Wait-A-While soil landscape and Red-Brown Earths, which have sandy loam to clay loam topsoil over clay subsoil.

The Project Site falls under Hydraulic Soil Group C, indicating slow infiltration due to layers that restrict water movement.

Laboratory results confirm the soils are sodic at depth, moderately to highly dispersive, and non-saline (electrical conductivity <6). High exchangeable sodium percentage (ESP) makes these soils highly vulnerable to erosion, as dispersion weakens clay structure, leading to crusting, tunnel erosion, gully formation, and slumping. This accelerates runoff and landscape instability, posing risks to infrastructure and productivity during heavy rainfall or irrigation.

Preliminary Site Investigation

Site investigation

Observations relevant to the PSI are summarised in Table 6-43. They were made during the site walkover.

Table 6-43 Summary of observations from PSI site investigation

Location	Observations
Development Footprint	• A gravel access road services the site • A plastic tub and feed trough was observed • Timber poles, timber waste, scrap metal and electrical infrastructure was observed within the Corowa substation Lot. An access grate was observed • No notable signs of contamination (odour, soil staining, etc) were noted • No Asbestos Containing Material (ACM) was observed.
Intersection of Bullecourt Road and Honour Avenue	• The intersection area was observed to be very flat • Groundcover on either side of Honour Avenue consists of grasses and gravel • A cement pipe and culvert were noted.

Lot search

NGH engaged in a Lot search to provide an Enviro Pro database search report (refer to the PSI for the full report). A summary of the findings has been provided below:

- The Contaminated Land Record returned no records within the Project Site
- The Contaminated Land Record of Notices did not return any notices within the Project Site
- The Project Site is not known to contain a former gasworks development.

Laboratory analysis

Analytical results for the PSI sampling program were below the limit of reporting (LOR) for all analytes, except for some metals/metalloids and PAHs. All results were below the adopted HIL D Tier 1 soil screening levels for the relevant soil screening criteria. This analysis indicates that disturbance of site soils during construction activities are not likely to present a risk to human health or the environment under a commercial / industrial land use. No further contamination assessment is considered warranted.

6.9.3. Potential impacts

The proposed disturbance area for siting the BESS is approximately 10.65ha. Construction activities that would impact soils include the use of equipment and earthworks.

Construction

The construction of the BESS would disturb soils through the following activities:

- Compaction during construction of access tracks and APZ area
- Construction of perimeter security fencing
- Hardstand foundations for the BESS container footings, substation and office / amenity buildings
- Civil works associated with transmission line connection to the Corowa Substation
- Excavation of cable trenches 600mm – 900mm wide and 1,000mm deep.

This soil disturbance has the potential to result in the following impacts:

- A reduction in soil stability and increased susceptibility to erosion due to vegetation removal or soil exposure in areas identified with a dispersive subsoil
- Loss of topsoil and impacts on waterways due to increased erosion and sedimentation hazard
- Reduced soil permeability and increased run-off as a result of soil compaction for internal access roads and hardstand areas
- Risk of exposing buried contaminant (pesticides and hydrocarbons).

The evaluation of existing soil characteristics shows that the soils have some vulnerability to disturbance, particularly when wet. Low contamination risks are present.

The soil results can be used to assist develop design and mitigation measures to address these risks.

Groundcover would be maintained where possible during the pre-construction and construction stages of the Project and would be rehabilitated upon decommissioning. Erosion and sedimentation impacts that may arise because of construction and decommissioning can be minimised by carrying out the activities in accordance with the provisions of the *Managing Urban Stormwater: Soils and Construction “Blue Book”* (Landcom, 2004). Site specific erosion and sediment control requirements would be informed by the results of the soil survey (refer AppendixF10), including:

- Applying lime to improve soil structure and water infiltration.
- Adding short-term and long-term phosphorus sources to support revegetation and potential vegetation screening.
- Ameliorating soil nutrients to support revegetation and potential vegetation screening.
- Rehabilitating soils to establish stabilizing pasture species in non-hardstand areas, reducing erosion risk and ensuring appropriate restoration during decommissioning.

Operation

Activities associated with the operation stage would be mostly confined to formalised access tracks. Vehicles would be infrequent and limited to the access track and parking area.

Soil disturbance would be minimised by rehabilitation measures undertaken during construction and establishment of ground cover following soil disturbance activities. The risk to soil impacts is considered low with the implementation of appropriate mitigation measures.

During operation, the primary land use would transition from agricultural use to energy storage. This would be limited to the Development Footprint (10.34ha). The remainder of the Project Site would continue to be used for agricultural purposes.

Decommissioning

Upon BESS decommissioning, all above- and below-ground infrastructure (including concrete footings, slabs, cabling, and battery components) will be removed and recycled. Site rehabilitation activities will then be implemented to restore the area to its original, uncontaminated condition, consistent with the mapped LSC and with a balanced Cation Exchange Capacity (CEC) and nutrient status with the capacity to support Agricultural enterprises consistent with current and former land use. This process will be guided by a detailed agronomic soil survey and a rehabilitation plan. To ensure a safe agricultural environment, a Preliminary Site Investigation (PSI) with supplementary soil testing will be undertaken to identify and remediate any contamination resulting from the Project, if required.

6.9.4. Uncertainty

While soil surveys have been undertaken to guide this assessment, a more detailed program is recommended to provide additional rigour to support rehabilitation objectives. Conservative assumptions have been applied to address data gaps at this time.

6.9.5. Mitigation measures

The results of the soil surveys can be used to assist design, construct, operate and decommission the Project, to minimise risks to soils and of contamination.

Table 6-44 Safeguards and mitigation measures to manage soils and contamination

ID	Mitigation measures	Project phase
SO1	Progressive and adaptive Erosion and Sediment Control Plans (ESCP) and a Soil and Water Management Plan (SWMP) will be prepared for the Project in accordance with Landcom Soils and Construction: Managing Urban Stormwater (Landcom, 2004) and include, but not be limited to: • Minimising the extent and duration of ground disturbance • Progressive rehabilitation of disturbed areas • Stockpile management of topsoil to prevent soil structural decline. Topsoil will be stripped and stockpiled separately. Stockpiles will be stabilised with a groundcover (i.e. geotextile or similar) if stockpiling is required for more than six weeks • A Spill Response Procedure • An Unexpected Finds Procedure, for contaminated soil • Maintain at least 70% groundcover where applicable throughout the site during operation to reduce the risk of erosion, subject to climatic	All phases

ID	Mitigation measures	Project phase
	conditions.	
SO2	A comprehensive agronomic nutrient soil survey (including sampling and analysis) will be conducted prior to construction to: • Support preparation of the vegetation screening area to provide a growing environment which is conducive to achieving a successful vegetation screen. • Enable complete rehabilitation of the Project Site to restore the land to stable Agricultural land use following decommissioning. • Support rehabilitation plan (re-vegetation) • Support design process.	Preconstruction Decommissioning
SO3	A Revegetation and Rehabilitation Plan for decommissioning will be prepared and include stabilisation and topsoil amelioration (e.g., incorporation of organic matter to improve soil structure or gypsum to improve structure, reduce hard-setting surfaces and reduce soil dispersion).	Decommissioning
SO4	Avoid altering the groundwater and surface water regime to prevent mobilisation of any salt stores, however low, in the soil.	All phases
SO5	Soil survey results (Appendix E10), Australian Soil and Land Survey Handbook (CSIRO, 2009), Guidelines for Surveying Soil and Land Resources (CSIRO, 2008) and the Land and Soil Capability Assessment Scheme: second approximation (NSW OEH, 2012) will be referenced when returning the Project Site to its pre-construction state, so far as practical.	Decommissioning
SO7	A post decommissioning PSI with supplementary soil testing would be undertaken during the decommissioning phase. This would occur prior to significant soil disturbance / rehabilitative works. A Remediation Action Plan (RAP) will be developed, if contamination is identified within the site.	Decommissioning

6.10. Land use compatibility

6.10.1. Approach

This section summarises the land use compatibility of the Project in the context of its surrounds. It is primarily a desktop assessment but is also informed by the results of the specialist assessments undertaken for the Project, specifically the Soil Assessment.

Land Use Conflict Risk Assessment (LUCRA) enables a quantified site-specific conflict assessment approach to land use planning and development assessment. A LUCRA in accordance with the DPI *Land Use Conflict Risk Assessment Guide* (DPI, 2011) was undertaken to consider the land compatibility impacts and rank their compatibility with existing or planned land uses. The LUCRA assessment is primarily used to consider impacts on agriculture but can be expanded to consider compatibility with other nearby land uses (such as residential use, transport, etc).

6.10.2. Existing environment

Land use

The majority of the Project Site is currently mapped as cropping, with smaller portions mapped as grazing (native vegetation) land (refer to Figure 6-62). The south-eastern portion of the Project Site is currently utilised for the purposes of electricity distribution (this is not accurately captured within the available land use mapping).

Whitehead Street, Bullecourt Road, as are the intersections of Bullecourt Road and Honour Avenue, and Whitehead Street and the Riverina Highway are active transport corridors.

The surrounding areas are dominated by the following land uses:

- Cropped land
- Grazing (modified pastures)
- Residential and farm infrastructure

Noting that urban development, retail and manufacturing areas of Corowa are less than 3km from the Project Site.

Refer to Table 6-45 for other pertinent land use considerations in proximity and within the broader region of the Project.

Table 6-45 Other land use considerations, in proximity and within the broader region

Land Use	Description
Close proximity	
Crown land and paper roads	There is no Crown Land in the form of paper roads associated with the Project.
Drinking water catchments	The Project is not located within a drinking water catchment.
Exploration licences and	There are no mineral exploration licenses held over the Project Site.

Land Use	Description
mining leases.	
Broader region	
Reserves	Two National Parks and one State Forest occur within 10km of the Project Site: Murray Valley National Park, located approximately 7.1km to the south Murray Valley Regional Park, located approximately 8.9km to the south-west Ringwood Tank State Forest, located approximately 9.8km to the west.
Major Projects	Within the broader region, there are several renewable and other major projects proposed or operating including: • Howlong Sand and Gravel Quarry Expansion • Mulwala Solar Farm • Jindera Solar Farm • Kilnacraft Creek BESS • Glenellian Solar Farm • Jindera BESS • Inland Rail – Albury to Illabo • Wodonga Solar Farm (Victoria) • Indigo Solar Farm (Victoria) • Barnawartha Solar Farm (Victoria) • Wangaratta Solar Farm.

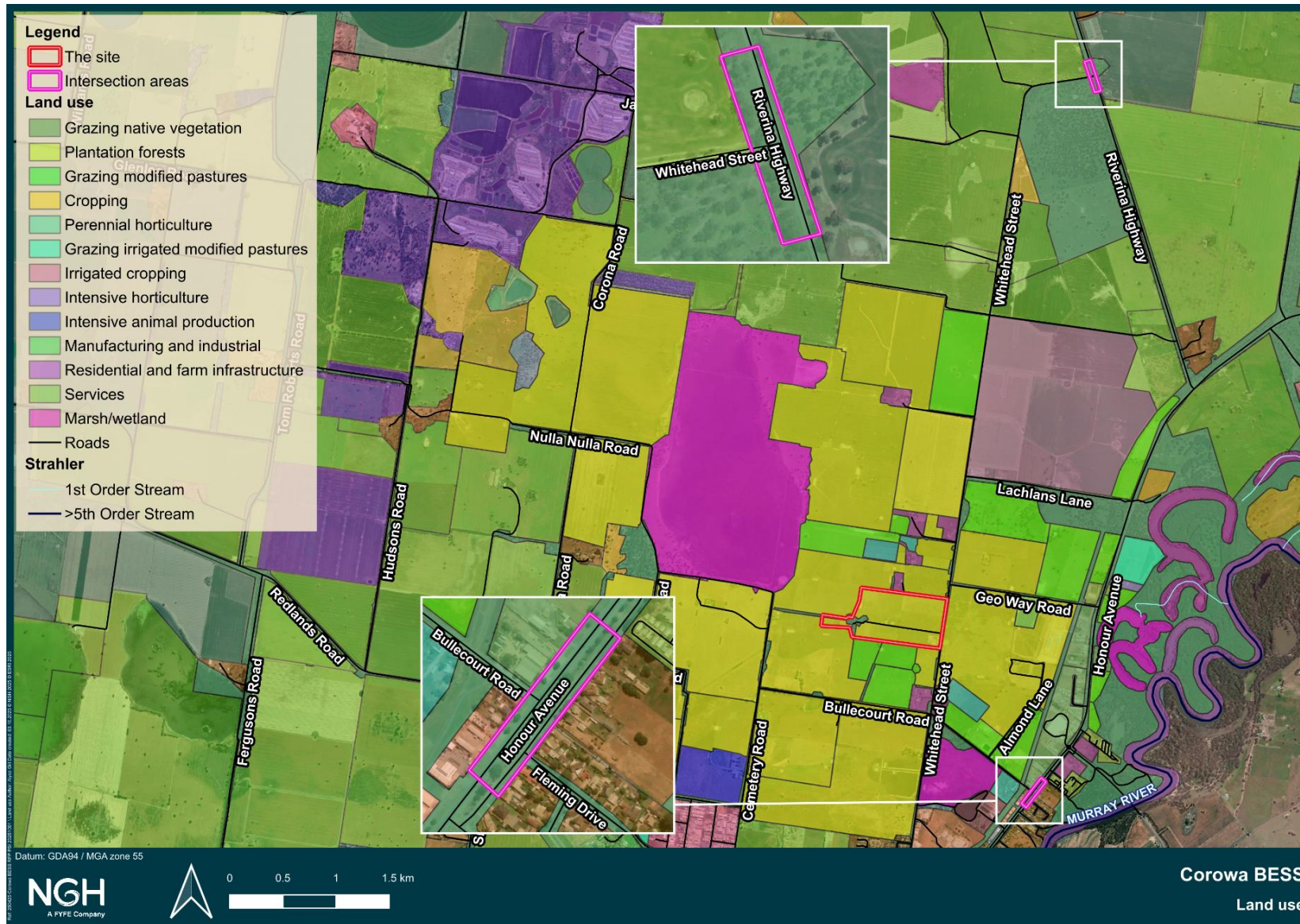


Figure 6-62 Land use mapping

Agricultural use: Land and soil capability

Regional agricultural economy

The Project Site is located within the Federation Council LGA, which is located within the Riverina region, where agriculture is the dominant land use. In the Riverina, approximately 78.6% of land (4.47 million ha) is used for agriculture, primarily grazing native vegetation and modified pastures (39.8%) and cropping (37.8%) (ABARES, 2025).

For Corowa specifically, agriculture is a major economic driver, with grazing and cropping being the most common land uses. Based on the gross value of agricultural production in the Riverina, the top commodities are wheat (\$760.2 million), cattle and calves (\$336.2 million) and poultry (\$310.5 million). Together, these commodities account for 39.2% of the region's \$3.59 billion worth of agricultural output (DAFF, 2025).

Biophysical Strategic Agricultural Land

Biophysical Strategic Agricultural Land (BSAL) is land with high quality soil and water resources capable of sustaining high levels of productivity. BSAL plays a critical role sustaining the State's agricultural industry. No BSAL is mapped within or near the Project Site (NSW Government, 2014).

6.10.3. Potential impacts

Potential land use impacts relevant to the Project include:

- Construction
 - Land use conflict with existing or adjacent activities – primarily due to noise, visual and traffic impacts associated with earthworks.
 - Land impact through physical impacts such as installation of infrastructure, erosion or contamination risks.
- Operation
 - Land use conflict with existing or adjacent activities
 - Land degradation, through physical impacts such as weed ingress or contamination risks.

Compatibility and conflicts: Land Use Conflict Risk Assessment

A Land Use Conflict Risk Assessment (LUCRA) was undertaken in accordance with the DPI *Land Use Conflict Risk Assessment Guide* (DPI, 2011). This assessment aims to identify and rank potential land use conflicts to ensure they are adequately managed. The risk ratings are rated from 1 to 25 with the combination of the probability of the event occurring and the consequence of the event occurring determining the risk rating. It is not linear in nature.

The risk rating in Table 6-49 has been determined using probability and consequence as shown in Table 6-46. (Table 6-47 and Table 6-48 provide definitions for the different ratings of probability and consequence respectively).

Table 6-49 Table 6-49 furthermore provides a description of risk before and after the application of mitigation measures.

Table 6-46 LUCRA Risk Rating Matrix

Probability	A	B	C	D	E
Consequence					
1	25	24	22	19	15
2	23	21	18	14	10
3	20	17	13	9	6
4	16	12	8	5	3
5	11	7	4	2	1

Table 6-47 Probability: descriptor that scores the likelihood of the consequence happening

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

Table 6-48 Consequence: description of the measure of consequence

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

Table 6-49 LUCRA assessment of the Corowa BESS including consideration of mitigation options

Identified Potential Conflict	Risk Rating		Management Strategy	Revised Risk Rating	
Agriculture					
Agricultural expansion (land opportunities)	C5	4	The Project would result in the loss of a small proportion of active agricultural land equating to the Development Footprint.	C5	4
Contaminated surface water runoff	B3	17	Implementation of soil and water management plan and an erosion and sediment control plan would minimise the potential impact.	D4	5
Weed and pest control	A3	20	Implementation of pest and weed management plan during construction and operation phases.	D4	5
Rural residential					
Dust	A3	20	Dust generated during the construction and decommissioning stages to be managed using water cars when required. Dust is not expected to generate a significant land use conflict during operation.	D4	5
Visual amenity	D3	9	Additional planting would be undertaken despite very low visual risks.	D5	2
Noise	C3	13	Noise generated during construction and decommissioning stages would be minimised through the implementation of mitigation measures. Where regular practices are incorporated into operation, noise is not expected to generate a land use conflict. Noise studies have been undertaken and have been shown to be compliant in operation for all non-associated receivers.	C4	8
Utilities					
Fire/Bushfire	C1	22	Implementation of a Bush Fire Emergency Management and Evacuation Plan and a APZ would significantly reduce the probability of the BESS operation starting a fire or bushfire damaging the BESS infrastructure or escaping onto neighbouring properties.	D3	9
Traffic generation and disruption	C4	8	Traffic generation and disruptions during construction and decommissioning stages are considered likely, however, the impact	C4	8

Identified Potential Conflict	Risk Rating		Management Strategy	Revised Risk Rating	
			would be temporary and able to be managed in the TMP. Traffic is not to generate a land use conflict during operation.		
Mining					
Mining land use	E5	1	The Project would temporarily remove the Development Footprint from possible exploration and mining activities for the life of the BESS. There are no current mineral exploration titles for the Project Site. After decommissioning, the BESS infrastructure would be removed and the site made available for alternative land uses if desired.	D5	2
Environmental Protection					
Direct impact Clearing vegetation	D4	5	No high-quality native vegetation (including hollow-bearing trees) will be cleared for this Project.	E5	1
Direct impact Habitat loss	C4	8	No threatened species or threatened species habitat will be impacted by the Project.	E5	1
Other; transport, reserves. The site is small, and the construction, operation and decommissioning activities are considered unlikely to affect these nearby land uses.					

Construction and operation

Agriculture

The potential impacts of the Project on agriculture are detailed below with respect to *Primefact 1063 Infrastructure proposals on rural land* (DPI, 2013).

Resource loss and fragmentation

- Agricultural activities within the Development Footprint would cease upon the commencement of construction. Agricultural activities would be permitted within the remainder of the Project Site throughout the construction and operational phases of the Project.
- The Project would result in the temporary loss of approximately 10.34ha (BESS fenced area) of agricultural land for the life of the BESS (approximately 20 years). This impact is considered negligible due to the small size of the Project Site and the fact that it would not materially reduce the availability of adjoining land for primary production within the region.

- The Project is not located on land that is of higher quality LSC than the surrounding lands. It is not classified as BSAL. As such there would be no losses of uniquely high value land to the locality during the construction and operation of the BESS.
- The Project Site (where the BESS infrastructure would be located) constitutes 10.34ha of the 283,700ha (0.00003%) of Class 3 land within the Federation LGA.

Impacts on farming operations and livestock

- Agricultural use of the land would continue post construction on the remainder of the Project Site (outside of the fenced Development Footprint).
- During the operational phase, the Project will not restrict access or interfere with agricultural land uses on surrounding properties. Existing land uses in the area are well understood, and the BESS is considered a compatible use with minimal potential for land use conflicts.
- Best practice wastewater management, fuel storage and refuelling and chemical handling would be stringently applied to prevent soil and water pollution.
- Impacts on soil and erosion risks are assessed in 6.9, impacts on downstream water quality are assessed in 6.8 and impacts on local air quality are assessed in 7.3. These assessments conclude that the Project would not be likely to adversely affect land use or activities on neighbouring properties or elsewhere in the locality, subject to the identified mitigation measures.

Increased weed, biosecurity and bushfire risks

- Biosecurity risks can arise from the increased movements of vehicles, machinery, and personnel within the Development Footprint, particularly during construction and decommissioning. Weed seeds may be transported on vehicle tyres, undercarriages, and staff clothing, creating a potential for weed spread. Restricting vehicle and machinery movements to established access tracks throughout all phases, combined with implementing weed hygiene measures, will significantly reduce the risk of seed dispersal.
- Risk of increasing pest animals (cats and foxes) at the site during operation would be managed by ensuring putrescible waste is covered and removed regularly. Targeted pest management during the operational phase of the Project would control cat, rabbit and fox numbers. Resources and cover for pest species would be reduced, because of the Project.
- Developing a Weed Management Plan for all phases of the Project, in line with Local Land Services requirements, would support effective weed control throughout the Project lifecycle, including rehabilitation.
- Prior to commencement of construction, representative soil samples would be gathered as part of a specialist soil survey to establish baseline data on the existing agronomic characteristic of the soil. The survey would include sampling for full soil nutrient balance, nutrient store (plant available, exchangeable and total) for all major minerals and trace minerals, acidity, organic matter, soil texture.

Rural residential

Residences near the Project Site or along the access route may experience temporary impacts such as noise, dust, and increased traffic during construction. These effects will be short-term and managed through mitigation measures, including dust suppression and traffic management plans. During operation, site activities and traffic will be minimal compared to construction, making significant noise or dust impacts unlikely.

Potential impacts to residences during construction and operation are best managed through consultation and mitigation measures, as identified in Section 6.3.7, Section 6.6.6 and Section 6.7.7.

Mining

There are no current mineral exploration titles for the Project Site.

Other land uses

During construction and operation of the BESS, there is unlikely to be any significant impacts on other land uses including:

- Industry and commercial use (transmission line) – minimal impact is anticipated during the construction to the Substation, consultation with Essential Energy would be undertaken.
- Crown Land – there is no Crown land intersecting the Development Footprint
- Irrigation infrastructure – there is a drainage channel located at the southern end of the Project Site, adjacent to Brockmans Road.

It is unlikely that any other potential land uses would impact on the BESS development.

Decommissioning

The potential impacts of the Project during decommissioning on surrounding land uses are considered manageable with the mitigation measures outlined in this EIS. Given the Project's relatively low disturbance to soil surfaces, it is regarded as fully reversible. Following decommissioning, a comprehensive rehabilitation program will be implemented, including monitoring to ensure successful restoration of the site to its pre-existing condition. All above-ground and below-ground infrastructure will be removed, enabling the resumption of agricultural land uses.

Impacts on surrounding land uses are most relevant to agricultural activities; however, existing and future agricultural uses within the Development Footprint or adjacent areas are not expected to be adversely affected due to the Project's reversible nature. BESS infrastructure will be dismantled and removed from the compacted gravel hardstand in consultation with the landowner. Once the hardstand is removed, topsoil will be reinstated, and the area revegetated.

A detailed Rehabilitation Plan will be developed and implemented as part of decommissioning activities, with objectives to restore land capability, promote vegetation recovery, and ensure long-term sustainability of the site. The Rehabilitation Plan would include the following:

- Measures and procedures to returning the land to its pre-development capability and (where practicable) improve the current state of the land
- Soil resource management
- Landform and land use areas
- Development of completion criteria and monitoring reporting.

The Rehabilitation Plan will be informed by soil data obtained from baseline nutrient surveys conducted prior to construction.

Impacts during decommissioning for the other surrounding land uses would be similar to construction and operation, refer above.

Cumulative impacts

Cumulative impacts relating to land compatibility have been assessed in Section 7.4 and appropriate mitigation strategies pertinent to each impact has been captured within the body of the EIS.

6.10.4. Mitigation measures

Table 6-50 Safeguards and mitigation measures to manage land use compatibility

ID	Mitigation measures	Project phase
LU01	A Revegetation and Rehabilitation Plan is to be prepared in consultation with NSW Department of Primary Industries prior to decommissioning to return the Project Site to safe and productive agricultural land, as far as practical.	Decommissioning
LU02	Above ground and below ground cabling and infrastructure would be removed, where practical and in agreement with the host landholder.	Decommissioning
LU03	An agronomic soil survey would be undertaken post decommissioning to inform soil nutrient amelioration prior to revegetation.	Decommissioning
LU04	Land forming would return the site to a stable, safe and non-polluting state suitable for agricultural use or alternative land uses.	Decommissioning

6.11. Social and economic impacts

Lecroma was appointed to prepare a Social and Economic Impact Assessment (SEIA) for the Project. The assessment responds to the SEARs (provided in full in Appendix A). The full assessment is attached to this document, as Appendix E12 and summarised below.

6.11.1. Approach

The purpose of the SEIA was to provide a systematic evaluation of the potential social and economic impacts of the Project and offer recommendations to enhance benefits and minimise adverse outcomes across the Project lifecycle.

The SEIA methodology follows the NSW DPHI Social Impact Assessment Guideline for State Significant Projects and integrates Lecroma's established evaluation framework based on the Sustainable Livelihoods and Resilient Communities approaches.

The aims and objectives of the SEIA included:

- Identification and analysis of the potential social and economic changes against baseline conditions resulting from the Project, including impacts on local community wellbeing, amenity, land use, employment, and economic activity
- Assessment of the implications for local services, infrastructure, and the rural character of Corowa and surrounds
- Identification of stakeholder and community concerns, for example in relation to fire and other hazards, traffic, and noise; and the development of appropriate and justified responses (e.g. avoidance, mitigation and enhancement measures), and identification and explanation of residual social impacts
- Proposing arrangements to monitor and manage residual social impacts, including unanticipated impacts, over the life of the Project
- Informing decision-making by the Minister for Planning by providing evidence-based recommendations to enhance positive social and economic outcomes and mitigate adverse impacts, in accordance with the requirements of the EP&A Act and relevant planning frameworks.

The assessment was informed by a combination of desktop research, field engagement by specialists, and primary consultation with community members, local stakeholders, and government representatives. It established a detailed social and economic baseline and applied impact prediction, evaluation, and management processes to ensure potential risks are addressed, and local benefits are maximised.

Note, relevant socio-economic cumulative impacts are considered in Section 7.4 and are not duplicated here.

6.11.2. Social locality and socio-economic baseline profile

The NSW SIA Guideline defines the social locality as where people are likely to experience social impacts as a result of a proposed project. For this impact assessment, the Project's social locality, centred on Corowa, is shown in Figure 6-63.



Figure 6-63 Project's social locality (Lecroma, 2025)

Key profile data for the social locality, including demographic, industry and employment data is summarised in Figure 6-64. Being primarily defined by a 50-minute drive from the Project area, the social locality boundary cuts through several towns. This is accounted for in the statistics.

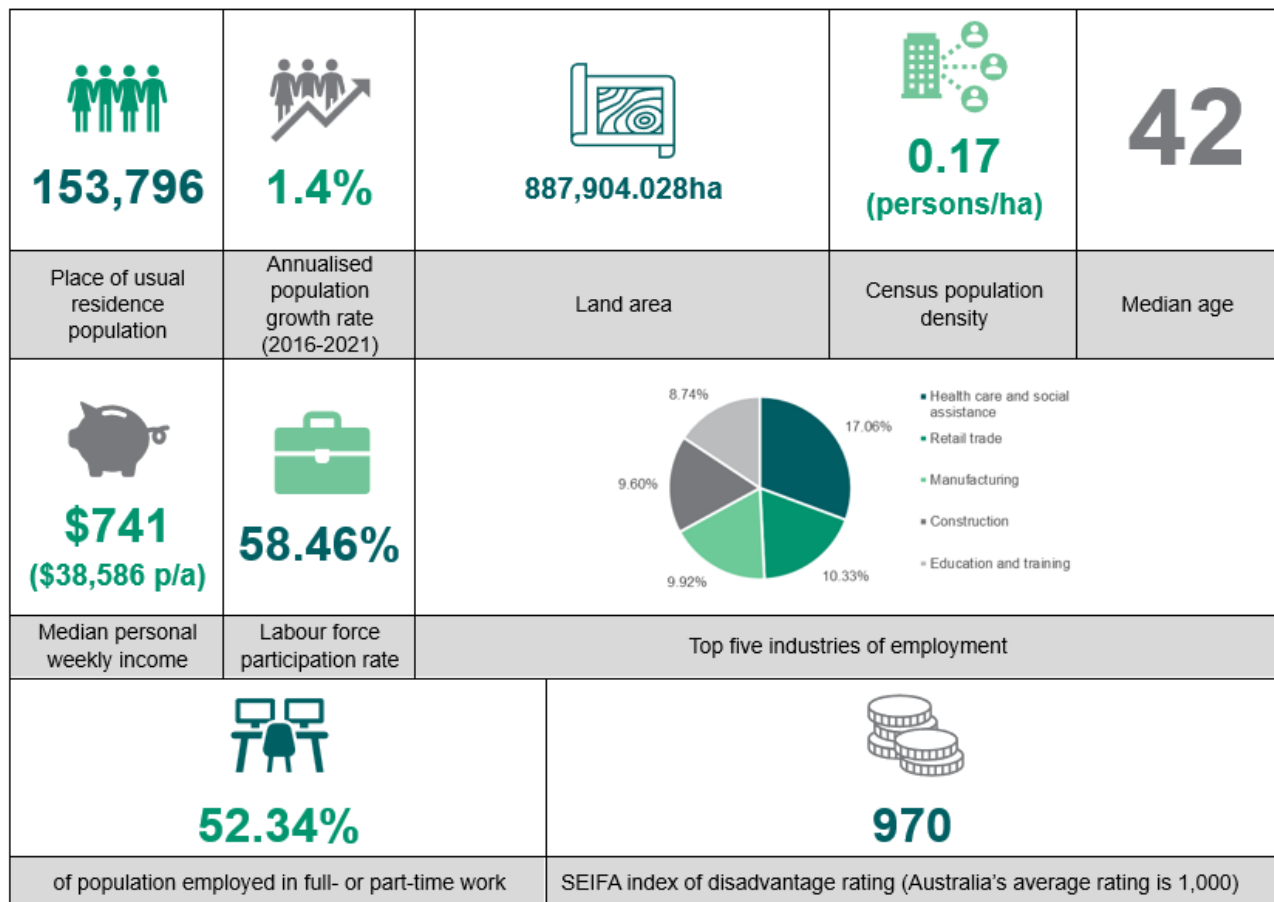


Figure 6-64 Key profile data for the social locality (Lecroma, 2025)

Human capital

As at the 2021 Census, Corowa has a population of 5,595, with 48.5% male and 51.5% female residents, and a median age of 42 years. The community shows limited cultural diversity, with 43.9% reporting English ancestry, and 43.4% reporting Australian ancestry. The median weekly household income of \$1,130 reflects moderate economic capacity and there is a high rate of home ownership across the 5,080 dwellings.

Social capital

Social life in Corowa is centred on Main Street / Sanger Street, which features cafes, pubs, restaurants and the RSL which act as daily meeting places. There are a range of recreational facilities in Corowa, including the Corowa Aquatic Centre, several sporting ovals and sports clubs as well as the golf club and bowls club.

Economic capital

There are several employment options within the social locality, with an estimated 59.1% of working residents commuting less than 10km to work. Refer to the table below for a summary of employment statistics for the social locality.

Table 6-51 Employment statistics for Corowa (Lecroma, 2025)

Aspect	Number of people	Percentage of population
Participation in the labour force		
In the labour force	70,629	56.1
Not in the labour force	47,738	37.9
Not stated	7,592	6
Employment status		
Work full-time	41,142	32.7
Work part-time	24,783	19.7
Away from work	4,704	3.7
Unemployed	3,006	2.4
Occupation		
Professionals	12,384	17.6
Technicians and trades workers	10,623	15.1
Community and personal service workers	9,553	13.5
Managers	8,853	12.6
Labourers	8,386	11.9
Industry of employment		
Health care and social assistance	12,051	17.1
Retail trade	7,298	10.3
Manufacturing	7,005	9.9
Construction services	4,268	6
Building construction	1,638	2.3

Physical infrastructure

Corowa offers a suite of local facilities, including motels, cafés, an IGA, Woolworths, and a post office. Residents can access healthcare from the Corowa Health Service and Redgum Medical Group and Corowa District Hospital. The town comprises one early learning centre, a preschool, three primary schools, a high-school and TAFE NSW facilities. Albury-Wodonga is the largest regional centre near Corowa, which serves as a large commercial hub.

There are a range of short-term accommodation options in Corowa and surrounding areas, including caravan parks and motels (refer to Table 6-52). While the combined capacity is difficult to determine via desktop analysis, there are comfortably 300+ 'beds' available that could potentially house workers during the Project's construction stage.

Table 6-52 Accommodation facilities identified (Lecroma, 2025)

Accommodation provider	Location	Estimated drive time to project site	Estimated capacity
Rivergum Holiday Park	Corowa, NSW	4 min	17 guests, 2 cabins, 1 cottage, and 1 villa
Lone Pine Motel	Corowa, NSW	4 min	30 guests, 9 rooms
Federation Motel Resort	Corowa, NSW	4 min	30 guests, 20 rooms
Corowa Gateway Motel	Corowa, NSW	5 min	23 guests, 12 rooms
Corowa Bindaree Holiday Park	Corowa, NSW	5 min	40 guests, 13 rooms
CIRCA 1936 Art Hotel	Corowa, NSW	6 min	8 guests, 4 rooms
Motel Meneres	Corowa, NSW	6 min	24 guests, 7 rooms
Statesman Motor Inn	Corowa, NSW	6 min	52 guests, 26 rooms
Greenacres Motel	Corowa, NSW	7 min	25 guests, 8 rooms
Heritage Motor Inn Corowa	Corowa, NSW	7 min	19 guests, 7 rooms
Ball Park Caravan Park	Corowa, NSW	8 min	2 chalets, with camp sites (number not published)
Riverside Motel & Marina	Wahgunyah, VIC	9 min	10 guests, 5 rooms
Corowa Golf Club Motel	Corowa, NSW	11 min	24+ guests, 8 rooms
Tuileries at De Bortoli Rutherglen	Rutherglen, VIC	12 min	12 guests, 4 rooms
Poachers Paradise Motel	Rutherglen, VIC	13 min	24 guests, 12 rooms
Wine Village Motor Inn	Rutherglen, VIC	13 min	40 guests, 18 rooms
Must Love Dogs B&B	Rutherglen, VIC	13 min	6 guests, 2 rooms
Motel Woongarra	Rutherglen, VIC	13 min	30 guests, 12 rooms
The Victoria Hotel Rutherglen	Rutherglen, VIC	13 min	20 guests, 8 rooms
Wahgunyah Motel	Wahgunyah, VIC	15 min	32 guests, 10 rooms
Howlong Motel	Howlong, NSW	21 min	20 guests, 8 rooms
Howlong Caravan Park	Howlong, NSW	22 min	50+ guests, cabins & powered sites

Howlong Golf Resort	Howlong, NSW	23 min	60+ guests, 25 rooms
Tasman Holiday Parks – Lake Mulwala	Mulwala, NSW	28 min	108 guests, 26 cabins
Tasman Holiday Parks – Lake Mulwala	Mulwala, NSW	28 min	208 guests, 32 cabins
Ashleigh Court Motor Inn	Mulwala, NSW	31 min	38 guests, 14 rooms
DBJ Holiday Units	Mulwala, NSW	31 min	16 guests, 3 villas
Sun Country Lifestyle Park	Mulwala, NSW	31 min	20 guests, 5 cabins
Mulwala Resort	Mulwala, NSW	35 min	6+ rooms, (capacity not published)
Club Mulwala Resort	Mulwala, NSW	36 min	25 guests, 11 rooms
Paradise Palms	Mulwala, NSW	34 min	30 guests, 10 rooms
Lake Mulwala Boatel	Mulwala, NSW	35 min	96 guests, 19 apartments
Kennedy Holiday Villas	Mulwala, NSW	33 min	22 guests, 4 villas
Wangaratta Caravan & Tourist Park	Wangaratta, VIC	33 min	100+ guests, cabins & sites
Lake Mulwala Hotel	Mulwala, NSW	33 min	32 guests, 13 rooms
Royal Mail Hotel Mulwala	Mulwala, NSW	34 min	15 guests, 6 rooms
Capricorn Motor Inn	Mulwala, NSW	36 min	63 guests, 20 rooms
Ryley Motor Inn	Wangaratta, VIC	36 min	35 guests, 12 rooms
Parkview Motor Inn	Wangaratta, VIC	36 min	30 guests, 12 rooms
Quest Wangaratta	Wangaratta, VIC	37 min	80+ guests, 40 apartments
Wangaratta Motor Inn	Wangaratta, VIC	38 min	60 guests, 21 rooms
Quality Hotel Wangaratta Gateway	Wangaratta, VIC	38 min	130 guests, 78 rooms
The Sebel Yarrawonga Silverwoods	Yarrawonga, VIC	38 min	64 guests, 32 rooms
Terminus Hotel Yarrawonga	Yarrawonga, VIC	39 min	18 guests, 9 rooms
Yarrawonga Riverlands Tourist Park	Yarrawonga, VIC	42 min	60 guests, 14 rooms
Golden Heritage Accommodation	Beechworth, VIC	44 min	24 guests, 6 apartments

Freeman on Ford	Beechworth, VIC	46 min	30 guests, 12 rooms
Glenrowan Kelly Country Motel	Glenrowan, VIC	46 min	30 guests, 10 rooms
Beechworth Carriage Motor Inn	Beechworth, VIC	47 min	30 guests, 10 rooms
Armour Motor Inn	Beechworth, VIC	48 min	20 guests, 6 rooms
Beechworth Lake Sambell Caravan Park	Beechworth, VIC	48 min	60+ guests, cabins & sites
Linaker Art Deco Motel	Beechworth, VIC	49 min	35 guests, 12 rooms
Beechworth on Bridge Motel	Beechworth, VIC	49 min	40 guests, 12 rooms
Glenrowan Tourist Park	Glenrowan, VIC	50 min	40+ guests, cabins & powered sites

6.11.3. Social Impact Assessment

This section assesses the anticipated changes to the current social baseline should the Project proceed and evaluates the related social impacts.

Based on direct community consultation, desktop research into similar projects and community demographics, and by drawing on the other independent technical assessment conducted for the EIS, seventeen (17) potential social impacts were identified for the Project (refer to Table 6-53).

Table 6-53 Potential social impacts and their significance (Lecroma, 2025)

Impact	Social impact category		Evaluated significance
1. Economic benefits for the social locality and region		Livelihoods	Very high
2. Electricity reliability and prices		Livelihoods	Very high
3. Accommodation and housing		Way of life; Community	High
4. Temporary population changes		Community; Way of life	Medium
5. First Nations people and culture		Culture	Medium
6. Noise and light pollution		Surroundings and social amenity	Medium
7. Roads and traffic		Accessibility; Way of life	Medium
8. Landscape character and visual amenity		Surroundings and social amenity	Medium
9. Fire and other hazards		Surroundings and social amenity	Medium

10. Community cohesion and mental well-being		Community	Low
11. Access to local services		Accessibility	Low
12. Land values and insurance		Livelihoods	Low
13. Waste and decommissioning		Surroundings and social amenity	Low
14. Flood and storm water risk		Surroundings and social amenity	Low
15. Biodiversity / ecological		Surroundings and social amenity	Low
16. Contamination / soil		Surroundings and social amenity	Low
17. Land use and rural livelihoods		Livelihoods	Low

Refer to Table 6-54 for the social impact evaluation and response measures proposed for potential construction and operational impacts.

Table 6-54 Social impact evaluation and response measures proposed

NSW Guideline social impact category	Impact	Nature: Positive / negative / mixed	Timing / duration: Construction (C) Operation (O) Decommissioning (D)	Perceived significance	Evaluated			Most affected stakeholder group/s	Proposed response measures including technical impact assessment recommendations	Residual impact significance
					Likelihood	Magnitude	Significance			
Livelihoods	1. Economic and other benefits for the social locality and region	Positive	C, O	High	Almost certain	Major	Very high	All	Lecroma recommendations: 2, 2.1-2.2, 3, 3.1-3.8, 4, 4.1-4.4, 5, 5.1-7	Very high
Livelihoods	2. Electricity reliability and prices	Mixed	O	Medium	Almost certain	Major	Very high	All	Lecroma recommendations: 6.3	Very high
Way of life; Community	3. Accommodation and housing	Mixed	C, O	High	Likely	Moderate	High	- Local business / industry groups - Government bodies, regulators - Relevant NSW Members - Regulators and authorities	Lecroma recommendations: 3, 3.1-3.8	Medium
Community; Way of life	4. Temporary population changes	Mixed	C, O	Low	Almost certain	Minor	Medium	Near neighbours (affected localities)	Lecroma recommendations: 4, 4.2, 5, 5.1, 5.7	Medium
Culture	5. First Nations people and culture	Mixed	C, O	Low	Likely	Moderate	Medium	Traditional owners, Indigenous communities, Heritage representatives	Lecroma recommendations: 2, 2.1, 3.1, 4, 5.4 Aboriginal Cultural Heritage Assessment recommendations: - After receiving approval, proceed with care and follow the finds procedures: If workers unexpectedly find any Aboriginal cultural items, they must stop work in that spot and follow the Unanticipated Finds Protocol in Appendix 4. If workers find human remains, they must follow the Skeletal Remains Protocol in Appendix 5 of the ACHA. - Keep all disturbance inside the approved Development Footprint. If the Project needs to expand outside the assessed area, the Proponent must first carry out more archaeological assessment. - Train all workers before ground disturbance begins: Ensure all staff and contractors complete a cultural heritage induction. The induction must teach them how to recognise Aboriginal artefacts (see Appendix 6 of the ACHA), what the National Parks and Wildlife Act requires, and how to follow the Unanticipated Finds Protocol and the Skeletal Remains Protocol.	Low

NSW Guideline social impact category	Impact	Nature: Positive / negative / mixed	Timing / duration: Construction (C) Operation (O) Decommissioning (D)	Perceived significance	Evaluated			Most affected stakeholder group/s	Proposed response measures including technical impact assessment recommendations	Residual impact significance
					Likelihood	Magnitude	Significance			
Surroundings and social amenity	6. Noise and light pollution	Negative	C, O	Medium	Likely	Minor	Medium	Near neighbours (affected localities)	Lecroma recommendations: 5, 5.1, 5.3, 6.2 Noise and Vibration Assessment recommendations: - Construction stage: - Maintain all plant and equipment properly to keep noise as low as possible. - Avoid unnecessary noise during manual work and equipment use. - Switch off equipment when it is not being used for long periods. - Build good relationships with neighbours from the start and keep them informed throughout construction. - Respond quickly and seriously to complaints and take steps to prevent repeat issues. - Use a clear complaints management procedure to record, investigate, and address noise issues. - Manage noisy work near homes (R2, R3, R4, R5, New1-New7) by limiting work hours where practical, scheduling the noisiest activities between 10am-3pm, with a lunch break if needed, consulting residents about suitable respite periods and notifying them in advance when short-term higher noise levels are expected. - Operation stage: - Install a 3.5-metre-high solid noise barrier along the western side of the MVPS units and BESS container area (see Figure 2 on page 25 of the report). - Build the barrier from a durable, solid material (e.g. steel, masonry, fibre-cement, acrylic, or polycarbonate) with sufficient mass to block noise. - Seal all joints, gaps, and penetrations airtight to maintain the barrier's acoustic performance. - Ensure the barrier touches the ground with no gaps, filling any openings to stop noise leaking underneath. - Seek detailed design advice from an acoustic consultant before finalising construction plans, to ensure the barrier meets noise requirements.	Low
Accessibility; Way of life	7. Roads and traffic	Negative	C, O, D	Medium	Likely	Minor	Medium	Near neighbours (affected localities)	Lecroma recommendations: 5, 5.1, 5.3, 5.5, 6.1-6.2 Traffic Impact Assessment recommendations: - Manage construction traffic responsibly: Avoid sending heavy vehicles through the area during school bus peak times to reduce risks to vulnerable road users. Use only the approved transport routes for all Project-related traffic. Ensure all construction vehicles follow the agreed traffic schedules set with the authorities. Obtain all required permits before doing any work in the road reserve. - Prepare and implement a Traffic Management Plan (TMP) during detailed design, in consultation with Transport for NSW and Federation	Low

NSW Guideline social impact category	Impact	Nature: Positive / negative / mixed	Timing / duration: Construction (C) Operation (O) Decommissioning (D)	Perceived significance	Evaluated			Most affected stakeholder group/s	Proposed response measures including technical impact assessment recommendations	Residual impact significance
					Likelihood	Magnitude	Significance			
									Council. Include mitigation measures in the TMP to ensure construction traffic has minimal impact on road safety and capacity. - Protect the condition and safety of local roads by conducting a pre-construction road condition survey, identifying the state of affected road sections. Monitor and maintain these roads during construction, repairing any defects caused by Project vehicles. Carry out a post-construction survey to ensure the roads are left in similar or better condition than before. - Keep local residents informed: Notify neighbours about the timing of major deliveries, especially those requiring traffic control or temporary access restrictions. - Reduce risks from heavy vehicles and oversize loads: Prevent heavy vehicle travel during school bus operating periods and schedule oversize/overmass (OSOM) vehicle trips to avoid overlapping with other OSOM movements in the region. - Construct required road upgrades before construction begins: Build a Channelised Right Turn (CHR(s)) and Basic Left turn (BAL) treatment at the Honour Avenue / Bullecourt Road intersection. Construct the new site access as designed.	
Surroundings and social amenity	8. Landscape character and visual amenity	Negative	C, O, D	Medium	Likely	Minor	Medium	- Near neighbours (affected localities) - Community / interest groups	Lecroma recommendations: 5, 5.1, 5.3, 6.2 Landscape and Visual Impact and Visual Assessment recommendations: - Plant screening vegetation to block views of the Project: Plant new screening vegetation along the northern and southern boundaries to reduce visibility of the BESS from nearby roads and properties. Use fast-growing small trees, shrubs and low vegetation to create a natural-looking screen. Choose plant species that match the native vegetation already found on site. - Design planting so it fits the existing landscape: Keep the planting consistent with the surrounding rural landscape character. Select species that are typical for the Corowa area and suitable for local soil and climate conditions. Arrange the planting so it does not block important wider landscape views. - Avoid unnecessary clearing: Keep existing vegetation wherever possible, replant any vegetation lost during construction and allow natural vegetation to regenerate in disturbed areas. - Use locally native plants to maintain the area's natural character and improve habitat for wildlife. Prioritise species that blend with the surrounding ecological community. - Ensure screening integrates with existing infrastructure: Make planting compatible with the existing substation vegetation so all screening appears cohesive. Use screen planting to reinforce existing visual barriers around the substation and BESS.	Low

NSW Guideline social impact category	Impact	Nature: Positive / negative / mixed	Timing / duration: Construction (C) Operation (O) Decommissioning (D)	Perceived significance	Evaluated			Most affected stakeholder group/s	Proposed response measures including technical impact assessment recommendations	Residual impact significance
					Likelihood	Magnitude	Significance			
									Although the report finds visual impacts to be Very Low from public viewpoints and mostly Nil from private receivers, still install proposed screening to minimise visibility further.	
Surroundings and social amenity	9. Fire and other hazards	Negative	O	High	Possible	Moderate	Medium	- Near neighbours (affected localities) - Local business / industry groups - Government bodies, regulators	Bushfire Assessment Report recommendations: - Construction and design: Design and build all structures to meet BAL-29 bushfire construction standards in AS 3959:2018. Avoid placing any buildings or infrastructure in areas that would exceed BAL-29, such as BAL-40 or Flame Zone. Ensure buildings (including the switch room and operations facility) meet National Construction Code requirements where applicable. - Asset Protection Zones (APZ): Establish an APZ of 10-25 metres around the BESS and all permanent and temporary buildings. Start the APZ from the outermost asset and extend it outward (adjusting if the final design layout changes). Maintain APZs permanently and manage them according to PBP 2019 standards. Keep vegetation in the APZ low and separated to reduce heat, flame, and ember attack. This includes keeping grass below 100 mm, removing leaf litter and debris, pruning tree branches up to 2 metres above ground, making sure tree canopies do not touch, and avoiding shrubs under trees and limiting shrubs to <10% cover. - Access and egress: Provide safe, two-way, all-weather vehicle access from Whitehead Street. Design all internal and perimeter roads so fire trucks can enter, turn around, and exit safely. Build perimeter roads at least 8 metres wide (including cleared shoulders) so two fire trucks can pass. Avoid dead-end roads where possible; if unavoidable, include a compliant turning circle. Keep road gradients, bends, and vertical clearances within PBP 2019 limits. Ensure emergency vehicles can reach the static water supply within 4 metres. - Water supply and utilities: Provide a static water supply for firefighting, designed and maintained to meet PBP 2019 requirements. Use metal above-ground pipes and metal or concrete water tanks to reduce ignition risk. Where possible, place electrical transmission lines underground; if not possible, ensure overhead lines meet vegetation-clearance standards. Avoid using reticulated or bottled gas unless designed in accordance with AS/NZS 1596. - Emergency management: Prepare a Bush Fire Emergency Management and Evacuation Plan (BFEMEP) before construction begins and incorporate fire-monitoring and control systems into the Battery Management System. - Reassess bushfire compliance if the Project's design changes significantly from the assumptions used in the report. The Preliminary Hazard Analysis recommendations:	Low

NSW Guideline social impact category	Impact	Nature: Positive / negative / mixed	Timing / duration: Construction (C) Operation (O) Decommissioning (D)	Perceived significance	Evaluated			Most affected stakeholder group/s	Proposed response measures including technical impact assessment recommendations	Residual impact significance
					Likelihood	Magnitude	Significance			
									- Use the results of the PHA to prepare the Emergency Response Plan and Fire Safety Study. - Use the results of the PHA to prepare a BFEMEP that sets out detailed steps to prevent fires and reduce the impact of any fires that start; lists work activities that must not occur on total fire ban days; confirms there is enough fire-fighting equipment, access and water available; sets clear rules for storing and maintaining fuels and other flammable materials; requires notifying the local NSW RFS Fire Control Centre before doing any work during the bushfire danger period that could ignite surrounding vegetation, to check weather conditions are suitable; and includes appropriate bushfire emergency management and evacuation procedures. - Only buy a BESS from a manufacturer (OEM) that has done and documented full-scale UL 9540A fire testing, showing that thermal runaway does not spread between neighbouring BESS units. - After choosing the BESS OEM, complete the detailed BESS design so it complies with the requirements in Section 3.2 of the report, including separation distances, UL 9540A test report recommendations and OEM recommendations. - If the Proponent decides to use the Tesla Megapack, implement all recommendations from the Victorian Big Battery Fire Statement of Technical Findings (Victorian Government, 2021).	
Community	10. Community cohesion and mental well-being	Negative	C, O	Low	Unlikely	Minor	Low	- Near neighbours (affected localities) - Community / interest groups	Lecroma recommendations: 6, 6.1-6.3	Low
Accessibility	11. Access to local services	Mixed	C	Low	Possible	Minor	Low	- Project hosts - Near neighbours (affected localities) - Community / interest groups	Lecroma recommendations: 2, 2.2, 3, 3.5-3.8, 5.5-5.7	Low
Livelihoods	12. Land values and insurance	Negative	O	Medium	Unlikely	Minor	Low	Near neighbours (affected localities)	Lecroma recommendation: 6.3	Low

NSW Guideline social impact category	Impact	Nature: Positive / negative / mixed	Timing / duration: Construction (C) Operation (O) Decommissioning (D)	Perceived significance	Evaluated			Most affected stakeholder group/s	Proposed response measures including technical impact assessment recommendations	Residual impact significance
					Likelihood	Magnitude	Significance			
Surroundings and social amenity	13. Waste and decommissioning	Negative	C, D	Medium	Possible	Minor	Low	- Government bodies, regulators - Near neighbours (affected localities) - Community / interest groups - Traditional owners, Indigenous communities, Heritage representatives	- Decommission the Project according to a decommissioning plan. This plan is likely to be developed closer to Project's end of life as options for future project infrastructure recycling pathways evolve over the next 20+ years. - Waste management plan is a post approvals output pre-construction stage, to be developed in consultation with the head contractor/s and original equipment manufacturers (OEMs) when appointed.	Low
Surroundings and social amenity	14. Flood and storm water risk	Negative	C, O, D	Low	Unlikely	Minor	Low	- Near neighbours (affected localities) - Local business / industry groups - Government bodies, regulators	Flood study recommendations: - The project site will be elevated to achieve a 500 mm freeboard above flooding from the 1% annual exceedance probability storm event. - Detailed flood modelling outputs indicate that there will be no offsite impacts on flood depth or velocity. As such, there is no requirement for additional flood mitigation design, scour and erosion controls, beyond the management of stormwater flows emanating from the elevated hardstand.	Low
Surroundings and social amenity	15. Biodiversity / ecological	Negative	C, O	Low	Unlikely	Minor	Low	- Near neighbours (affected localities) - Community / interest groups - Local business / industry groups - Government bodies, regulators - Traditional owners, Indigenous communities,	BDAR recommendations: - Avoid all remnant woodland and Threatened Ecological Community (TEC) vegetation, including PCT 76 Inland Grey Box Woodland, by excluding these areas from the development footprint. - Avoid all hollow-bearing trees and habitat features by clearly excluding them from construction and operational areas. - Clearly demarcate the development footprint and no-go zones using physical markers (e.g. fencing, flagging, poles) before construction to prevent inadvertent impacts on retained vegetation and habitat. - Prepare and implement an Environmental Management System (EMS) that incorporates biodiversity protection measures for construction, operation, and decommissioning. - Implement erosion and sediment control measures in accordance with Landcom Managing Urban Stormwater: Soils and Construction (Blue Book) to protect downstream habitats and water quality. - Minimise vegetation clearing and ground disturbance to the smallest practicable extent and duration. - Maintain habitat connectivity by retaining vegetation corridors and preventing encroachment into retained habitat areas.	Low

NSW Guideline social impact category	Impact	Nature: Positive / negative / mixed	Timing / duration: Construction (C) Operation (O) Decommissioning (D)	Perceived significance	Evaluated			Most affected stakeholder group/s	Proposed response measures including technical impact assessment recommendations	Residual impact significance
					Likelihood	Magnitude	Significance			
								Heritage representatives	• Apply vehicle speed limits and restrict vehicle numbers on site to reduce the risk of fauna strike. • Immediately stop works and notify regulators if any unintended impacts occur to TECs, native vegetation, or threatened fauna. • Undertake biodiversity compliance auditing to confirm adherence to approved mitigation measures and trigger corrective actions if non-compliance occurs. • Consult with relevant authorities if impact thresholds are exceeded and adjust management measures to prevent further impacts. ◦ Apply adaptive management to respond to any unforeseen biodiversity impacts identified during construction or operation.	
Surroundings and social amenity	16. Contamination / soil	Negative	C, O, D	Low	Unlikely	Minor	Low	• Near neighbours (affected localities) • Traditional owners, Indigenous communities, Heritage representatives	Preliminary Site Investigation and Soil Assessment recommendations: • Soil management: - Apply lime to rebalance soil cations, improve soil structure, and increase pore space to enhance water movement through the soil profile. - Apply short-term and medium-to-long-term phosphorus sources to support revegetation and soil rehabilitation. - Rehabilitate soils to establish and maintain soil-stabilising pasture species in all areas not covered by hardstand, tracks, or infrastructure. - Undertake a comprehensive topsoil sampling and analysis program prior to construction to establish baseline soil nutrient conditions. - Repeat soil sampling and analysis at decommissioning to support full rehabilitation and return of land to agricultural use. • Erosion, sediment, and ground disturbance controls: - Prepare and implement a Construction Erosion and Sediment Control Plan (ESCP) and Soil and Water Management Plan (SWMP) in accordance with Landcom Managing Urban Stormwater: Soils and Construction. - Minimise the extent and duration of ground disturbance during construction and decommissioning. - Progressively rehabilitate disturbed areas not required for infrastructure to reduce erosion risk. - Limit topsoil stockpiles to a maximum height of two metres, strip and store topsoil separately, and stabilise stockpiles with groundcover if stored longer than six weeks. - Avoid altering surface water and groundwater regimes to prevent mobilisation of soil salts. • Operational and decommissioning: - Maintain at least 70 per cent groundcover across non-hardstand areas during operation to reduce erosion risk. - Prepare a decommissioning revegetation and rehabilitation plan that includes soil stabilisation and topsoil amelioration (e.g. organic matter incorporation and lime application). • Restore the site to its appropriate agricultural land capability (Class 3) using the soil survey results and relevant NSW and CSIRO guidelines.	Low

NSW Guideline social impact category	Impact	Nature: Positive / negative / mixed	Timing / duration: Construction (C) Operation (O) Decommissioning (D)	Perceived significance	Evaluated			Most affected stakeholder group/s	Proposed response measures including technical impact assessment recommendations	Residual impact significance
					Likelihood	Magnitude	Significance			
Livelihoods	17. Land use and rural livelihoods	Mixed	C, O, D	Medium	Possible	Minor	Low	- Near neighbours (affected localities) - Community / interest groups	- Implement ongoing engagement with neighbouring landholders, particularly farmers, to manage perceptions of land use conflict and provide assurance that traffic and construction activities will not disrupt agricultural operations. - Pending future decisions and approvals for project replacement / repowering options, commit to full decommissioning and rehabilitation of the site to primary production uses, where required, to provide long-term certainty about land restoration and rural livelihood outcomes.	Low

6.11.4. Economic impacts

This section assesses the impact of the Project on the Regional and NSW economy in both the construction and operational phases.

Construction

The Project is expected to create 117 FTE jobs across different employment sectors over the 18-month construction period. The main sectors to be impacted by the Project include:

- Non-residential building construction
- Construction services
- Transport.

Where practicable, the workforce will be drawn from the local region, with the balance sourced from elsewhere. Table 6-55 shows three scenarios for workforce sourcing zones, based on the socio-economic baseline identified for this Project and the residential distribution of the current construction workforce.

Table 6-55 Workforce sourcing zone scenarios

Scenario	Zone 1: Local / near region	Zone 2: Rest of NSW	Zone 3: Rest of Australia
1. Conservative case	30% of the workforce	40% of the workforce	30% of the workforce
2. Base case	60% of the workforce	30% of the workforce	10% of the workforce
3. Optimistic case	80% of the workforce	15% of the workforce	5% of the workforce

Table 6-56 shows the forecasted direct and indirect impact of these workforce numbers on the regional and NSW economy during the 18-month construction stage.

Table 6-56 Construction stage direct and indirect impacts on the regional and NSW economy

Scenario	Direct effect	Supply-chain effect	Consumption effect	Total effect
Construction impacts on the regional economy: Output (\$M)				
Conservative	\$16.773	\$11.400	\$5.556	\$33.729
Base	\$33.546	\$22.799	\$11.112	\$67.458
Optimistic	\$44.728	\$30.399	\$14.816	\$89.944
Construction impacts on the NSW economy: Output (\$M)				
Conservative	\$41.328	\$36.395	\$22.809	\$100.531
Base	\$53.140	\$46.796	\$29.328	\$129.264
Optimistic	\$56.092	\$49.396	\$30.958	\$136.445
Construction impacts on the regional economy: Employment (FTE jobs)				
Conservative	21	25.03	12.51	58.54

Scenario	Direct effect	Supply-chain effect	Consumption effect	Total effect
Base	42	50.06	25.03	117.09
Optimistic	56	66.75	33.38	156.12
Construction impacts on the NSW economy: Employment (FTE jobs)				
Conservative	48.99	74.73	48.78	172.5
Base	63	96.09	62.72	221.8
Optimistic	66.49	101.43	66.21	234.13
Construction impacts on the regional economy: Employment (jobs FTE) in peak gain - year 1				
Conservative	14.00	16.69	8.34	39.03
Base	28.00	33.37	16.69	78.06
Optimistic	37.33	44.50	22.25	104.08
Construction impacts on the NSW economy: Employment (jobs FTE) peak gain - year 1				
Conservative	32.66	49.82	32.52	115.01
Base	42.00	64.06	41.81	147.87
Optimistic	44.33	67.62	44.14	156.09
Construction impacts on the regional economy: Value-added (\$M)				
Conservative	\$6.081	\$4.017	\$2.835	\$12.933
Base	\$12.162	\$8.034	\$5.671	\$25.866
Optimistic	\$16.215	\$10.711	\$7.561	\$34.488
Construction impacts on the NSW economy: Value-added (\$M)				
Conservative	\$14.984	\$13.537	\$11.521	\$40.041
Base	\$19.266	\$17.405	\$14.813	\$51.485
Optimistic	\$20.337	\$18.372	\$15.636	\$54.345

Operation

The Project would employ approximately 1.5 FTE staff. All staff are assumed to reside in the region. Table 6-57 shows the forecasted direct and indirect operational impact of these workforce numbers on the regional and NSW economy.

Table 6-57 Operational stage direct and indirect impacts on the regional and NSW economy

Economy	Direct effect	Supply-chain effect	Consumption effect	Total effect
Operational impacts on the economy: Output (\$M)				
Regional	\$1.823	\$1.261	\$0.437	\$3.522
NSW	\$1.812	\$2.029	\$0.870	\$4.710

Economy	Direct effect	Supply-chain effect	Consumption effect	Total effect
Operational impact on the economy: Employment (jobs FTE)				
Regional	1.50	1.93	0.98	4.42
NSW	1.50	3.13	1.86	6.49
Operational impacts on the economy: Household income (\$M)				
Regional	\$0.226	\$0.217	\$0.086	\$0.529
NSW	\$0.225	\$0.379	\$0.179	\$0.783
Operational impacts on the economy: Value-added (\$M)				
Regional	\$0.641	\$0.467	\$0.223	\$1.331
NSW	\$0.634	\$0.822	\$0.439	\$1.895

Other economic impacts

The Project is likely to have other economic impacts, such as:

- Grid stability and peak-price reduction (arbitrage)
- Energy efficiency and economic value
- Air quality and health benefits
- Fiscal flows, skills, and industry development.

Cost-benefit analysis

A cost-benefit analysis of the Project was conducted using agriculture as an alternative land use for the Project Site. The analysis indicates that the Project will generate a larger overall economic impact than if the Project Site is used for agricultural purposes.

6.11.5. Mitigation measures

Regional projects can strengthen local economies by creating jobs, attracting skilled workers and families, reducing migration to cities, and increasing workforce participation. They offer potential revitalization for inland regions affected by globalisation and structural changes. However, rapid growth in renewable energy projects may lead to short-term challenges such as higher construction wages, worker diversion from other sectors, and increased costs for materials like quarry products and concrete. These impacts depend on workforce sourcing (local, external, DIDO/FIFO) and broader market adjustments.

Overall, while impacts are complex, the projects are likely to bring more positive than negative changes to the region, provided impact management measures are effectively implemented.

Table 6-58 Safeguards and mitigation measures to manage social and economic impacts

ID	Mitigation measures	Project phase
SE1	Incorporate recommendations from independent technical assessments to refine project design and implementation • Continuously review and adapt appropriate design and	Pre-construction

ID	Mitigation measures	Project phase
	management measures to address evolving risks within the surrounding landscape.	
SE2	Implement benefit sharing commitments - Engage the community regularly for feedback and co-design implementation approaches to ensure benefits are fit for purpose and distributed fairly in the Federation Council and broader community. Voluntary Planning Agreement (VPA) negotiations had just commenced with Federation Council at the time of developing this report. - Where relevant, support and align activities with local council economic development plans, such as the Federation Council 'Economic Development Strategy 2021-2025'.	Ongoing
SE3	Post approval, develop and implement a Workforce Accommodation Plan - The plan's aim should be to ensure safe, sufficient and affordable accommodation for the Project's construction workforce while protecting the local housing market, tourism capacity, and enhancing local economic activity. It is a relatively short construction stage (approximately 18 months, peak six months period), which has informed the recommendations below. - Co-design plan with key stakeholders, for example the Federation Council, tourism associations, and accommodation providers. An initial list of these has been developed in Chapter 5. - Prioritise hiring locally (within a 60-minute drive of the site) to reduce pressure on local accommodation and housing requirements. Where practicable, focus on individuals with relevant skillsets or straightforward upskilling needs who already live in the area. Establishing a Local Content Plan and appropriate targets for local procurement has been explored in this SEIA report. Avoid building a temporary construction accommodation facility for this Project in Corowa; it is not warranted due to the relatively short-construction period. Instead, explore partnering with an existing local accommodation or tourism facility operator in the area. For example, run a tender or expressions of interest process to facilitate construction stage accommodation supply (noting peak construction period is forecasted at six months). Coordinate with other proponents to minimise cumulative impacts, namely JBS, as construction stage requirements with JBS project timelines are likely to overlap. Engage early with	Pre-Construction

ID	Mitigation measures	Project phase
	the proposed contractors for engineering, procurement and construction to plan across projects to enhance local employment. Share workforce and accommodation requirement forecasts to avoid concurrent peaks. Reduce impact on other local industry sectors, especially agriculture, manufacturing and food processing. Examples of ways to do this include adopting provider booking protocols comprising rolling six-month and twelve-week work package forecasts (published via online platforms like the Industry Capability Network). Planned major events could also be published via an online calendar or similar communications tools (including social media channels) Provide worker transport via shuttle buses to reduce local road traffic on Whitehead Street. For example, buses could operate between accommodation nodes and the Project site along Whitehead Street. Implement designated parking areas to minimise traffic volumes and associated impacts on neighbours. Consult with housing providers and community services focusing on vulnerable groups, for example Amaranth and the Challenge Foundation (Corowa Branch), seniors, and low-income renters. Monitor early warning indicators such as rent escalation and displacement from short-stay accommodation. Consider mitigation measures including rental support partnerships, caps on private rental uptake by contractors, and the construction stage accommodation camp.	
SE4	Post approval, develop and implement a Local Content Plan and appropriate targets based on regional capability • This SEIA and the ongoing consultation process, coupled with data shared by the Industry Capability Network, has identified a range of local providers that will likely be capable of supporting construction stage activities. Refer to Chapter 7 for further details about what broad localisation target scenarios Lecroma advises is feasible after reviewing available data. • The plan should consider weighting / prioritisation of local hiring for procurement and supply chain matters. Noting the project site's proximity to several major energy projects proposed and nearing construction (see Chapter 8) and the South West Renewable Energy Zone, local capability is likely to increase. • The plan should also consider offering training/upskilling in energy sector construction industries for residents living in the Federation and surrounding LGAs to further increase local capability. This could be done in partnership with other projects and local institutions (e.g. with NSW/VIC TAFEs and Charles Sturt University).	Pre-construction

ID	Mitigation measures	Project phase
	The plan should account for the benefit to local business of the temporary population increase during construction, especially local accommodation providers. This project could be seen as an opportunity to showcase regional lifestyle, liveability, tourism and economic opportunities for those working on the projects to improve longer term local skills retention. The local spend possibilities resulting from temporary workforce increases during construction stage should not be underestimated. The plan could incorporate a deliberate workforce diversity focus that opens meaningful employment pathways for local businesses and workers. This should be balanced with measures to manage potential downsides, such as competition for a limited pool of skilled labour, ensuring the project strengthens rather than strains the local workforce. Diversity isn't only demographic, it includes skills, industries, and training pipelines.	
SE5	Continue consultation with key stakeholder groups throughout the life of the Project • Conduct inclusive community engagement and support initiatives to build social license in Corowa and the social locality and support cohesion between the existing and new populations, particularly during the construction stage. • Offer regular consultation and feedback opportunities, including by supporting local suppliers and businesses in procurement for the construction and operation stages. • Continue consultation with project neighbours, including about project impacts like landscape character and visual amenity, to ensure any impacts are managed in accordance with regulatory and community expectations. • Continue engagement with Bangarang Aboriginal Corporation and other First Nations representatives to ensure positive benefits of the Project are realised and concerns are heard and responded to appropriately. • Continue to collaborate with local authorities and service providers to plan for infrastructure and service upgrades in Corowa and beyond to meet increased demand. • Noting the relatively short construction stage, and that the Proponent is one of many businesses in the area, consider advocating for and/or investing in upgrades to health, education, childcare, and transport infrastructure, for example, by making contributions to road maintenance and upgrades where required. • Facilitate partnerships with local service providers and suppliers to help reduce negative impacts of	Ongoing

ID	Mitigation measures	Project phase
	population increase during the construction stage. Consider timing of major regional events, including agricultural production cycles and tourist flows (peaks/troughs) in construction and operation stage planning.	
SE6	Regularly review strategy and implementation of Corowa BESS Engagement Plan throughout the life of the Project • Ensure the plan adequately informs neighbours and the community of project activities, for example upcoming traffic-related impacts, including road upgrades. • Ensure the complaints management process is well known to neighbours and the community to reduce potential negative impacts on community cohesion and mental well-being. • Distribute updates to counter misinformation or confusion via mixed communication channels to stakeholder groups, as required, related to topics like land values, insurance, electricity reliability and prices.	Ongoing

07 Additional Issues



7. Assessment of additional issues

7.1. Non-Aboriginal heritage

7.1.1. Approach

Searches of heritage databases were undertaken to identify any items or places in proximity to the Project Site, with a focus on the immediate area and its surrounding landscape. The following resources were used as part of this assessment:

- The NSW State Heritage Inventory (SHI), this includes items on the State Heritage Register and items listed by state agencies and local Government, to identify any items currently listed within or adjacent to the Project Site.
- The Australian Heritage Database, this includes items on the National and Commonwealth Heritage Lists, to identify any items that are currently listed within or adjacent to the Project Site.

7.1.2. Existing environment

Local European historical context

European exploration of the Corowa area started in the early 19th century, with Charles Sturt being one of the first Europeans to travel through the region in 1838. Settlement in the area didn't occur until the 1850's as a large result of gold being found in the nearby regions including Beechworth. The town of Corowa was officiated in 1858 and quickly evolved into a major regional agricultural hub and busy river port taking advantage of the transportation capabilities and proximity to the Murray River. A major regional historical infrastructure project located in Corowa was the construction of the bridge over the Murray River.

Corowa also played an influential role in the development of the Australian democracy, notable hosting the Corowa Conference in 1893. This political event was significant in the movement leading towards the Australian Federation and establishment of a unified Australian nation in 1901. This event is commemorated in the local Corowa Federation Museum which showcases the town's role in the Federation and other local history. The town is often referred to as the "Birthplace of Federation" (Federation Council, 2025).

Desktop searches

The results of the NSW SHI database search indicated there are three previously recorded heritage sites listed under the *NSW Heritage Act* within the Corowa area. None of the sites are located within or adjacent to the Project Site. The closest site, Corowa Flour Mill (SHR #00566) is located in the town of Corowa approximately 2.1km to the southeast of the Project Site.

There are sixty previously recorded heritage sites listed by the Local and State Agencies within the Corowa area. None are located within or adjacent to the Project Site. The closest site is the Lindemans Wine Cellar (now part of the caravan park) (LEP #I20) which is approximately 2.1km southeast of the Project Site.

The Australian Heritage Database covers listings of heritage places that fall under the Commonwealth Heritage List, the National Heritage List and the World Heritage List, each of which are slightly separate and

have different management and legal protections, although all come under the Commonwealth's *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC).

The results of the Australian Heritage Database search indicated that there are seven items listed within the Corowa area. None are located within or adjacent to the Project Site. The closest sites are located in the town of Corowa approximately 3km south of the Project Site.

No other known previously recorded heritage sites are located within or adjacent to the Project Site.

7.1.3. Potential impacts

The Project Site is not listed on any heritage register at a State or Local level and no items or structures of historical significance were encountered during site assessments undertaken as part of the EIS. Additionally, there is no evidence of any historical activity including structures noted on the parish maps or within any of the literature researched for this Project.

The proposed development of the Corowa BESS is not anticipated to have negative impacts on any known historical heritage items within the Project Site or the surround areas.

7.1.4. Uncertainty

It is possible that unrecorded heritage items may still occur and be impacted during construction, operation, maintenance, upgrading and decommissioning works for this BESS in the future. This is considered a remote possibility; however, an Unexpected Finds Protocol would be followed and is included in the Project mitigation measures below.

7.1.5. Mitigation measures

With the effective implementation of the mitigation measures set out below, the overall impact of the Project on historic heritage is considered low and manageable.

Table 7-1 Safeguards and mitigation measures to manage historic heritage

ID	Mitigation measures	Project Phase
NAH1	Should an item of historic heritage be identified, Heritage NSW would be contacted prior to further work being carried out in the vicinity in accordance with a Non-Aboriginal Heritage unexpected finds procedure. This plan is to be developed prior to the commencement of construction.	All Phases

7.2. Resource use and waste generation

7.2.1. Existing environment

Statutory requirements

Legal requirements for the management of waste in NSW are governed by the *NSW Protection of the Environment Operations Act 1997* (POEO Act) and the Protection of the Environment Operations (Waste) Regulation 2014. Unlawful transportation and deposition of waste is an offence under Section 143 of the POEO Act.

The NSW Waste Avoidance and Resource Recovery Act 2001 include waste minimisation and management objectives to encourage the most efficient use of resources and to reduce environmental harm in accordance with the principles of ecologically sustainable development. The Project's resource management options would be considered against a hierarchy of the following order:

- Avoidance of unnecessary resource consumption
- Resource recovery (including reuse, reprocessing, recycling and energy recovery)
- Disposal.

The NSW Waste Avoidance and Resource Recovery Strategy, the 'WARR Strategy', provides a framework for achieving these statutory objectives (NSW EPA, 2014).

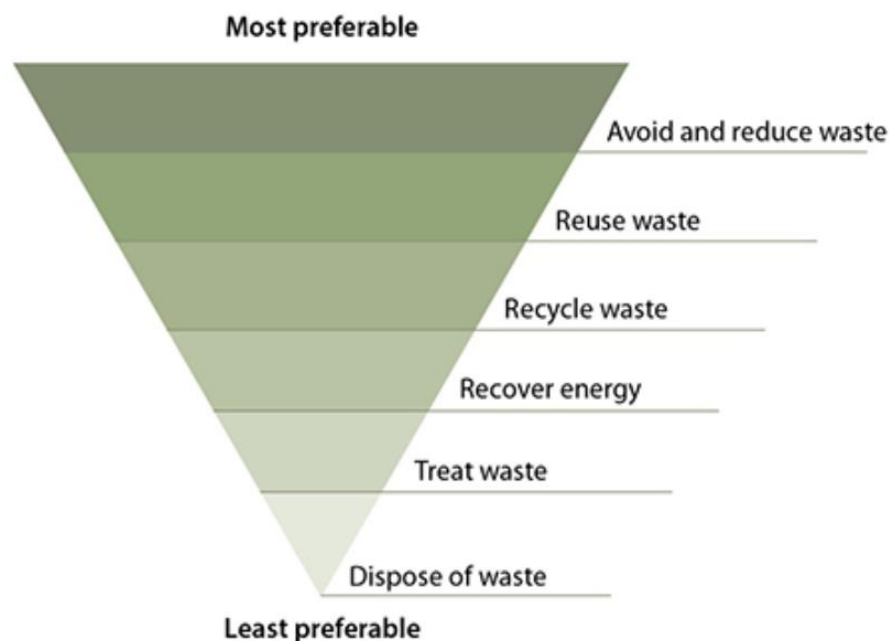


Figure 7-1 Waste hierarchy, Source: (NSW EPA, 2025)

Adopting the above principles would encourage the most efficient use of resources and reduce costs and environmental harm in accordance with the principles of ecologically sustainable development. The following additional pieces of legislation and guidance are also considered in this assessment:

- NSW Waste Avoidance and Resource Recovery Strategy 2014-2021
- NSW Waste and Sustainable Materials Strategy 2041, Stage 1: 2021:2027
- NSW Environmental Planning & Assessment Act 1979 (EP&A Act), specifically Ecologically Sustainable Development

- NSW Waste Classification Guidelines 2014
- NSW Water Management Act 2000
- NSW Dangerous Goods (Roads and Transport) Act

Current waste streams

The Development Footprint is utilised for agricultural practices, and therefore current waste streams pertain to agricultural products such as chemical disposal, machinery waste (e.g. batteries, tyres), and general waste.

Regional waste disposal capabilities

Regional capabilities are highly relevant for ensuring waste reuse options are fully explored. The region has low population density over large distances, which limits waste collection, separation, reuse and recovery options.

Sourcing local resources and disposal options and building local capabilities for separation, reuse and recycling are important to reducing the wastage related with transporting wastes large distances for disposal.

Specific facilities in the Federation LGA are located at:

- Corowa Waste Management Centre
- Mulwala Transfer Station
- Howlong Waste Management Centre
- Urana Landfill
- Oaklands Landfill

Metal recycling would be available through local contractors in Corowa and Federation Council Waste Disposal Facilities. Independent metal recycling contractors can support the collection and recycling of metal waste.

Industry context

Australia currently recycles 10% of its lithium-ion battery waste, compared to 98% of lead acid batteries. The CSIRO is confident that lithium-ion batteries are highly recyclable (CSIRO, 2024) and has developed a pilot program to test the dry shredding of lithium-ion batteries to recover valuable materials. These materials could then be used to manufacture new batteries in the future as the demand for these batteries increases (CSIRO, 2024). B-Cycle is a government backed scheme which is run by the Battery Stewardship Council and authorised by the Australian Competition and Consumer Commission (ACCC) to promote the safe use and disposal of batteries including LFP batteries.

In 2025, there are 10 B-Cycle accredited, EPA - permitted and licensed recyclers of mixed batteries including LFP batteries in Australia that are collecting, sorting and processing batteries. There is one processor currently recycling commercial sized LFP batteries. The number of recycling plants with these accreditations is anticipated to grow with demand.

Other State Significant Developments have identified opportunities for reuse of construction waste within local communities:

- Men's sheds

- TAFE, high schools and trade schools
- Day care centres
- Sporting grounds
- Local farmers
- Garden centres.

This is an emerging opportunity for the Renewable Energy Sector and energy storage developers to demonstrate coordinated reuse options within local communities. Community and business initiatives could see substantial benefits from Project waste streams that lead to:

- Timber and metal supplied to trade schools and local craft workshops
- Composted materials supplied to local gardeners and farms.

7.2.2. Potential impacts

Construction

The estimated bulk material requirements of the Project are set out in 3.7 for construction, operation and decommissioning. The final volumes of waste materials would not be known until the detailed designs are completed and a construction contractor is appointed. As such, details in this assessment are estimates only and would be formalised in a Waste Management Plan (WMP) in the post approvals stage.

The materials required for the BESS (batteries, cabling and quarry materials) are expected to have adequate supply stores available. Where materials are required that are in short supply, alternative materials may be sought to meet timelines and reduce costs. In considering the volumes required, the Project is unlikely to place significant pressure on the availability of local or regional resources. The use of the required resources is considered reasonable in light of the benefits of supporting renewable electricity generation.

Wastes that are likely to be generated from the Project during construction include:

- Vegetation from site clearing – this is expected to be limited to grasses
- Surplus spoil from earthworks required for the Project – excess spoil would be reused onsite to fill in trenches and stabilise cleared areas
- General construction waste e.g. concrete, steel, timber – this is expected to be minimal with quantities of building materials required to be accurately estimated
- Domestic waste materials including plastics, packaging materials, putrescible waste generated by construction personnel
- Chemicals and oils
- Wastewater generated at construction compounds
- Waste from onsite amenities i.e. septic disposal.

All waste would be transported and disposed of in accordance with the *Waste Classification Guidelines* (NSW EPA, 2014).

The impact from waste generation, on regional waste facilities is assessed to be moderate without the implementation of any recycling or reuse measures. It is critical that all waste stream end locations are identified prior to construction and any limitations of facilities is communicated through updated to the Waste Management Plan.

With the implementation of detailed Waste Management Plan and identification of recycling waste facilities in the LGA, the impacts from construction waste disposal on regional landfills, the biological environment and social environment is assessed to be minor.

Table 7-2 provides a summary of expected construction waste stream types and operation for reducing, reusing and recycling.

Corowa Battery Energy Storage System

Table 7-2 Expected waste streams and waste options

Components	Waste stream details	Waste hierarchy options		
		Reduce/Avoid	Reuse	Recycle
Construction				
Excavated soils	The Project is not expected to excavate excess soil that cannot be re-used on site. The Project will likely require the importation of fill to construct the BESS hardstand and raise it out of flood levels.	🟢 Minimise disturbance areas	🟢 Soil to be retained and reused onsite.	🔴 N/A
Excess construction materials: Concrete aggregates Timber products Masonry products	Greatest during construction.	🟢 Careful design and procurement to avoid oversupply.	🟢 Offer to local TAFE and high schools	🟢 Recyclable material to be sorted and disposed at appropriate facilities
Paper and cardboard	Life of Project.	🔴 N/A	🔴 N/A	🟢 Recycled at appropriate facility
Packaging timber: Pallets, timber cable drums	Greatest during construction.	🔴 N/A	🟢 Send timber pallets and cable reels back to suppliers. Offer to local TAFE, High School and Art community, local contractors	🟢 Recycled at appropriate facility

Corowa Battery Energy Storage System

Components	Waste stream details	Waste hierarchy options		
		Reduce/Avoid	Reuse	Recycle
Packaging (plastics)	Greatest during construction.	Ⓟ Packaging is minimised	⓪ N/A	Ⓟ Sort and recycle at appropriate facility
Packaging (ferrous and non-ferrous metals)	Greatest during construction.	⓪ N/A	⓪ N/A	Ⓟ Sort and recycle at appropriate facility
Putrescible waste: Food waste, food packaging	Greatest during construction when highest volume of staff onsite.	Ⓟ Avoid plastic	⓪ N/A	Ⓟ Sort on site (glass, plastic, green) 90% recycle
Bio waste (septic) / black water	Greatest during construction when highest volume of staff onsite.	Ⓟ Install water saving appliances. Install bio-septic tank or worm farm waste composting septic (or similar) tank to reduce volume of biohazard black water.	Ⓟ Utilise local composting facilities to incorporate into their activities for end use to be on farm (associated land) soil improvement.	Ⓟ Treated and disposed of by appropriately licensed contractor

Operation/decommissioning

The average life of the LFP batteries is assumed to be 15 to 20 years based on normal operating conditions (Najera, Arribas, de Castro, & Nunez, 2023) . The batteries may require replacement 1–2 times during the life of the BESS.

LFP batteries are classified as hazardous waste under the Commonwealth *Hazardous Waste Act 1989*, and Dangerous Goods under the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code). The code has a special provisions and packaging instructions for LFP batteries transported for disposal or recycling.

Any spent batteries would be recycled at a B-Cycle accredited, EPA permitted and licensed recycler of LFP batteries. Batteries would be handled, stored, and transported according to manufacturer's guidelines and the ADG Code.

Given the rapid rise of LFP battery use in Australia, including in renewable energy projects and electric cars, cost-effective local recycling may be available at the time of battery replacement or decommissioning. AEMO (2015) predict strong growth in the consumption of LFP batteries for both electric vehicles and PV solar over the next 20 years. This growth would begin to significantly affect the waste stream from 2025 (Randell Environmental Consultancy, 2016).

Table 7-3 Provides a summary of expected operation and decommissioning waste stream types and options for reducing, reusing, and recycling.

Table 7-3 Estimated waste streams during operation and decommissioning

Components	Quantification		Waste hierarchy options		
			Reduce/Avoid	Reuse	Recycle
Decommissioning					
Ancillary buildings and structures	Greatest during decommissioning	Battery containers, O&M buildings, fences etc.	○ N/A	▢ Option to reuse on other infrastructure projects depending on the condition of the infrastructure at the time of decommissioning.	▢ Recycled at licensed and approved metal recycling facility
LFP batteries	During operation (component failure) but greatest during decommissioning when the battery is disassembled and removed. Components may also require disposal during operation as they reach the end of their life span.	Approximately 13 tonnes	○ N/A	○ N/A	▢ Recycled at approved recycling facility
Electrical cables Recovered electrical cables	Greatest during decommissioning	Approximately 13 tonnes (subject to detailed design); some may be retained in situ where dependant on disturbance risks and recovery costs.	○ N/A	○ N/A	▢ Recycled at licensed and approved metal recycling facility

7.2.3. Key uncertainties of the assessment

The fast-paced rate of technological change regarding battery technology means that the some of the data supporting this assessment may be out of date by the time the Project approaches construction stage. However, the trend is very much toward longer lived infrastructure and increased recyclable content. A Waste Management Plan prepared in consultation with local waste operators and Council closer to Project phases will maximise avoid, reuse and recycle opportunities.

7.2.4. Mitigation measures

With the effective implementation of the mitigation measured set out below, the overall resource and waste impacts of the Project are considered manageable.

Table 7-4 Safeguards and mitigation measures to manage resources and waste

ID	Mitigation measures	Project Stage
RR01	A Waste Management Plan (WMP) would be developed in consultation with Council to minimise waste, including: • Identification of opportunities to avoid, reuse and recycle, in accordance with the waste hierarchy. • Quantification and classification of all waste streams. • Confirmation and evidence of waste management agreements with waste facilities prior to the disposal of any waste product. • Defining appropriate lines of communication for each waste stream so any restrictions can be identified. • Provision for recycling management on-site. • Provision of toilet facilities for on-site workers and identify that sullage would be disposed of (i.e., pump out to local sewage treatment plant). • Tracking of all waste leaving the site. • Disposal of waste at licenced facilities permitted to accept the waste. • Requirements for hauling waste (such as covered loads).	Construction and operation
RR02	A septic waste management system would be installed and operated according to the Federation Shire Council regulations.	Construction Operation
RR03	Where possible, waste would be removed regularly to maintain the Development Footprint being litter free.	Construction
RR04	LFP Batteries would be kept, stored, managed and transported according to manufacturer's instructions and the ADG Code. Any spent batteries would be recycled at a B-Cycle accredited, EPA permitted and licensed recycler of LFP batteries.	Construction Operation Decommissioning
RR05	Develop a Decommissioning Waste Management Plan, when the Project is planned for decommissioning.	Decommissioning

7.3. Air quality and climate

7.3.1. Existing environment

Air quality

The air quality in Corowa is generally expected to be good and typical of that found in a rural setting in NSW due to low population numbers. Existing sources of air pollution in such a location is expected to comprise of dust from agricultural practices and some road-based emissions from vehicles travelling on nearby local roads. During colder months, there may be a minimal increase in air contaminants due to some emissions from the operation of solid fuel heating. Daily air quality (particulate matter only) forecasts are reported on the air quality NSW website, with conditions in Deniliquin being used as the daily air quality baseline for Corowa, NSW (NSW Govt, 2024).

A search of the National Pollutant Inventory (NPI) on 16 December 2025 indicated that there are eight (8) listed sites in the Corowa LGA that reports emissions. The closest facility reporting emissions is the Rivalea – Stock Feed Mill approximately 1.5km east of the Project Site. These emissions are not expected to affect the Project as the facility is not in close enough proximity to the Corowa BESS.

Climate

Meteorology in the area surrounding the site is affected by multiple factors such as terrain and land use. Rainfall, temperature and wind averages are recorded at the Corowa Airport and are summarised in Table 7-5.

Wind speed and direction are largely affected by topography at the small scale, while factors such as synoptic scale winds affect wind speed and direction on the larger scale. Wind speed and direction are of great importance while assessing potential air quality impacts, as they dictate the direction and distance air pollutant plumes travel. The Corowa Airport weather station’s wind data notes that wind speeds are generally highest during the spring and summer months and drop off in winter.

Table 7-5 Corowa climate data sourced from Corowa Airport weather station (AWS #074034) for 1890 – 2025(BOM, 2025)

Aspect	Annual mean	Mean minimum range	Mean maximum range
Temperature	22.6°C maximum 8.9°C minimum	15.8°C (January) to 2.8°C (July)	32.1°C (January) to 13.1°C (July)
Rainfall	541.4mm	36.4mm (April)	56.3mm (June)

The context of climate change is relevant to rural locations. Climate change refers to the long-term shift in climate over many decades which may occur because of natural variations of human activities which causes change in the composition of the atmosphere.

In 2014, the NSW OEH published climate change projection snapshot reports for the NSW and ACT governments as part of the NSW and ACT Regional Climate Modelling (NARClIM) Project and in 2024 this was updated with the completion of NARClIM 2.0 by AdaptNSW.

NARClIM 2.0 provides historical and projected climate data from 1951 to 2100. The two main scenarios in the NARClIM 2.0 Riverina Murray snapshot are a low-emissions future with a global transition towards sustainable and equitable development and a high-emissions future of regional conflict and development where countries do not collaborate on tackling climate change and do not focus on sustainable and equitable development (Department of Climate Change, Energy, the Environment and Water, 2024).

Figure 7-2 below is the projected changes summary for the Riverina Murray under the low and high emissions scenario. The key takeaways for the region are that hot days are expected increase while cold nights are expected to decrease under both scenarios, severe fire weather is also expected to increase. However, it should be highlighted that changes would be vastly reduced under the low emission scenario. In terms of rainfall in the region the snapshot does predict an overall reduction in rainfall under both scenarios, which could impact agriculture productivity, water security and native species' (e.g. eucalypt woodland) reproductive cycles.

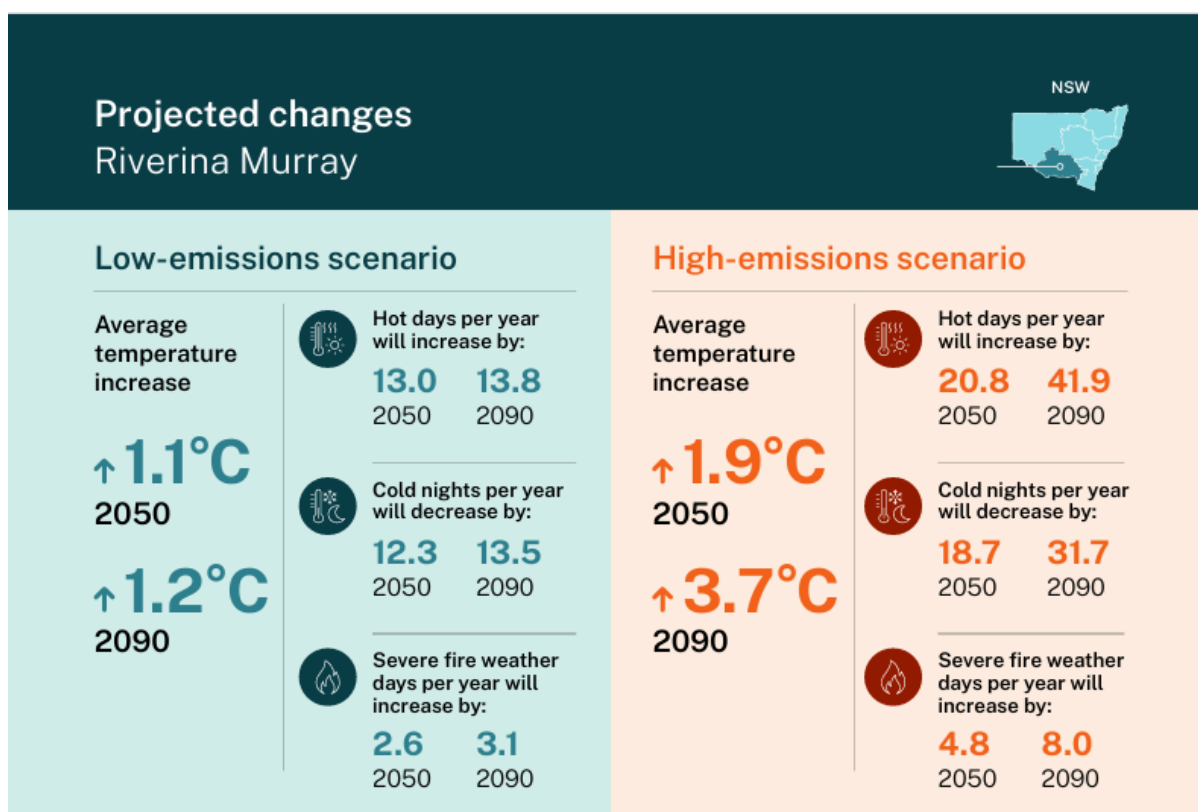


Figure 7-2 Projected climate change impacts for the Riverina Murray region (source: (Department of Climate Change, Energy, the Environment and Water, 2024)

7.3.2. Potential impacts

Construction and decommissioning

The Project would require earthworks/excavation expected to be limited to foundations and hardstand construction (cutting and filling), and trenching of the Project Site. These works have the potential to adversely impact on local air quality through generation of dust and vehicle emissions.

The primary potential emission generated during the construction phase is dust. Dust emission from the Project, potentially from material handling including skid modules, battery storage and machinery, transport

of batteries into the Development Footprint, sand, and other construction materials. Emission would occur when bulk material is transferred from loaded vehicles to the Development Footprint. Overall, the potential impact on the air quality is not expected to be significant, nor impact on the nearby receivers with the recommended mitigations in place (refer to Section 7.3).

Other potential source of minor discharge into the air during construction phase would be the products of fuel combustion emitted as a result of transport and construction vehicle movements which include site personnel commute, delivery and removal of both construction and waste materials.

These would be short term, and most noticeable during the construction and decommissioning peak periods.

Potential impacts would be similar during the decommissioning phase with the omission of clearing vegetation and earthworks that are required for construction. Therefore, air quality impacts during decommissioning would be minimal.

Operation

Air quality impacts during operation would be limited and likely less than existing agricultural operations within the Development Footprint. They would be limited to activities such as combustion emissions arising from light vehicles accessing site during maintenance periods and dust emissions arising from vehicle movements along unsealed roads. Large vehicles may occasionally be required to access site to deliver replacement parts or additional equipment. These vehicles and equipment operation would result in minor emission and dust generation.

A project such as the Corowa BESS would support a broader transition to renewable energy through firming the grid, add storage for renewable generation during high generation/low demand and discharge during periods of low generation/high demand. This is discussed is backed by NSW energy policy aimed at reducing emissions to assist in the states global obligation to mitigate climate change.

7.3.3. Mitigation measures

This Project and BESS generally, can be seen to be at low risk of impacting air quality. They are considered important part of the transition to a reduced emission future overall. Standard safeguards would be employed as set out below.

Table 7-6 Safeguards and mitigation measures to manage air quality

ID	Mitigation measures	Project Phases
A1	Management protocols in the EMS will include measures to minimise impacts on air quality including: • Identification of high-risk construction activities with potential to generate dust, and control measures for the activities • A process for monitoring dust on-site and weather conditions, as well as procedures for altering management measures where required, and periods where dust generating works should not take place	All phases

ID	Mitigation measures	Project Phases
	(e.g. during high winds) • A map identifying locations of nearby receivers • Notification of relevant stakeholders to hours of work and duration of work • An accessible complaints process with a timely response protocol.	
A2	Dust generation by vehicles accessing the site and earthworks at the site will be suppressed using water applications or other means as required, using visual cues. • Covering dirt, sand, soil, or any loose material while in transport • Clean-up of any material spillage on the roads • Limiting construction vehicle speeds on unsealed roads • Checking of weather conditions (such as wind strength and direction) prior to major potential dust emitting activities	Construction Decommissioning
A3	Stockpiles will be covered or stored in areas not subject to high wind, and vehicle loads of material which may create dust would be covered while using the public road system.	Construction Decommissioning
A4	All vehicles and machinery used at the site will be in good condition, fitted with appropriate emission controls and comply with the requirements of the POEO Act, relevant Australian standards and manufacturer's operating recommendations. Plant will be operated efficiently and turned off when not in use.	All phases
A5	Fires and material burning is prohibited on site.	All phases

7.4. Cumulative impacts

7.4.1. Approach

Cumulative impacts are the amalgamated impacts caused by the combination of past, present, and reasonably foreseeable future actions. Cumulative impacts can accumulate over time and can be positive, negative or benign.

The chapters above have considered each Project impact in isolation and provided mitigation strategies, where required, to address impacts. As the site is small, impacts to existing agricultural activities are expected to have low significance (as discussed in Section 6.10 Land use compatibility). As such, this assessment of cumulative impacts is focused on the Project's interaction with other projects in the vicinity, where construction and/or operational timeframes could be concurrent.

This EIS addresses the NSW Government's *Cumulative Impact Assessment Guidelines for State Significant Projects* (DPE, 2022). It considers Strategic and Project-level Cumulative Impact Assessment (CIA).

Strategic-level CIA

The strategic-level CIA has been identified as predominantly positive cumulative impacts. In summary, they include the Project's cumulative contribution to:

- Federal and state regional renewable energy policies
- Regional and local land use plans
- Reduction of energy costs
- Understanding and protecting the site's unique environmental and social context
- Community benefits

Project-level CIA

The Project-level cumulative impact risks exist where the Project may interact with other large developments and thereby exacerbate the impacts of both projects.

Significant development projects are considered as the following in alignment with Section 3.4 of the *Cumulative Impact Assessment Guidelines for State Significant Projects*:

- Other State significant development (SSD) and State significant infrastructure (SSI) projects
- Projects that are classified as designated development and require an EIS
- Projects that require assessment under division 5.1 of the EP&A Act that are likely to significantly affect the environment and require an EIS
- Projects that have been declared to be controlled actions under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)
- Any major greenfield and urban renewal developments that are scheduled for the area (e.g. new areas zoned for urban development).

The key environmental considerations considered in this chapter include:

- Mandated by the Project SEARs:
 - Biodiversity

- Land
 - Noise
 - Traffic
- Project identified or guideline prescribed impacts:
 - Visual impacts
 - Social impacts

7.4.2. Existing environment

Table 7-7 below lists the State Significant Developments currently proposed, as of October 2025, within 50km of the Project Site, their brief description, distance from the Project Site, their anticipated construction timeline and a statement on the key potential cumulative impacts. The distribution of these Projects is shown in Figure 7-3.

As stated in the Project description the Corowa BESS's existing indicative construction timeline is expected to run from September 2027 through to March 2029 (18 months).

Table 7-7 Major Projects nearby the Project Site (Information based on latest public documentation on the NSW Major Projects website in October 2025)

Project / Proponent	Project phase as of October 2025	Project Description, maximum expected workforce (FTE) & Estimated Development Cost (AUD)	Approximate distance from the Project area	Stated construction commencement	Key cumulative impacts considered
Howlong Sand and Gravel Quarry Expansion	Approved	Expansion of an existing sand and gravel quarry from 30,000 tonnes p.a. to 330,000 tonnes p.a. Increase to 10 FTE jobs during operation EDC not stated	24.4km east	Construction likely completed.	Complete, risk of ongoing cumulative impact is considered minimal.
Mulwala Solar Farm	Approved	31MW solar farm with potential for BESS 130 FTE jobs during construction 4 FTE jobs during operation EDC not stated	33km west	Construction underway, anticipated completion in 2026. Construction unlikely to overlap with the Corowa BESS	Traffic (local & regional) Social (concurrent service and supply demand)
Jindera Solar Farm	Approved	120MW solar farm with potential for BESS 200 FTE jobs during construction 2-3 FTE jobs during operation Approx. \$167.5 million EDC	42.4km east-northeast	Construction anticipated to commence in 2023 as per Project website. Unclear if yet commenced. Expected to take 12-18 months. Construction may overlap with the Corowa BESS	Traffic (local & regional) Social (concurrent service and supply demand)
Kilnacraft Creek BESS	Prepare EIS	500MW/2000MWh BESS Up to 150 FTE jobs during peak construction 5 FTE operational jobs EDC not stated	45.3km east-northeast	Construction commencement not stated, duration anticipated to take 20-24 months. Construction may overlap with the Corowa BESS	Traffic (local & regional) Social (concurrent service and supply demand)
Glenellan Solar Farm	Approved – under construction	200MW solar farm 200 FTE jobs during construction 10 FTE jobs during operation EDC not stated	45.8km east-northeast	Construction commenced in late 2024 and is expected to take 12-18 months. Construction may overlap with beginning of the Corowa BESS.	Traffic (regional) Social (concurrent service and supply demand)
Jindera BESS	Response to submissions	250MW/500MWh BESS Up to 80 FTE jobs during peak construction 2 FTE operational jobs EDC not stated	46.5km east-northeast	Construction commencement not stated, duration anticipated to take 10 months. Construction may overlap with the Corowa BESS	Traffic (regional) Social (concurrent service and supply demand)
Inland Rail – Albury to Illabo	Approved	Enhancement works to structures and sections of track along 185 kilometres of existing operational standard gauge rail from the Victorian/New South Wales border to Illabo in regional NSW. The project forms part of the Inland Rail project.	Approx 50km at closest extent through Albury-Wodonga	Construction anticipated to commence in early 2024, however Project was not approved until late 2024 and is expected to take 12-18 months. Construction may overlap with beginning of the Corowa BESS.	Likely minimal regional traffic overlap
Wodonga Solar Farm (Victoria)	Approved	50MW solar farm Further information unknown	30.9km southeast	Further information unknown	Traffic (regional)
Indigo Solar Farm (Victoria)	Approved	5MW solar farm FTE jobs not stated EDC not stated	30km southeast	Estimated construction commencement and duration not stated. Construction may overlap with the Corowa BESS	Traffic (regional)
Barnawartha Solar Farm (Victoria)	Approved	64MW Solar Farm with 64MW BESS 200 FTE jobs during peak construction 10 FTE operational jobs	28.3km southeast	Construction commencement not stated, duration anticipated to take 12-18 months. Construction may overlap with the Corowa BESS	Traffic (regional)

Project / Proponent	Project phase as of October 2025	Project Description, maximum expected workforce (FTE) & Estimated Development Cost (AUD)	Approximate distance from the Project area	Stated construction commencement	Key cumulative impacts considered
		EDC not stated			
Wangaratta Solar Farm	Under construction	40MW Solar Farm with 80MWh BESS Further information unknown		Construction underway, duration not stated. Construction may overlap with the Corowa BESS	Traffic (regional)

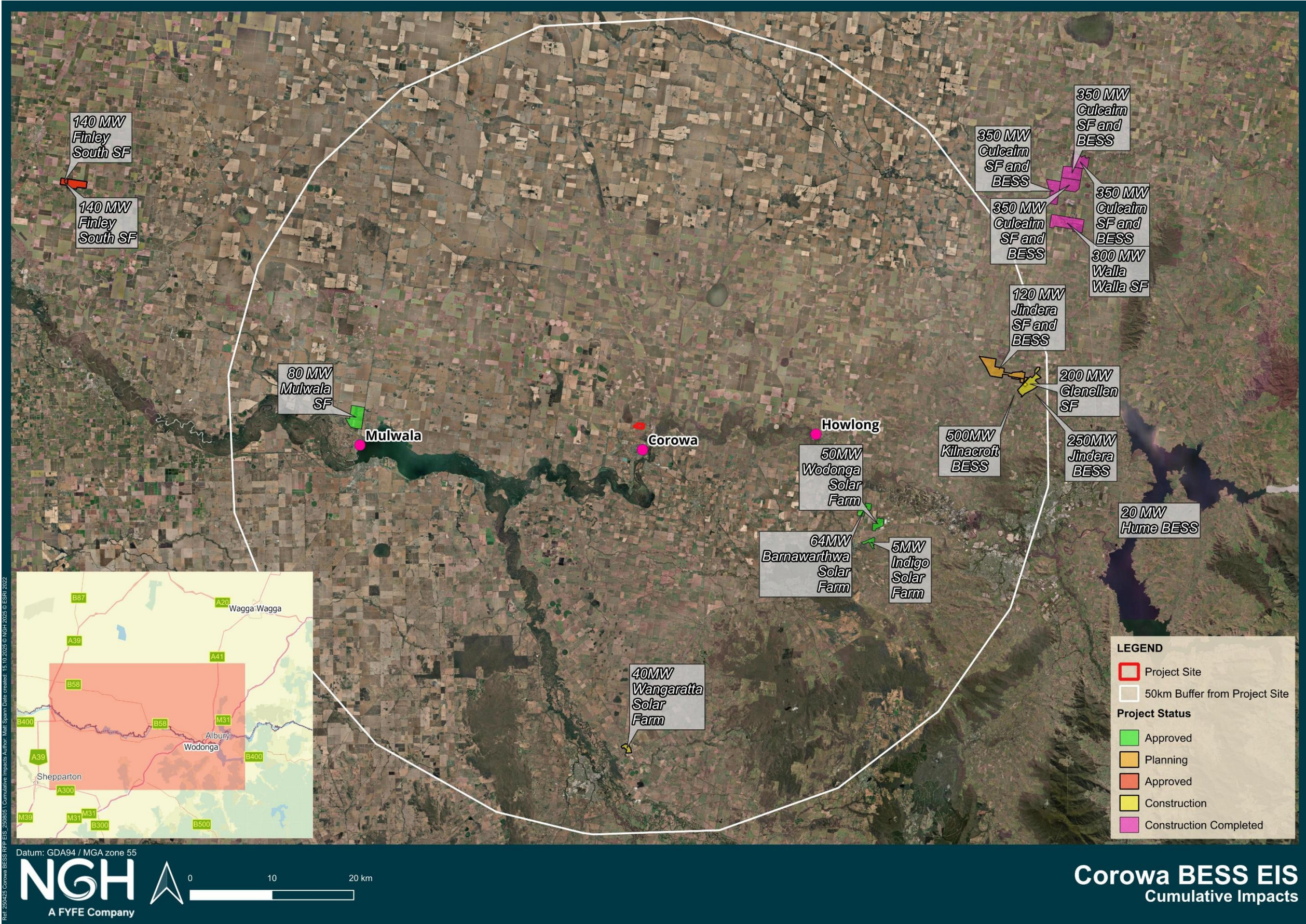


Figure 7-3 Large-scale renewables projects that may pose cumulative impacts

7.4.3. Potential cumulative impacts

Biodiversity

The Biodiversity Assessment Method used to assess clearing impacts (and summarised in Section 6.1) considers the landscape context of the Project and the rarity and risk factors for biodiversity entities at a catchment level. The tool used to assess the impacts and calculate offset obligations is updated regularly to reflect increasing knowledge about species and threats and the cumulative risks of development on these entities.

The Project has avoided and minimised impacts to ensure that its cumulative contribution to the state's clearing is as low as possible. It will not generate a biodiversity offset obligation, reflecting the degree to which impacts have been avoided and minimised.

An assessment of proposed development projects within 50km of the Project Site has been carried out to provide a summary of potential cumulative impacts to biodiversity. Eleven developments were identified through the Major Project's Portal and listed in the BDAR. Impacts resulting from the Project are largely consistent with impacts that are considered to occur at other nearby projects within the 50km radius. The summary of biodiversity impacts from publicly available information was reviewed to gain an understanding of the main biodiversity impacts and how these may contribute to cumulative impacts when considering the development of the Project. The Project will add a minor increase to cumulative impact of vegetation clearing within the assessed 50km buffer but is considered manageable with the mitigation measures proposed in Section 6.1.4.

Land

The Project would result in the temporary loss of approximately of a small area of agricultural land for the life of the BESS (the Development Footprint, for a period of approximately 20 years). The Project is not located on land that is of higher quality LSC than the surrounding lands, and it is not classified as BSAL. As such the Project, considered alone, would not cause loss of uniquely high value land in the locality during the construction and operation of the BESS. The above-mentioned impacts, on their own, would not materially reduce the primary production within the region, and therefore, the cumulative contribution to agricultural impacts in the region, arising from the Project, would not be significant.

Noise

None of the 11 new projects identified in Table 7-7 are located in close proximity to the Project Site, and are therefore likely to contribute to cumulative noise impacts together with the proposed Corowa BESS Project.

Other, existing, noise generating developments in the area have therefore been considered in the assessment of cumulative impacts, including the existing Essential Energy 132 / 22kV Corowa Substation located immediately to the east of the Project Site, and the Corowa industrial area located approximately 1km to the east.

It is noted that the NPfl establishes the Project amenity noise levels to account for new industrial noise sources contributing to the total (cumulative) industrial noise level (existing plus new) experienced at a sensitive receiver.

The predicted operational noise levels of the proposed BESS at all non-associated receiver locations were at or below the PTNLs, for all time periods and under all meteorological conditions. Therefore, operational noise from the proposed BESS is unlikely to contribute or increase noise impacts from other existing noise generating developments currently experienced by the identified non-associated receiver locations.

Traffic

The TIA provides a review of the cumulative impacts of the Project along with other major projects within the surrounding area (refer to Appendix E3). The assessment identifies that some projects are expected to generate additional vehicle movements within the Corowa region. These vehicle movements would be distributed on the surrounding road network and are expected to have a minimal cumulative impact on the operation of the local road network.

Future traffic conditions are however, a key uncertainty. This is most relevant to the peak construction phase when overlapping construction schedules may exacerbate road safety risks, cause delays or adversely impact road assets. Mitigation measures have been developed within the framework of a Traffic Management Plan to address this uncertainty closer to the proposed construction works.

Visual

The visual assessment identified one project within the Study Area which could have cumulative visual impacts together with the Project: the Corowa Solar Farm. Desktop assessment, using aerial imagery, shows that Corowa Solar Farm is contained using screen planting. Considering the existing screening around the Corowa Solar Farm and the proposed screening for the Project, opportunities to view the two projects from public viewpoints at the same time were concluded to be low.

Social

The assessment of social and economic impacts (summarised in Section 6.11) centres on the combined effect of the Project on local community values and resources. Excluding the issues already addressed above, it identified the key positive cumulative impacts for this Project as:

- Positive economic impacts for the surrounding community and region, including:
 - Direct injections into the local economy
 - Demand for skilled and unskilled labour
 - Demand for building materials, equipment hire, transport, etc.
- Demand for accommodation and housing:
 - Positive impacts for accommodation providers, such as increased income
 - Possible negative impact due to reduced availability of visitor accommodation and flow-on effects to tourism-related businesses
 - Possible negative impact as a result of decreased availability of housing for seasonal workers, affecting the ability of agricultural industries to meet their needs during harvest-time
 - Possible negative impacts arising from increased demand for rental housing, placing upward pressure on rental prices and affordability
 - Possible negative impacts arising from temporary changes to population and demography.
- Impacts on local content and suppliers, including skilled trades and construction workers:

- Positive cumulative economic impacts arising from the surge in demand for qualified construction workers in regional areas
- Negative impacts associated with increased potential for workers from other industries to be attracted to work on the Project, leading to work shortages for local businesses
- Negative impacts associated with an increased number of non-local workers, impacting on community cohesion
- Impacts associated with the use of local and regional roads for transport of workers, materials and equipment:
 - As a positive impact, this may lead to upgrades of transport infrastructure
 - In terms of negative impacts, this can lead to increasing road safety risks and further diminish amenity for residents and local agribusinesses.

Several project specific measures are proposed in Section 6 that ensure the Corowa BESS addresses these cumulative risks.

7.4.4. Key uncertainties

In the absence of certainty, this cumulative impact assessment chapter has considered that it is possible that all the projects listed in Table 7-7 will progress to completion and be developed within the general parameters described therein. This is considered as a 'worst-case' scenario as several of the projects are only proposed. Not all of these will be approved, and if approved, not all will be developed to their full scope.

Projects which may be proposed after this EIS will be required to consider this Project (in addition to other relevant projects) in their consideration of cumulative impacts.

7.4.5. Mitigation measures

No additional mitigation measures are proposed for the Project. It is considered that all mitigation measures included in each impact chapter and summarised in Appendix B will work together to minimise the risk of cumulative impacts with other projects.

08 Project Justification



8. Project justification

This concluding chapter of the EIS brings together the key results of the preceding sections. It considers the Project's justification and evaluates the Project, having regard to the economic, environmental and social impacts of the project and the principles of ecologically sustainable development.

8.1. Project context

The Project has demonstrated it is permissible, as set out in Section 4. As a State Significant Development, the Project has been assessed in accordance with *Environmental Planning and Assessment Act 1979 (EP&A Act)*. It is permissible in accordance with *State Environmental Planning Policy (Transport and Infrastructure) 2021 (TISEPP)*. Mandatory matters have been considered.

The Project is considered appropriate to:

- Federal and state renewable energy policies and the ability to 'firm' the grid for the benefit of local and regional electricity consumers.
- Local community values:
 - The Project can be designed to minimise visual and noise impacts.
 - Best practice recommendations of the Preliminary Hazard Assessment and Bushfire Assessment will address fire and contamination risks.
- Local environmental values:
 - The Project avoids known biodiversity, heritage and flooding areas.
- Local site conditions and existing assets:
 - The Project can make use of existing transmission and substation infrastructure to supply a nearby population centre.
 - The existing access network and low relief terrain also improves constructability costs, improving Project viability.

8.2. Community views, impacts and benefits

8.2.1. Community Views

Since first engaging with neighbours and community stakeholders in April 2025, the Applicant has seen mixed sentiment regarding the energy Project's development. The Applicant received negative and neutral leaning responses at the beginning of engagement. As more information has become available about the Project, the potential risks and the potential benefits, and as the Applicant has continued engagement with local stakeholders, the sentiment towards the Project has become more varied, leaning towards neutral and some positive. This sentiments regarding the Community Benefit Fund and Neighbour Benefit Offer Initiative have generally been received as neutral or positive.

8.2.2. Impacts/Concerns

As outlined in table 5.6, all outcomes of the assessments address the potential impacts to nearby neighbours and the community, raised by local stakeholders throughout the development process. All of the key concerns raised can be mitigated and/or addressed with minimal impact on the nearby neighbours, local

community, and wider area. Feedback received from stakeholders regarding concerns for various potential impacts have directly driven significant changes to Project layout and design, revegetation planning, and screening. The Applicant ensured engagements such as community days/information drop-in sessions, in person meetings, phone calls, emails, virtual meetings, etc. offered an opportunity to receive and discuss concerns in depth. As and when further information became available in relation to concerns (e.g., technical reports), the Applicant ensured relevant information was shared and all contacts were available for discussion or clarification when requested.

Key concerns included:

- Visual and landscape amenity impacts
- Noise impacts
- Fire / hazards concerns
- Road access and condition impacts

8.2.3. Benefits

There are a wide variety of benefits including:

- Building on the aims of the NSW Electricity Infrastructure Roadmap to transition away from coal-fired energy, towards greater levels of renewable energy within the grid.
- Assist to stabilise and secure the supply of electricity for residents, business owners and service providers. It is estimated that the Project would have the capacity to power approximately 112,400 households for a 2-hour period during a full discharge (assuming 21.355kWh/day usage) (AER, 2023).
- Assist to drive down the wholesale electricity prices for energy consumers.
- Generate local employment, economic stimulus and other local economic benefits
- The Applicant has worked with local stakeholders and Federation Council to develop and co-design Community Benefit Sharing Initiatives, intended to genuinely offer benefits to the community/area in which the Project is located. This includes:
 - 1) A proposed \$800,000 Community Enhancement Fund, which will exceed NSW government recommendations of \$600,000 in total.
 - 2) In addition to the above, the Applicant has proposed Neighbour Benefit Offer Program valued at up to \$250,000 for residents within 1 km of the Project Site

8.3. Scale and nature of impacts

8.3.1. Key values and impacts

The Project has demonstrated it has avoided impacts, as a first action, and then developed minimisation and mitigation strategies that are commitments of the Project, for impacts that cannot be avoided. The site's environmental values are reflected in the Project design and Project commitments, to ensure that underlying values are protected.

Visual impacts - The Project is sited to take advantage of the existing screening provided by the Corowa substation and road site and perimeter plantings. Without mitigation, all viewpoints (including from nearby dwelling entitlements) were assessed as having low impact. Even so, additional areas of screen planting will be established and maintained for the life of the Project.
Noise impacts - The Project will include noise walls to ensure operational noise compliance at all non-associated receivers. The potential for temporary exceedances during construction will be managed in consultation with affected neighbours and reasonable and practical measures implemented to further reduce noise.
Hazards and risks - Design of the facility in accordance with the recommendations of the Preliminary Hazard Assessment, Bushfire Assessment and best practice guidelines will ensure risks are managed.
Biodiversity - Native vegetation and habitat for threatened species have been avoided by the Project. Protocols have been developed to protect nearby habitats, known to contain the Endangered Sloane's Froglet (<i>Crinia sloanei</i>).
Soils and contamination - The direct impacts of the Project will be relatively small (~10 ha). Rehabilitation will occur progressively during construction and as part of decommissioning, informed by the soil surveys undertaken in accordance with best practice guidelines.
Land use compatibility - The cost benefit economic analysis demonstrates the site is more profitable as a BESS than under agricultural land use. Adjacent lands include the Corowa substation, small lot rural residential lots, as well as grazing and cropping enterprises. Identified land use conflict risks can be managed using standard protocols with high confidence – these relate to potential contaminants, weeds and pests, dust, noise and bushfire.
Aboriginal cultural heritage - Surveys carried out with Representative Aboriginal Parties (RAPs) did not identify any Aboriginal sites within the Project Site. Standard unexpected finds protocols will apply during works.
Traffic and access - With the adoption of two upgrades (site access and intersection of Honour Avenue and Bullecourt Road, Corowa), the road network is considered able to accommodate the Project' construction traffic. A Traffic Management Plan will be developed in consultation with Federation Council and Transport for NSW and additional permitting will apply to Oversize Overmass loads as required.
Hydrology - The Project would be located within of areas subject to a 1% AEP flood. Modelling results indicate that, in the post-development scenario, the implementation of an elevated hardstand is sufficient mitigation to protect the Project Site from flooding in the 1% AEP scenario. The extent of overland flooding is not impacted by the introduction of the Project and the elevated hardstand, with no new properties inundated, or increases in depth or velocity elsewhere in the floodplain. In the climate change scenario of a 1% AEP storm event, the proposed elevated hardstand still provides sufficient protection and 500mm freeboard from flooding.
Social and economic impacts - The Project can deliver tangible local and regional benefits. Only two impacts, relating to accommodation and housing, and temporary population changes, are expected to persist at a medium level despite mitigation. The Applicant will continue to work with Council on the development of a successful Accommodation and Employment Strategy for the Project.

8.3.2. Cumulative impacts and interactions

While most cumulative impacts are best mitigated on a project-by-project basis, traffic and social impacts were regarded as the most uncertain. The Applicant's best understanding of timing is presented in this EIS as well as the stated timing of nearby projects which may coincide. While the chance of overlap cannot be

known with certainty at this time, the period of overlap of peak construction traffic is not considered significant in terms of the ability of the local road network to handle this overlap. Cumulative traffic impacts will require more accurate data, closer to construction regarding managing potential for overlapping construction schedules. As stated above, an Accommodation and Employment Strategy is being developed for the Project.

At a strategic level, it is important to note that cumulative benefits also accrue from the Project's alignment with federal and state renewable energy policies and the ability to 'firm' the grid for the benefit of local and regional electricity consumers.

8.4. Compliance and monitoring

The recommendations of the assessments outlined above have been captured in a consolidated set of mitigation commitments (Appendix B) and together with the Project description in Section 3, constitute the Project's commitment to developing a best practice BESS Project at Corowa.

Pending approval, environmental protection and management measures would be implemented via an environmental management framework, including overarching Construction, Operational and Decommissioning Environmental Management Plans (EMPs). These plans would be prepared sequentially, prior to each stage of works. Key subplans identified in this EIS, and which would be prepared in consultation with relevant stakeholders, are listed below.

In addition to the Project specific management plans, in line with other SSD consents, it is expected that the DPHI would condition the following in relation to this Project:

- Detailed plans of the final layout prior to commencing construction
- Incident and non-compliance notification requirements
- Independent environmental audits.

Table 8-1 Management plans and strategies which form commitments of the Project

Management plans and strategies	Project stage
Biodiversity Management Plan	All stages
Environmental Management System	All stages
Aboriginal Cultural Heritage Management Plan	All stages
Soil and Water Management Plan	All stages
Noise Management Plan	Construction
Traffic Management Plan	All stages
Bush Fire Emergency Management and Evacuation Plan	All stages
Bush Fire Emergency Management and Evacuation Plan	All stages
Non-Aboriginal Heritage unexpected finds procedure	All stages
Community and Stakeholder Engagement Strategy	All stages
Accommodation and Employment Strategy	Construction and decommissioning
Waste Management Plan	All stages

8.5. Uncertainty

Key areas of uncertainty have been clearly identified within the EIS. Primarily, this relates to Project design and component selection. A high-level *indicative* infrastructure layout is provided noting the detailed design stage commences only *after approval has been granted*. It will be informed by further topographic and geotechnical surveys and will be subject to commercial tendering and procurement processes to arrive at the final design and construction program. To address the uncertainty that this brings to the assessment and approval process, the Applicant seeks to gain consent for a maximum 'Development Footprint' (all areas that may be subject to disturbance to construct and operate the facility). This builds conservatism into the assessment and mitigation of Project impacts and allows for necessary flexibility in detailed design.

8.6. Ecologically sustainable development

The precautionary principle

The Precautionary Principle states that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. This EIS has been prepared utilising the precautionary principle. That is, if threats are perceived as possibly leading to serious or irreversible environmental damage, then either the non-development of the Project would occur, or the development modified to ensure that such threats do not exist.

This EIS assesses the environmental and social impacts associated with the Project. A conservative approach was adopted for the assessments, which were often based on the worst-case scenarios. This has been the approach in relation to the recommended mitigation measures. No threat of serious or irreversible environmental damage is considered likely as a result of this Project.

Inter-generational equity

The present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations. The Project would not impact on natural or cultural features to a level that would compromise the health, diversity or productivity of the environment to a level that would impact on future generations. Furthermore, this Project would provide stability and reliability to the renewable energy supply in the area. This would help facilitate the transition to low carbon energy generation and help to reduce greenhouse gas emissions to minimise climate change implications for future generations.

Conservation of biological diversity and ecological integrity

The Project has been developed to avoid native vegetation and habitat. The assessment has identified that the works would not impact significantly on the biological diversity and ecological integrity of the locality. Furthermore, safeguards have been developed that would assist in protecting nearby habitats and species.

No biodiversity offset obligation is generated for the Project, as assessed in accordance with the Biodiversity Offset Scheme under the BC Act.

Appropriate evaluation of environmental matters

This principle relates to giving monetary values to environmental resources. These matters ensure that the development would conform to the principles of ecologically sustainable development. Environmental matters were considered during the iterative design of this Project to ensure environmental impacts were avoided or minimised through design and/or mitigation measures.

Environmental management safeguards and mitigation measures would be implemented during the construction, operation and decommissioning of this Project that will ensure impacts are managed and natural and cultural values protected.

8.7. Conclusion

The Project supports the State's transition to a more reliable, lower-emissions electricity system while aligning with local aspirations for economic resilience, grid stability and investment in regional infrastructure.

The Project can proceed with confidence that its social and economic risks are well understood, responsibly managed and offset by meaningful regional benefits. With the recommended mitigation actions, ongoing engagement, and adaptive monitoring in place, the Project will support a more resilient energy network while contributing positively to community wellbeing and regional economic growth.

The Project as presented in this EIS meets all relevant planning provisions and guidelines and is considered justifiable and acceptable. On balance, the Project is considered appropriate to both:

- The site's location, which is located adjacent to an existing substation that would benefit from the grid services provided by this storage facility, and good access, requiring minimal road upgrades.
- The site's environmental values, which will allow the development of a Project with low impacts on neighbours, biodiversity, cultural heritage, soils and water resources.

Where to from here?

During the public exhibition of this EIS, the community, local council and government agencies are invited to make informed submissions in relation to the Project. The consent authority would consider any formal submissions made during the exhibition period. The Applicant's response to all matters raised in submissions will also be exhibited as Department of Planning, Housing and Infrastructure (DPHI) commence preparation of their own assessment of the Project's impacts and its merits and make a recommendation regarding its ability to be approved.

Please take the opportunity to make a submission directly to the DPHI and to participate in the future engagement activities planned prior to the Project's determination.

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Appendix A Secretary's Environmental Assessment Requirements

The following cross reference table is provided to demonstrate how the EIS has addressed the Project-specific Secretary's Environmental Assessment Requirements (SEARs) issued for the Project.

Issue summary	Addressed in this EIS
The Environmental Impact Statement (EIS) for the development must comply with the requirements in Part 8, of the Environmental Planning and Assessment Regulation 2021 (the EP&A Regulation) and must have regard to the Department's: • <i>State Significant Development Guidelines</i> (SSD Guidelines); and • <i>Renewable Energy Planning Framework</i>, and its supporting <i>Technical Supplement for Landscape Character and Visual Impact Assessment and the Benefit Sharing Guideline</i> (most recent version as updated from time to time) In particular, the EIS must include:	
A stand-alone executive summary.	Provided in this document, following the Table of Contents.
• A full description of the development, including: ○ details of construction, operation and decommissioning, including any staging of the development; ○ a description of the physical elements of the development including the form, maximum height and materials (including ancillary infrastructure); ○ a high quality site plan at an adequate scale showing all infrastructure and facilities (including any infrastructure, and accommodation camps, that would be required for the development, but the subject of a separate approvals process); ○ the Project Area (as per Table 1 of the SSD guidelines – preparing an environmental impact statement) and Development Footprint (disturbance area including but not limited to areas for infrastructure, road works, access tracks, defensible space, fencing and temporary laydown); ○ a high-quality detailed constraints map identifying the key environmental and other land use constraints that have informed the final design of the development; and	Descriptions and indicative designs are provided in Section 3 of this document. A Key Features map, showing all infrastructure and facilities of which the Project is comprised, is included as Figure 2-6. The Project is not designated development as it is classified as a State significant development. State significant development is excluded from designated development classification under Section 4.10 of the EP&A Act.

○ confirmation if the project is designated development in accordance with the Environmental Planning and Assessment Act 1979 (EP&A Act) and the EP&A Regulation;	
Consistency in information presented in the EIS and all technical reports, including distances, development footprint, project design and infrastructure proposed, construction time frames and receiver numbers;	This has been ensured through a rigorous document review process.
A strategic justification of the development focusing on site selection and the suitability of the proposed site with respect to potential land use conflicts with existing and future surrounding land uses (including existing land use, other proposed or approved energy facilities, major projects, rural/residential development, Crown lands within and adjacent to the Project Site and subdivision potential);	The project justification is included in Section 8 of this document. Potential land use conflict is assessed in Section 6.10.
A risk assessment of the potential environmental impacts of the development, identifying the key issues for further assessment;	Refer to Section 6 and Section 7 of this document.
• An assessment of the likely impacts of the development on the environment, and any other significant issues identified in this risk assessment, focusing on the specific issues identified below, including: ○ a description of the existing environment likely to be affected by the development using sufficient baseline data; ○ an assessment of the likely impacts of all stages of the development (which is commensurate with the level of impact), including any cumulative impacts of the site and existing, approved or proposed developments in the region and impacts on the site and any road upgrades, taking into consideration any relevant legislation, environmental planning instruments, guidelines, policies, plans and industry codes of practice including the <i>Cumulative Impact Assessment Guideline</i> (DPIE); ○ a description and assessment of staging of the project is proposed, including any site mobilisation or pre-construction works; ○ a description of the measures that would be implemented to avoid, mitigate and/or offset the impacts of the development; and ○ a description of the measures that would be implemented to monitor and report on the environmental performance of the development;	• A description of the baseline environment is included in Section 1.5 of this document. • An assessment of the likely impacts of all stages of the development is included in Section 6 and Section 7. • A description of Project staging is provided in Section 3.8. • A description of the monitoring and performance reporting measures is provided in Section 8.4.
A model for community benefit-sharing, prepared in accordance with the <i>Benefit-Sharing Guideline</i> , including the terms of any proposed voluntary planning agreement with relevant local council	Refer to Section 5.1.4 and Appendix D of this document.

A consolidated summary of all the proposed environmental management and monitoring measures, identifying all the commitments in the EIS; and	A list of all management plans to be completed is included in Section 8.4, the summarised mitigation commitments of the EIS are included in Appendix B.
• A detailed evaluation of the merits of the project as a whole having regard to: ○ the requirements in Section 4.15 of the Environmental Planning and Assessment Act 1979 (EP&A Act), and how the principles of ecologically sustainable development have been incorporated in the design, construction and ongoing operations of the development; ○ the suitability of the site with respect to potential land use conflicts with existing and future surrounding land uses; ○ feasible alternatives to the development and its key components, including siting and project design alternatives to avoid areas of biodiversity value, opportunities for shared infrastructure with proposed developments in the region, and the consequences of not carrying out the development; and ○ a detailed consideration of the capability of the project to contribute to the security and reliability of the electricity system in the National Electricity Market, having regard to local system conditions and the Department's guidance on the matter.	• Principles of ecologically sustainable development and their incorporation into Project design, are discussed in Section 8.6. • Site suitability, alternatives and consideration of the capability of the project to contribute to the security and reliability of the electricity system in the National Electricity Market are discussed in Section 2.2.
Estimated Development Cost and Employment • Provide the Estimated Development Cost (EDC) of the development prepared in accordance with the relevant planning circular using the Standard Form of EDC Report; • Provide an estimate of the retained and new jobs that would be created during the construction and operational phases of the development, including details of the methodology to determine the figures provided; • The development application must also be accompanied by: ○ the consent of the owner/s of the land (as required in Section 23(1) of the EP&A Regulation); and ○ a declaration from a Registered Environmental Assessment Practitioner that the EIS includes the information specified in the <i>Department's Registered Environmental Assessment Practitioner Guidelines</i>.	The EDC Report has been supplied directly to DPHI. Job estimates are discussed in Section 3.7.4 and included in Section 5. Landowner consents have been provided directly to DPHI. Registered Environmental Assessment Practitioner declaration is included following the Table of Contents.

Key Issues

Biodiversity	
- An assessment of the biodiversity values, and the likely biodiversity impacts of the project in accordance with Section 7.9 of the Biodiversity Conservation Act 2016 (NSW) (BC Act), having regard to the Biodiversity Assessment Method (BAM) 2020 and documented in a Biodiversity Development Assessment Report (BDAR). The BDAR must: - be prepared using the approved BDAR template; - document the application of the avoid, minimise and offset framework including assessing all direct, indirect and prescribed impacts in accordance with the BAM; - assess the impacts associated with all ancillary infrastructure, including the transport route road upgrades; - include an assessment for serious and irreversible impacts (SAIL) in accordance with Section 9.1 of the BAM; - include a strategy to offset any residual impacts of the development in accordance with the BC Act; and - be finalised by an accredited assessor as BAM-compliant within 14 days of submission; - an assessment of the likely impacts on listed aquatic threatened species, populations or ecological communities, scheduled under the Fisheries Management Act 1994, and a description of the measures to minimise and rehabilitate impacts; - a cumulative impact assessment of biodiversity values in the region from nearby developments; and - if an offset is required, details of the measures proposed to address the offset obligations.	A BDAR has been prepared. This document is summarised in Section 6.1 and is appended in full, as Appendix E.1. The Project does not require offsetting.
Heritage	
- An Aboriginal Cultural Heritage Assessment Report (ACHAR) prepared in accordance with the Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (OEH, 2011) and the Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW (DECCW, 2010), identifying, describing, and assessing any impacts to any Aboriginal cultural heritage sites or values associated with the site (including impacts from any proposed earthworks, construction works, and road works), and including results of archaeological test excavations (where required), undertaken in accordance with the relevant standards and requirements; - evidence of adequate and ongoing consultation with Aboriginal communities in determining and assessing impacts, identifying and selecting options for avoidance of Aboriginal cultural heritage	Aboriginal cultural heritage summarised in Section 6.2, Appended in full, Appendix E.2. Historic heritage included in Section 7.1

and identifying appropriate and mitigation measures (including the final proposed measures), having regard to the Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW, 2010) including the consultation process outlined within; and • assess the impact to historic heritage having regard to the <i>NSW Heritage Manual</i>.	
Land	
• a detailed justification of the suitability of the site and that the site can accommodate the proposed development having regard to its potential environmental impacts, land contamination, permissibility, strategic context and existing site constraints; • an assessment of the potential impacts of the development on existing land uses on the site and adjacent land, including: ○ agricultural land, flood prone land, nearby drinking water catchments, Crown lands, mining, quarries, mineral or petroleum rights (if relevant); ○ a soil survey to determine the soil characteristics and consider the potential for erosion to occur; ○ a cumulative impact assessment of nearby developments; and ○ the development potential of that land, in accordance with the <i>Large-Scale Solar Guideline</i>; and • an assessment of the compatibility of the development with existing land uses, during construction, operation and after decommissioning, including: ○ consideration of the zoning provisions applying to the land, including subdivision in consultation with Council (if proposed); ○ completion of a Land Use Conflict Risk Assessment in accordance with the Department of Industries <i>Land Use Conflict Risk Assessment Guide</i>; ○ an assessment of impact on agricultural resources and agricultural production on the site and region; and • A preliminary investigation into potential contamination across the site, in accordance with the State <i>Environmental Planning Policy (Resilience and Hazards) 2021</i> (Hazards SEPP) (as required).	Section 6.10 for Land use compatibility and LUCRA. Section 6.9 for soils and capability for rehabilitation with detailed assessment in Appendix E.9. Section 6.8 for water resources and flooding Section 6.9 for soil survey Cumulative impacts, refer Section 7.4 Mitigation measures Appendix B.
Visual	

• a detailed assessment of the likely visual impacts of all components of the project on surrounding residences (including approved developments, lodged development applications and dwelling entitlements), and key locations, scenic of significant vistas and road corridors in the public domain; • and details of measures to mitigate and/or manage potential impacts (including a draft landscaping plan for on-site perimeter planting, with evidence it has been developed in consultation with affected landowners).	Summarised in Section 6.6. Appended in full, Appendix E.5.
Noise	
• an assessment of the construction noise impacts (including impacts from proposed road upgrades) of the development in accordance with the Interim Construction Noise Guideline (ICNG), operational noise impacts in accordance with the NSW Noise Policy for Industry (2017), assess traffic noise having regard to the NSW Road Noise Policy (DECCW, 2011) and cumulative noise impacts (considering other developments in the area), including (where appropriate): ○ identification of impacts associated with construction, site emission and traffic generation at noise affected sensitive receivers, including the provision of operational noise contours; ○ details of noise monitoring survey, background noise levels and amenity noise levels at the most-affected residential receivers; ○ details of likely daily charging/discharging load profile, manufacturer specifications for plant and equipment and noise source inventory (including intensity, quantity, location, directivity and frequency information); ○ an assessment of 'worst case' noise emission scenarios during periods of discharging and charging; - consideration of annoying characteristics of noise and prevailing meteorological conditions in the study area; and details and analysis of the effectiveness of proposed management and mitigation measures to adequately manage identified impacts, including a clear identification of residual noise and vibration impacts following application of these mitigation measures and details of any proposed compliance monitoring programs.	Summarised in Section 6.7. Appended in full, Appendix E.7.
Transport	
• an assessment of the peak and average traffic generation, including light vehicles (including shuttle buses), heavy vehicles, heavy vehicles requiring escort, high risk heavy vehicles requiring escort (noting Table 1 in TfNSW Fact Sheet - Transport Management Plans for Over Size and/or Over-mass Movements in NSW) and construction worker transportation;	Summarised in Section 6.3. Appended in full, 0.

• an assessment of the likely transport impacts to the site access route(s) from the above listed vehicles including the site access point(s) and any Crown land, particularly in relation to the capacity and condition of the roads, road safety and intersection performance; • a concept Level Route Analysis required for heavy vehicles requiring escort and high risk heavy vehicles requiring escort; a cumulative impact assessment of traffic from nearby developments (including mining operations); and • provide details of measures to mitigate and / or manage potential impacts (developed in consultation with the relevant road authorities) including: ○ a schedule of all required road upgrades (including resulting from heavy vehicle and over mass / over dimensional traffic haulage routes), ○ strategic concept designs of proposed road upgrades (including the site access point); and ○ road maintenance contributions, and any other traffic control measures.	
Water and Soils	
• an assessment of the likely impacts of the development (including flooding and flood modelling) on surrounding watercourses (including their Strahler Stream Order), groundwater resources and surface water movements, and measures proposed to monitor, reduce and mitigate these impacts including water management • a site water balance for the development; • details of water requirements and supply arrangements for construction and operation (including consultation with suppliers); • a description of the erosion and sediment control measures that would be implemented to mitigate any impacts in accordance with Managing Urban Stormwater: Soils & Construction (Landcom, 2004) and Managing Urban Stormwater: Soils and construction – Volume 2A manual (Landcom, 2008); • assessment of the impacts of the development on hydrology and groundwater (if extraction or interference is proposed), including any changes to overland flows and groundwater levels on-site or off-site, and detail design solutions and operational procedures to manage impacts; • where the project involves works within 40 metres of any river, lake or wetlands (collectively waterfront land), identify likely impacts to the waterfront land, and how the activities are to be designed and implemented in accordance with the DPI Guidelines for Controlled Activities on	Summarised in Section 6.8, Flooding assessment appended in Appendix E.8. A description of the erosion and sediment control measures that would be implemented is included in the measures of Section 6.9 Site water balance Appendix E.13 Flood impacts Appendix E.9.

Waterfront Land (2018) and (if necessary) Why Do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings (DPI 2003), and Policy & Guidelines for Fish Habitat Conservation & Management (DPE, 2013); and • identification of any flood risk on site having regard to adopted flood studies, the potential effects of climate change and any relevant provisions of the NSW Flood Risk Management Manual; ○ where the development could alter flood behaviour, affect flood risk to the existing community or expose its users to flood risk, provide a flood impact and risk assessment (FIRA) prepared in accordance with the <i>Flood Impact and Risk Assessment – Flood Risk Management Guide LU01</i>; ○ detailed design solutions and operational procedures to mitigate flood risk where required.	
Hazards	
• <i>Health</i> - an assessment of potential hazards and risks including but not limited to fires, spontaneous ignition, electromagnetic fields or the proposed grid connection infrastructure against the International Commission on Non-Ionizing Radiation Protection (ICNIRP) Guidelines for limiting exposure to Time-varying Electric, Magnetic and Electromagnetic Fields; • <i>Bushfire</i> – a bush fire hazard assessment completed by a suitably qualified consultant and identify potential hazards and risks associated with bushfires / use of bushfire prone land including the risks that a BESS would cause a bush fire and demonstrate compliance with <i>Planning for Bush Fire Protection 2019</i>; • <i>Dangerous Goods</i> - a preliminary risk screening completed in accordance with the Hazards SEPP 2021; and <i>Battery Energy Storage System</i> - a Preliminary Hazard Analysis (PHA) prepared in accordance with <i>Hazardous Industry Planning Advisory Paper No. 6 – Guideline for Hazard Analysis</i> (DoP, 2011) and <i>Multi-Level Risk Assessment</i> (DoP, 2011). The PHA must consider all recent standards and codes and verify separation distances to on-site and off-site receptors to prevent fire propagation and compliance with <i>Hazardous Industry Planning Paper No. 4, Risk Criteria for Land Use Safety Planning</i> (DoP, 2011). The PHA must consider the effect of bushfires on batteries or other components of the BESS.	The PHA covers health and dangerous goods and is summarised in Section 6.4. Provided in full in Appendix E.4. Bushfire impacts are summarised in chapter 6.5 with detailed assessment in Appendix E.5.
Social	
• An assessment of the social impacts or benefits of the project for the region and the State as a whole in accordance with the <i>Social Impact Assessment Guideline</i> (DPE, 2023), including	Summarised in Section 6.11 Detailed assessment in Appendix E.12.

consideration of any increase in demand for community infrastructure services, and consideration of construction workforce accommodation.	
Economic	
An assessment of the economic impacts or benefits of the project for the region and the State as a whole and provide details of any proposed voluntary benefit sharing, having regard for the <i>Benefit-Sharing Guideline 2024</i> and <i>Private Agreement Guideline 2024</i>.	Appendix E.12
Waste	
identify, quantify and classify the likely waste stream to be generated during construction, operation, and decommissioning, and describe the measures to be implemented to manage, reuse, recycle and safely dispose of this waste (in consultation with waste facilities, including Council)	Section 7.2
Plans and Documents	
- The EIS must include all relevant plans, diagrams and relevant documentation required in accordance with the SSD Guidelines and under Part 3 of the EP&A Regulation. Provide these as part of the EIS rather than as separate documents. - In addition, the EIS must include high quality files of maps and figures of the subject site and proposal.	Provided throughout the EIS in the appropriate sections where required.
Legislation, Policies and Guidelines	
- The assessment of the key issues listed above must take into account relevant guidelines, policies, and plans as identified. - A list of some of the legislation, policies and guidelines that may be relevant to the assessment of the project can be found at: https://www.planning.nsw.gov.au/Policy-and-Legislation/Planning-reforms/ Rapid-Assessment-Framework/Improving-assessment-guidance; https://www.planningportal.nsw.gov.au/major-projects/assessment/policies-and-guidelines; and http://www.environment.gov.au/epbc/publications#assessments.	Applicable guidelines for each environmental parameter are stated in Sections 2 and 4.
Consultation	

• During the preparation of the EIS, you should consult with the relevant local, State or Commonwealth Government authorities, infrastructure and service providers, community groups, affected landowners and any exploration licence and/or mineral title holders. • In particular, you must undertake detailed consultation with affected landowners surrounding the development, the owners of all exploration licences across the proposed development site, the operator of any pipelines on or adjacent to the site, and all relevant government agencies, including the relevant local Council. • The EIS must: ○ detail how engagement undertaken was consistent with the Undertaking Engagement Guidelines for State Significant Projects (DPHI, 2024); and ○ describe the consultation process and the issues raised, and identify where the design of the development has been amended in response to these issues. Where amendments have not been made to address an issue, an explanation should be provided.	Section 5 and Appendix D.
Expiry Date	
If you do not lodge a Development Application and EIS for the development within 2 years of the issue date of these SEARs, your SEARs will expire. If an extension to these SEARs will be required, please consult with the Planning Secretary 3 months prior to the expiry date.	

Appendix B Consolidated mitigation measures

Environmental factor	ID	Mitigation Measures and Safeguards	Project Phase	Relevant Section
Biodiversity				
	B1	Habitat loss, displacement of resident fauna, injury or death of fauna - Trained fauna spotter catcher (FSC) and/or ecologist on site during clearing events to native vegetation: • Instigating clearing protocols, to include a trained ecologist or licensed wildlife handler to be present during clearing events of native and exotic vegetation (including planted and cropped) • Pre-clearance surveys should be completed in the 48 hours prior to clearing If threatened fauna are detected during pre-clearance surveys, an incidental finds protocol including comparative habitat assessments should be prepared for clearing sites and proposed release sites provided to ensure that habitat features are available in the released sites.	During construction (clearing)	Section 6.1, Appendix E.1
	B2	Habitat loss, displacement of resident fauna, injury or death of fauna - Installation of temporary frog exclusion fencing prior to construction to exclude Sloane's Froglet from the construction site. Specifications include: • Non-woven, smooth UV fabric • Installed to a height at least 60cm • Trenched into the ground at least 20cm	Pre-construction	
	B3	Inadvertent impacts on adjacent habitat or vegetation, including trampling - Clear physical demarcation of boundary between areas to be retained and areas proposed to be cleared. Biodiversity Management Plan (BMP) to include: • Documented clearance protocols to include demarcation (e.g. use of pickets or flagging) of vegetation to be retained • No clearing to occur outside the Development Footprint • No stockpiling or storage outside of the Development Footprint	Pre-construction and construction	

Environmental factor	ID	Mitigation Measures and Safeguards	Project Phase	Relevant Section
		- Tree Protection Zones (TPZs) for retained woodland - Clearing limits must be delineated prior to proposed commencement of clearing at each area		
	B4	Reduced viability of adjacent habitat due to increased noise - Avoid clearing / construction during night-time hours and during breeding season of threatened fauna species. Limited use of lighting	Construction	
	B5	Transport of weeds and pathogens from the site to adjacent vegetation Weed control and hygiene protocols - Biodiversity Management Plan (BMP) to include: - Weed control and Vehicle and machinery hygiene protocols to prevent spread of weeds and pathogens within Subject Land - Weed control should be completed by a suitably qualified person in the identification and management of weed species Hygiene protocols to align with NSW DPIE Hygiene guidelines - <i>Protocols to protect priority biodiversity areas in NSW from Phytophthora cinnamomi, myrtle rust, amphibian chytrid fungus and invasive plants</i> ((NSW DPIE, 2020)	Construction and operation	
	B6	Rubbish dumping - EMS to include: List or map of lawful locations for dumping construction rubbish	Construction	
	B7	Impacts of development on habitat connectivity: - Site access driveway final design to include safe amphibian passage along Whitehead Road - Culverts under site access driveway to provide safe passage for amphibians along Whitehead Road.	Final design / construction	
	B8	Vehicle speed limits implemented across the site during construction and operation - Vehicle impacts will be reduced by: - Limit vehicle speeds to 40km/h to reduce the risk of vehicle strike. - Construction activities are limited to daylight hours to reduce vehicle strikes	Construction and operation	

Environmental factor	ID	Mitigation Measures and Safeguards	Project Phase	Relevant Section
		of nocturnal fauna		
Aboriginal heritage				
	AH1	Under Section 89A of the NPW Act it is mandatory that all newly recorded Aboriginal sites be registered with AHIMS.	All phases	Section 6.2, Appendix E.2
	AH2	In the unlikely event that unexpected Aboriginal heritage items are encountered during the work the <i>Unanticipated Find Protocol</i> should be implemented (Appendix 4 of the ACHA). Appendix 5 of the ACHA provides the appropriate procedure to be undertaken in the unlikely event that human remains are encountered.	All phases	
	AH3	All land and ground disturbance activities must be confined to within the Development Footprint, as this will eliminate the risk of harm to potential Aboriginal objects that may be in adjacent landforms. Should the parameters of the Project extend beyond the assessed Development Footprint, then further archaeological assessment may be required.	All phases	
	AH4	Prior to undertaking any land or ground disturbance activities, all staff and contractors involved in the proposed work should undergo a cultural heritage induction to ensure that they can recognise Aboriginal artefacts (found in Appendix 6 of this ACHA) and are aware of the legislative protection requirements for all Aboriginal sites and objects under the NPW Act and are familiar with the <i>Unanticipated Finds Protocol</i> and the skeletal remains protocol.	All phases	
Access and traffic				
	T1	Prior to construction, a pre-condition survey of the relevant sections of the existing road network should be undertaken in consultation with Council. During construction these sections of the road network are to be monitored and maintained to ensure continued safe use by all road users, and any	Pre-construction and post-construction	Section 6.3, Appendix E.3

Environmental factor	ID	Mitigation Measures and Safeguards	Project Phase	Relevant Section
		faults attributed to construction of the BESS would be rectified. At the end of construction, a post-condition survey would be undertaken to ensure the road network is left in a condition equivalent to that at the start of construction.		
	T2	A Traffic Management Plan (TMP) is to be prepared and implemented in accordance with Australian Standard 1742.3 and the <i>Work Health and Safety Regulation 2017</i> and in consultation with Transport for NSW and Federation Council. The TMP would provide additional information regarding the traffic volumes and the distribution of construction vehicles that is not available at this time, including: - Road transport volumes, distribution and vehicle types, broken down into: - Hours and days of construction - Schedules for phasing / staging of the Project. - The origin, destination and routes for: - Employee and contractor light vehicles - Heavy vehicle traffic - Oversize/Overmass vehicles. - A map of the primary haulage routes, highlighting critical locations - An induction process for vehicle operators and regular toolbox meetings - A complaint resolution and disciplinary procedure - Local climatic conditions that may impact road safety of employees throughout all Project phases (e.g. fog, wet and significant dry, dusty weather).	All phases	
	T3	The TMP would include scheduling provisions including: - Consideration of heavy vehicles travelling during school bus times to limit the interaction of larger vehicles and vulnerable road users. - OSOM vehicle trips timed so they do not coincide with other OSOM vehicles within the surrounding area where warranted, to limit the impact to	All phases	

Environmental factor	ID	Mitigation Measures and Safeguards	Project Phase	Relevant Section
		the road network, which can be undertaken as part of the permit application.		
	T4	The TMP would include the implementation of a community information and awareness program would assist in managing the traffic impacts. Prior to construction commencing and during the construction period, a program of consultation shall be initiated to ensure local residents are aware of construction traffic accessing the Project. This program may include elements of the following, as appropriate to the phase of works: • Press releases in local newspapers • Specific emails, newsletters and individual letter drops to neighbouring residents along the access route to the Project • Provision of a website providing details of the status of works and contact details for complaints or enquiries • Provide key contact personnel and contact details, including out of hours contact information to residents, schools, public activities and business operating alongside the local route • Neighbours of the BESS would be consulted and notified regarding the timing of major deliveries which may require additional traffic control and disrupt access	Construction	
	T5	The TMP would include temporary speed limit reductions and suitable warning signs during construction on Bullecourt Road and Whitehead Street. The temporary reduction in speed would minimise safety risks on the access route to the Project Site and at the intersection of Bullecourt Road and Whitehead Street. If deemed necessary, additional warning signs advising of the changed traffic operations and heavy vehicles are to be appropriately located on approaches to and from the transport routes on Council roads. These should warn existing road users of changed traffic conditions. The use of day warning notices where signs are activated on a specific day to warn local road users of construction activities may	Construction	

Environmental factor	ID	Mitigation Measures and Safeguards	Project Phase	Relevant Section
		also be applied.		
	T6	On-site traffic protocols would be included in the TMP and include: - On-site speed restrictions - Appropriate dust suppression measures - Maintenance program for on-site access tracks to ensure safe access - Loading and unloading is proposed to occur within the work area. No street or roads would be used for material storage at any time - Sufficient car parking is to be provided on-site to ensure vehicles do not park on the surrounding road network - All car parking and loading areas to be designed in accordance with the relevant Australian Standard (2890 series) and Council requirements.	All phases	
	T7	A Driver Code of Conduct is to be implemented as a measure to maintain safety within and around the Project Site: - All vehicles would enter and exit the site in a forward direction - Heavy vehicle movements should avoid peak school bus times to limit the interaction of larger vehicles and vulnerable road users - Safety initiatives for impacts to residential areas and / or school bus zones - Utilisation of only the designated transport routes. - Construction vehicle movements are to abide by finalised schedules as agreed by the relevant authorities. All permits for working within the road reserve must be received from the relevant authority prior to works commencing.	Pre-construction	
Hazards – Preliminary Hazards Assessment				

Environmental factor	ID	Mitigation Measures and Safeguards	Project Phase	Relevant Section
	H1	The results of the PHA would be used as inputs into other safety studies required, including: • Emergency response plan • Fire safety study • Bush Fire Emergency Management and Evacuation Plan (BFEMEP) that identifies all relevant risks and mitigation measures associated with the construction and operation of the Project, including: ○ Detailed measures to prevent or mitigate fires igniting ○ Work that should not be carried out during total fire bans ○ Availability of fire-suppression equipment, access and water ○ Storage and maintenance of fuels and other flammable materials ○ Notification of the local NSW RFS Fire Control Centre for any works that have the potential to ignite surrounding vegetation, proposed to be carried out during a bushfire fire danger period to ensure weather conditions are appropriate ○ Appropriate bushfire emergency management planning.	All phases	Section 6.4 Appendix E.4
	H2	The Applicant would only procure a BESS where the OEM has conducted and documented full-scale fire testing in accordance with UL 9540A protocols, demonstrating non-propagation of thermal runaway between adjacent BESS units	Pre-construction	
	H3	Following a decision of the BESS OEM, the detailed design of the BESS will be undertaken to comply with the requirements of Section 3.2 of the PHA (Appendix E.4), including separation distances, UL9540A test reports and OEM recommendations	Pre-construction	
	H4	If the Applicant chooses to use the Tesla Megapack, all recommendations from the Victorian Big Battery Fire Statement of Technical Findings – Victorian Government 2021 will be implemented.	All phases	

Environmental factor	ID	Mitigation Measures and Safeguards	Project Phase	Relevant Section
Hazards – Bushfire				
	BF1	The detailed design is to comply with the assessments and assumptions made in the Bushfire Assessment. Changes may require reassessment to confirm compliance with relevant legislative requirements.	Pre-construction	Section 6.5 Appendix E.5
	BF2	A Bush Fire Emergency Management and Evacuation Plan (BFEMEP) will be developed for the Project prior to construction	Pre-construction	
Landscape character and visual amenity				
	VA1	Building design - Consider use of materials that integrate with the surrounding landscape Where practicable use suitable colours and finishes for project infrastructure to minimise visual impacts	Design	Section 6.6, Appendix E.6, Appendix E.7
	VA2	Dark Sky Planning guidelines and national light Pollution Guidelines for Wildlife will be considered during detailed design. Cut off and direct light fittings (or similar technologies would be used where appropriate to minimise glare and light spill onto private property.	Design	
	VA3	- Landscaping will be installed along the north and south of the BESS facility in accordance with the draft landscape plan. The final location and extent of landscaping will be determined during detailed design and development of a detailed Landscaping Plan post-approval. These would consider the key principals: - Planting should remain in keeping with existing landscape character - Species selection is to be typical of the area - Planting layout should avoid screening views of the broader landscape - Avoid the clearing of existing vegetation where possible. Where appropriate reinstate any lost vegetation. - Allow native vegetation to regrow over any areas of disturbance	Design	

Environmental factor	ID	Mitigation Measures and Safeguards	Project Phase	Relevant Section
Noise				
	N1	A noise management wall 3.5m high would be located as set out in noise assessment. Updated modelling may be required to demonstrate the final design complies at all receivers, in operation.	Design	Section 6.7, Appendix E.8
	N2	A construction noise management plan would be developed to reduce noise emissions and would include the following: - Plant and equipment should be properly maintained. - Avoid any unnecessary noise when carrying out manual operations and when operating plant. - Any equipment not in use for extended periods during construction work should be switched off. - Good relations with people living in the vicinity of the construction site should be established at the beginning of the Project and must be maintained throughout the Project. Keeping people informed of progress and taking complaints seriously and dealing with them expeditiously is critical. The person selected to liaise with the community should be adequately trained and experienced in such matters. - A management procedure would be put in place to deal with noise complaints that may arise from the construction works. Each complaint would need to be investigated, and appropriate noise amelioration measures be put in place to mitigate future occurrences, where the noise in question is more than allowable limits.	Construction	
Hydrology and flooding				
	H1	An elevated hardstand area of at least 141.25m AHD will be created on the Project Site to protect the site from flooding associated with the 1% AEP event, and to provide 500mm of freeboard.	Detailed Design	Section 6.8, Appendix E.9

Environmental factor	ID	Mitigation Measures and Safeguards	Project Phase	Relevant Section
Soils				
	SO1	Progressive and adaptive Erosion and Sediment Control Plans (ESCP) and a Soil and Water Management Plan (SWMP) will be prepared for the Project in accordance with Landcom Soils and Construction: Managing Urban Stormwater (Landcom, 2004) and include, but not be limited to: • Minimising the extent and duration of ground disturbance • Progressive rehabilitation of disturbed areas • Stockpile management of topsoil to prevent soil structural decline. Topsoil will be stripped and stockpiled separately. Stockpiles will be stabilised with a groundcover (i.e. geotextile or similar) if stockpiling is required for more than six weeks • A Spill Response Procedure • An Unexpected Finds Procedure, for contaminated soil • Maintain at least 70% groundcover where applicable throughout the site during operation to reduce the risk of erosion, subject to climatic conditions.	All phases	Section 6.9, Appendix E.10
	SO2	A comprehensive agronomic nutrient soil survey (including sampling and analysis) will be conducted prior to construction to: • Support preparation of the vegetation screening area to provide a growing environment which is conducive to achieving a successful vegetation screen. • Enable complete rehabilitation of the Project Site to restore the land to stable Agricultural land use following decommissioning. • Support rehabilitation plan (re-vegetation) • Support design process.	Preconstruction Decommissioning	
	SO3	A Revegetation and Rehabilitation Plan for decommissioning will be prepared and include stabilisation and topsoil amelioration (e.g., incorporation of organic matter to improve soil structure or gypsum to improve structure, reduce hard-setting surfaces and reduce soil dispersion).	Decommissioning	

Environmental factor	ID	Mitigation Measures and Safeguards	Project Phase	Relevant Section
	SO4	Avoid altering the groundwater and surface water regime to prevent mobilisation of any salt stores, however low, in the soil.	All phases	
	SO5	Soil survey results (Appendix E10), Australian Soil and Land Survey Handbook (CSIRO, 2009), Guidelines for Surveying Soil and Land Resources (CSIRO, 2008) and the Land and Soil Capability Assessment Scheme: second approximation (NSW OEH, 2012) will be referenced when returning the Project Site to its pre-construction state, so far as practical.	Decommissioning	
	SO7	A post decommissioning PSI with supplementary soil testing would be undertaken during the decommissioning phase. This would occur prior to significant soil disturbance / rehabilitative works. A Remediation Action Plan (RAP) will be developed, if contamination is identified within the site.	Decommissioning	
Land use compatibility				
	LU01	A Revegetation and Rehabilitation Plan is to be prepared in consultation with NSW Department of Primary Industries prior to decommissioning to return the Project Site to safe and productive agricultural land, as far as practical.	Decommissioning	Section 6.10, Appendix E.10
	LU02	Above ground and below ground cabling and infrastructure would be removed, where practical and in agreement with the host landholder.	Decommissioning	
	LU03	An agronomic soil survey would be undertaken post decommissioning to inform soil nutrient amelioration prior to revegetation.	Decommissioning	
	LU04	Land forming would return the site to a stable, safe and non-polluting state suitable for agricultural use or alternative land uses.	Decommissioning	

Environmental factor	ID	Mitigation Measures and Safeguards	Project Phase	Relevant Section
Socio and economic				
	SE1	Incorporate recommendations from independent technical assessments to refine project design and implementation Continuously review and adapt appropriate design and management measures to address evolving risks within the surrounding landscape.	Pre-construction	Section 6.11, Appendix E.12
	SE2	Implement benefit sharing commitments - Engage the community regularly for feedback and co-design implementation approaches to ensure benefits are fit for purpose and distributed fairly in the Federation Council and broader community. Voluntary Planning Agreement (VPA) negotiations had just commenced with Federation Council at the time of developing this report. - Where relevant, support and align activities with local council economic development plans, such as the Federation Council 'Economic Development Strategy 2021-2025'.	Ongoing	
	SE3	Post approval, develop and implement a Workforce Accommodation Plan - The plan's aim should be to ensure safe, sufficient and affordable accommodation for the Project's construction workforce while protecting the local housing market, tourism capacity, and enhancing local economic activity. It is a relatively short construction stage (approximately 18 months, peak six months period), which has informed the recommendations below. - Co-design plan with key stakeholders, for example the Federation Council, tourism associations, and accommodation providers. An initial list of these has been developed in Chapter 5. - Prioritise hiring locally (within a 60-minute drive of the site) to reduce pressure on local accommodation and housing requirements. Where practicable, focus on individuals with relevant skillsets or straightforward upskilling needs who already live in the area. Establishing a Local Content Plan and appropriate targets for local procurement has been explored in this SEIA report.	Pre-Construction	

Environmental factor	ID	Mitigation Measures and Safeguards	Project Phase	Relevant Section
		Avoid building a temporary construction accommodation facility for this Project in Corowa; it is not warranted due to the relatively short-construction period. Instead, explore partnering with an existing local accommodation or tourism facility operator in the area. For example, run a tender or expressions of interest process to facilitate construction stage accommodation supply (noting peak construction period is forecasted at six months). Coordinate with other proponents to minimise cumulative impacts, namely JBS, as construction stage requirements with JBS project timelines are likely to overlap. Engage early with the proposed contractors for engineering, procurement and construction to plan across projects to enhance local employment. Share workforce and accommodation requirement forecasts to avoid concurrent peaks. Reduce impact on other local industry sectors, especially agriculture, manufacturing and food processing. Examples of ways to do this include adopting provider booking protocols comprising rolling six-month and twelve-week work package forecasts (published via online platforms like the Industry Capability Network). Planned major events could also be published via an online calendar or similar communications tools (including social media channels) Provide worker transport via shuttle buses to reduce local road traffic on Whitehead Street. For example, buses could operate between accommodation nodes and the Project site along Whitehead Street. Implement designated parking areas to minimise traffic volumes and associated impacts on neighbours. Consult with housing providers and community services focusing on vulnerable groups, for example Amaranth and the Challenge Foundation (Corowa Branch), seniors, and low-income renters. Monitor early warning indicators such as rent escalation and displacement from short-stay accommodation. Consider mitigation measures including rental support partnerships, caps on private rental uptake by contractors, and the construction stage accommodation camp.		
	SE4	Post approval, develop and implement a Local Content Plan and appropriate targets based on regional capability This SEIA and the ongoing consultation process, coupled with data shared	Pre-construction	

Environmental factor	ID	Mitigation Measures and Safeguards	Project Phase	Relevant Section
		by the Industry Capability Network, has identified a range of local providers that will likely be capable of supporting construction stage activities. Refer to Chapter 7 for further details about what broad localisation target scenarios Lecroma advises is feasible after reviewing available data. - The plan should consider weighting / prioritisation of local hiring for procurement and supply chain matters. Noting the project site's proximity to several major energy projects proposed and nearing construction (see Chapter 8) and the South West Renewable Energy Zone, local capability is likely to increase. - The plan should also consider offering training/upskilling in energy sector construction industries for residents living in the Federation and surrounding LGAs to further increase local capability. This could be done in partnership with other projects and local institutions (e.g. with NSW/VIC TAFEs and Charles Sturt University). The plan should account for the benefit to local business of the temporary population increase during construction, especially local accommodation providers. This project could be seen as an opportunity to showcase regional lifestyle, liveability, tourism and economic opportunities for those working on the projects to improve longer term local skills retention. The local spend possibilities resulting from temporary workforce increases during construction stage should not be underestimated. The plan could incorporate a deliberate workforce diversity focus that opens meaningful employment pathways for local businesses and workers. This should be balanced with measures to manage potential downsides, such as competition for a limited pool of skilled labour, ensuring the project strengthens rather than strains the local workforce. Diversity isn't only demographic, it includes skills, industries, and training pipelines.		
	SE5	Continue consultation with key stakeholder groups throughout the life of the Project Conduct inclusive community engagement and support initiatives to build social license in Corowa and the social locality and support cohesion between the existing and new populations, particularly during the	Ongoing	

Environmental factor	ID	Mitigation Measures and Safeguards	Project Phase	Relevant Section
		construction stage. • Offer regular consultation and feedback opportunities, including by supporting local suppliers and businesses in procurement for the construction and operation stages. • Continue consultation with project neighbours, including about project impacts like landscape character and visual amenity, to ensure any impacts are managed in accordance with regulatory and community expectations. • Continue engagement with Bangarang Aboriginal Corporation and other First Nations representatives to ensure positive benefits of the Project are realised and concerns are heard and responded to appropriately. • Continue to collaborate with local authorities and service providers to plan for infrastructure and service upgrades in Corowa and beyond to meet increased demand. • Noting the relatively short construction stage, and that the Proponent is one of many businesses in the area, consider advocating for and/or investing in upgrades to health, education, childcare, and transport infrastructure, for example, by making contributions to road maintenance and upgrades where required. Facilitate partnerships with local service providers and suppliers to help reduce negative impacts of population increase during the construction stage. Consider timing of major regional events, including agricultural production cycles and tourist flows (peaks/troughs) in construction and operation stage planning.		
	SE6	Regularly review strategy and implementation of Corowa BESS Engagement Plan throughout the life of the Project • Ensure the plan adequately informs neighbours and the community of project activities, for example upcoming traffic-related impacts, including road upgrades. • Ensure the complaints management process is well known to neighbours and the community to reduce potential negative impacts on community cohesion and mental well-being.	Ongoing	

Environmental factor	ID	Mitigation Measures and Safeguards	Project Phase	Relevant Section
		Distribute updates to counter misinformation or confusion via mixed communication channels to stakeholder groups, as required, related to topics like land values, insurance, electricity reliability and prices.		
Non-Aboriginal heritage				
	NAH1	Should an item of historic heritage be identified, Heritage NSW would be contacted prior to further work being carried out in the vicinity in accordance with a Non-Aboriginal Heritage unexpected finds procedure. This plan is to be developed prior to the commencement of construction.	All Phases	Section 7.1
Resource use and waste generation				
	RR01	A Waste Management Plan (WMP) would be developed in consultation with Council to minimise waste, including: • Identification of opportunities to avoid, reuse and recycle, in accordance with the waste hierarchy. • Quantification and classification of all waste streams. • Confirmation and evidence of waste management agreements with waste facilities prior to the disposal of any waste product. • Defining appropriate lines of communication for each waste stream so any restrictions can be identified. • Provision for recycling management on-site. • Provision of toilet facilities for on-site workers and identify that sullage would be disposed of (i.e., pump out to local sewage treatment plant). • Tracking of all waste leaving the site. • Disposal of waste at licenced facilities permitted to accept the waste. • Requirements for hauling waste (such as covered loads).	Construction and operation	Section 7.2
	RR02	A septic waste management system would be installed and operated according to the Federation Shire Council regulations.	Construction Operation	

Environmental factor	ID	Mitigation Measures and Safeguards	Project Phase	Relevant Section
	RR03	Where possible, waste would be removed regularly to maintain the Development Footprint being litter free.	Construction	
	RR04	LFP Batteries would be kept, stored, managed and transported according to manufacturer’s instructions and the ADG Code. Any spent batteries would be recycled at a B-Cycle accredited, EPA permitted and licensed recycler of LFP batteries.	Construction Operation Decommissioning	
	RR05	Develop a Decommissioning Waste Management Plan, when the Project is planned for decommissioning.	Decommissioning	
Air quality and climate				
	A1	Management protocols in the EMS will include measures to minimise impacts on air quality including: • Identification of high-risk construction activities with potential to generate dust, and control measures for the activities • A process for monitoring dust on-site and weather conditions, as well as procedures for altering management measures where required, and periods where dust generating works should not take place (e.g. during high winds) • A map identifying locations of nearby receivers • Notification of relevant stakeholders to hours of work and duration of work • An accessible complaints process with a timely response protocol.	All phases	Section 7.3
	A2	Dust generation by vehicles accessing the site and earthworks at the site will be suppressed using water applications or other means as required, using visual cues. • Covering dirt, sand, soil, or any lose material while in transport • Clean-up of any material spillage on the roads • Limiting construction vehicle speeds on unsealed roads	Construction Decommissioning	

Environmental factor	ID	Mitigation Measures and Safeguards	Project Phase	Relevant Section
		Checking of weather conditions (such as wind strength and direction) prior to major potential dust emitting activities		
	A3	Stockpiles will be covered or stored in areas not subject to high wind, and vehicle loads of material which may create dust would be covered while using the public road system.	Construction Decommissioning	
	A4	All vehicles and machinery used at the site will be in good condition, fitted with appropriate emission controls and comply with the requirements of the POEO Act, relevant Australian standards and manufacturer's operating recommendations. Plant will be operated efficiently and turned off when not in use.	All phases	
	A5	Fires and material burning is prohibited on site.	All phases	

Appendix C Statutory compliance table

Appendix C.1 Section 4.15(1) of the EP&A Act

Matter	Section addressed
(a) the provisions of: (i) any environmental planning instrument, and (ii) any proposed instrument that is or has been the subject of public consultation under this Act and that has been notified to the consent authority (unless the Planning Secretary has notified the consent authority that the making of the proposed instrument has been deferred indefinitely or has not been approved), and (iii) any development control plan, and (iiia) any planning agreement that has been entered into under section 7.4, or any draft planning agreement that a developer has offered to enter into under section 7.4, and (iv) the regulations (to the extent that they prescribe matters for the purposes of this paragraph),	(i) Section 4 (ii) Section 4 (iii) Not applicable to SSD's under the provisions of the Planning Systems SEPP (iiia) Section 2.3 (iv) Appendix C.2
(b) the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality,	Section 6 and Section 7.
(c) the suitability of the site for the development,	Section 2 and Section 8.
(d) any submissions made in accordance with this Act or the regulations,	Facilitated by public exhibition on the DPHI planning portal.

Matter	Section addressed
(e) the public interest.	Section 5 and the NSW SSD process.

Appendix C.2 Division 5 Environmental Planning and Assessment Regulation 2021

Matter	Section addressed
Section 190 Form of an environmental impact statement	
(1) An environmental impact statement must contain the following information— (a) the name, address and professional qualifications of the person who prepared the statement, (b) the name and address of the responsible person, (c) the address of the land— (i) to which the development application relates, or (ii) on which the activity or infrastructure to which the statement relates will be carried out, (d) a description of the development, activity or infrastructure, (e) an assessment by the person who prepared the statement of the environmental impact of the development, activity or infrastructure, dealing with the matters referred to in this Division.	(a) REAP certification page (b) REAP certification page, Author Qualifications and Section 1.5 (c) Section 2.1.2 (d) Section 2.5 (e) Certification page
(2) The person preparing the statement must have regard to— (a) for State significant development—the State Significant Development Guidelines, or (b) for State significant infrastructure—the State Significant Infrastructure Guidelines.	REAP certification page

Matter	Section addressed
(3) An environmental impact statement must also contain a declaration by a relevant person that— (a) the statement has been prepared in accordance with this Regulation, and (b) the statement contains all available information that is relevant to the environmental assessment of the development, activity or infrastructure, and (c) the information contained in the statement is not false or misleading, and (d) for State significant development or State significant infrastructure—the statement contains the information required under the Registered Environmental Assessment Practitioner Guidelines.	REAP certification page
Section 191 Compliance with environmental assessment requirements	
The environmental impact statement must comply with the environmental assessment requirements notified under section 176 or the Act, section 5.16(4).	Appendix A
Section 192 Content of environmental impact statement	
(1) An environmental impact statement must contain the following— (a) a summary of the environmental impact statement, (b) a statement of the objectives of the development, activity or infrastructure, (c) an analysis of feasible alternatives to the carrying out of the development, activity or infrastructure, considering its objectives, including the consequences of not carrying out the development, activity or infrastructure, (d) an analysis of the development, activity or infrastructure, including— (i) a full description of the development, activity or infrastructure, and	(a) Executive summary (b) Section 1.4 (c) Section 2.4 (d) (i) Section 2.5 (ii) Section 3, Section 6 and Section 7. (iii) Section 6 and Section 7 (iv) Section 6 and Appendix B

Matter	Section addressed
(ii) a general description of the environment likely to be affected by the development, activity or infrastructure and a detailed description of the aspects of the environment that are likely to be significantly affected, and (iii) the likely impact on the environment of the development, activity or infrastructure, and (iv) a full description of the measures to mitigate adverse effects of the development, activity or infrastructure on the environment, and (v) a list of the approvals that must be obtained under another Act or law before the development, activity or infrastructure may lawfully be carried out, (e) a compilation, in a single section of the environmental impact statement, of the measures referred to in paragraph (d)(iv), (f) the reasons justifying the carrying out of the development, activity or infrastructure, considering biophysical, economic and social factors, including the principles of ecologically sustainable development set out in section 193.	(v) Section 8.3 and Section 8.5, and Appendix C (e) Appendix B (f) Section 2 and Section 8

Appendix C.3 Statutory compliance list

Statute	Section addressed
Commonwealth statutes	
<i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act)	Section 1.1, Section 4, Section 6.1 and Appendix E.1
<i>Native Title Act 1993</i>	Section 4
NSW statutes	

Statute	Section addressed
Environmental <i>Planning and Assessment Act 1979</i> (EP&A Act)	Section 1.1, Section 3.1, and Section 4, and Appendix D
Environmental Planning and Assessment Regulation 2021	Section 1.1, Section 4, and Appendix D
Environment Protection and Biodiversity Conservation Regulations 2000	Section 4 and Appendix E.1
<i>Roads Act 1993</i> (Roads Act)	Section 4
Protection of the Environment Operations Act 1997 (POEO Act)	Section 4
Crown Lands Management Act 2016 (CLM Act)	Section 4
<i>Conveyancing Act 1919</i>	Section 4
<i>Fisheries Management Act 1994</i> (FM Act)	Section 4
Heritage Act 1977	Section 4
<i>National Parks and Wildlife Act 1974</i> (NPW Act)	Section 4
<i>Rural Fires Act 1997</i>	Section 4
<i>Water Management Act 2000</i> (WM Act)	Section 4
<i>Biodiversity Conservation Act 2016</i>	Section 4 and Section 6.1
NSW planning policies and local provisions	
State Environmental Planning Policy (Planning Systems) 2021 (Planning Systems SEPP)	Section 4
State Environmental Planning Policy (Transport and Infrastructure) 2021 (TISEPP),	Section 4, Section 6.4 and Appendix E.4
State Environmental Planning Policy (Resilience and Hazards) 2021	Section 4, Section 7.3 and Appendix E.8
State Environmental Planning Policy (Biodiversity and Conservation) 2021	Section 4, Section 6.1 and Appendix E.1

Environmental Impact Statement

Corowa Battery Energy Storage System

Statute	Section addressed
State Environmental Planning Policy (Primary Production and Rural Development) 2021	Section 4, Section 6.9 and Appendix E.10
Corowa Local Environmental Plan 2012	Section 4

Appendix D Community and stakeholder engagement

Appendix E Specialist technical reports

Appendix E.1 Biodiversity Development Assessment Report

Appendix E.2 Aboriginal Cultural Heritage Assessment Report

Appendix E.3 Traffic Impact Assessment Report

Appendix E.4 Preliminary Hazards Assessment

Appendix E.5 Bushfire Assessment Report

Appendix E.6 Landscape Character and Visual Impact Assessment

Appendix E.7 Landscaping Plan

Appendix E.8 Noise and Vibration Impact Assessment

Appendix E.9 Desktop Flood Review and Hydrological Investigation

Appendix E.10 Soil Technical Report

Appendix E.11 Preliminary Site Investigation

Appendix E.12 Social and Economic Impact Assessment

Appendix E.13 Site Water Balance

Appendix E.14 Flood Modelling Report

NGH Pty Ltd

NSW • ACT • QLD • VIC

ABN 31 124 444 622 ACN 124 444 622

E: nggh@ngghconsulting.com.au

GOLD COAST

2B 34 Tallebudgera Creek Road
Burleigh Heads QLD 4220

T. (07) 3129 7633

SYDNEY REGION

Suite 9.01, Level 9, 28 Foveaux Street
Surry Hills NSW 2010

T. (02) 8202 8333

BEGA

Suite 11, 89-91 Auckland Street
(PO Box 470)
Bega NSW 2550

T. (02) 6492 8333

MELBOURNE

Level 14, 10-16 Queen Street
Melbourne VIC 3000

T: (03) 7031 9123

TOWNSVILLE

Level 4, 67-75 Denham Street
Townsville QLD 4810

T. (07) 4410 9000

BRISBANE

T3, Level 7, 348 Edward Street
Brisbane QLD 4000

T. (07) 3129 7633

**NEWCASTLE - HUNTER &
NORTH COAST**

2 Dick Street
Newcastle West NSW 2302

T. (02) 4929 2301

**WAGGA WAGGA - RIVERINA &
WESTERN NSW**

35 Kincaid Street (PO Box 5464)
Wagga Wagga NSW 2650

T. (02) 6971 9696

CANBERRA

Unit 8, 27 Yallourn Street
(PO Box 62)
Fyshwick ACT 2609

T. (02) 6280 5053

SUNSHINE COAST

Building 1, 30 Chancellor Village Boulevard
Sippy Downs QLD 4556

T: 13 54 93

WODONGA

Unit 2, 83 Hume Street
(PO Box 506)
Wodonga VIC 3690

T. (02) 6067 2533