Environmental Impact Statement

Panorama Battery Energy Storage System (BESS)

Panorama BESS SubCo Pty Ltd

Citic House, Level 4, Suite 4.02, 99 King Street, Melbourne, Victoria, 3000

Prepared by:

SLR Consulting Australia Pty Ltd

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2305

SLR Project No.: 660.30234.00000

31 May 2024

Revision: v1.3

Revision Record

Revision	Date	Prepared By	Checked By	Authorised By
V1.0	18 September 2023	Kiera Plumridge	Melissa Thomas	Kiera Plumridge
V1.1	5 October 2023	Kiera Plumridge	Melissa Thomas	Etosha Milner
V1.2	3 April 2024	Melissa Thomas	Katie Shultz	Katie Shultz
V1.3	31 May 2024	Melissa Thomas	Chelsea Milles	Chelsea Milles

Environmental Impact Statement Declaration

Project Details	
Project Name	Panorama Battery Energy Storage System
Application Number	SSD-50587460
Address of the land in respect of which the development application is made	Lot 2 DP 864272 at 800 Mid Western Highway and Lot 521 DP 603541 at 749 Mid Western Highway, Evans Plains, NSW, 2795
Applicant Details	
Applicant Name	Panorama BESS SubCo Pty Ltd as trustee for the Panorama BESS Unit Trust
Applicant Address	Citic House, Level 4, Suite 4.02, 99 King Street, Melbourne, Victoria, 3000
Details of Person by whom this EIS was Prepared	
Name	Kiera Plumridge
Address	Unit 10, 8-14 Kings Road, New Lambton NSW 2305
Professional qualifications	Bachelor Environmental Science and Management, Master Environment and Business Management
Declaration by Registered Environmental Assessment Practitioner	
Name	Melissa Thomas
Registration number	9274
Organisation registered with	SLR Consulting
Declaration	
The undersigned declares that this EIS: • Has been prepared in accordance with the Environmental Planning and Assessment Regulation 2021; • 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 Planning 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 State Significant Development Guidelines - Preparing an Environmental Impact Statement; • 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; and • Contains an accurate summary of the detailed technical assessment of the impacts of the project as a whole.	
Signature	
Date	31 May 2024

Executive Summary

Introduction

Panorama BESS SubCo Pty Ltd (Panorama BESS SubCo) proposes to construct, operate, and decommission a Battery Energy Storage System (BESS) with a capacity of 100 Megawatts (MW) 200 Megawatt Hours (MWh) and associated ancillary infrastructure adjacent to an existing 132 Kilovolt (kV) substation operated by TransGrid in Evans Plains, NSW (henceforth referred to as 'the Project').

The site of the proposed BESS (hereafter referred to as the Project site) is located on Lot 2 DP 864272 at 800 Mid Western Highway and Lot 521 DP 603541 at 749 Mid Western Highway, Evans Plains, NSW, 2795. The development site is located approximately 2.5 kilometres (km) to the west of the suburb of Robin Hill and approximately 5.8km south-west of the City of Bathurst (refer to **Figure ES-1** below).

The BESS will consist of SolBank BESS containers (or enclosures). SolBank is a lithium iron phosphate (LiFePO4) chemistry-based battery enclosure with up to 2,800 kWh of usable energy capacity, specifically engineered to be one of the safest and most reliable systems for utility-scale applications.

The Project aims to add significant benefits to the NSW electricity grid because it allows for the dispatch of energy in accordance with market demand to assist in load leveling and grid support to balance the natural fluctuations in electricity demand throughout the day and reduce congestion on the local grid. Additionally, it will play an important role in providing stability to the NSW energy network by charging up during the day when renewable energy generation is high and then providing that power back to the grid at night to support high demand.

The BESS has been located along a major transmission route which is aligned with the Federal Government's as Renewable Energy Target. The Project also aligns with The NSW Electricity Strategy and NSW Government's Net Zero Plan.


LEGEND
Lot Boundary
State Border
Wellington
Cudgegong River
Kandos
A32
B55
1088 m
Molong
Castlereagh Hwy
Gardens of Stone National Park
The Escort Way
Orange
Sunny Corner State Forest
1392 m
Macquarie River
Portland
Newnes State Forest
Canobolas State Forest
Mitchell Hwy
Bathurst
Location of Proposed BESS
Lithgow
Blayney
Coxs River
A41
1372 m
Oberon
Jenolan State Forest
1381 m
Vulcan State Forest
Kanangra-Boyd
Wyangala Reservoir
Abercrombie River
Crookwell River
Boorowa
Crookwell
Queensland
South Australia
New South Wales
BATHURST
SYDNEY
Victoria
Scale: 1:28,000,000
0
25
50
km
Scale: 1:900,000 at A4
Coordinate System: GCS GDA 1994
Date Drawn: 10-Jul-2023
Project Number: 660.30234
Data Source: Basedata, NSW SS, 2022, Geoscience Australia
Basemap supplied by ESRI and other sources
SLR
REGIONAL CONTEXT OF THE SITE
ES-1
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Project Overview

The Project will involve the development, construction, operation, and eventual decommissioning of a BESS with a capacity of 100 MW, 200 MWh adjacent to the existing 132 kV substation operated by TransGrid. The BESS will consist of SolBank BESS containers (or enclosures) in 'back-to-back' formation in two north-south aligned rows. Each SolBank container has dimensions of 6058 mm by 2438 mm by 2896 mm, with an approximate weight of 30,000 kg. The BESS will be supported by inverters which will convert the electricity from the BESS and connect to the existing TransGrid substation via approximately 100 m of 132kV underground cable.

The key elements of the Project include the following:

- Installation and operation of a SolBank BESS including battery enclosures, inverters, and transformers;
- Associated ancillary infrastructure including:
    - A 132kV underground cable connecting a 33/132kV switch building to the existing substation;
    - Formalisation of existing access from Mid Western Highway and existing access road within Lot 2 DP 864272 to accommodate heavy vehicles;
    - Proposed access road from the BESS to connect to the existing access road within Lot 2 DP 864272;
    - Operations and maintenance building;
    - Stormwater management infrastructure, lighting, and security fencing; and
    - Construction laydown areas.

Decommissioning of the SolBank BESS at the End of Life (EOL) includes disassembly and removal of associated infrastructure from the site, to be returned as close as possible to its existing condition.

Construction of the Project is anticipated to take approximately 14 to 15 months. It is expected that the operational life of the Project would be approximately 20 years, after which the BESS would be decommissioned and the infrastructure removed, returning the site to its original use.

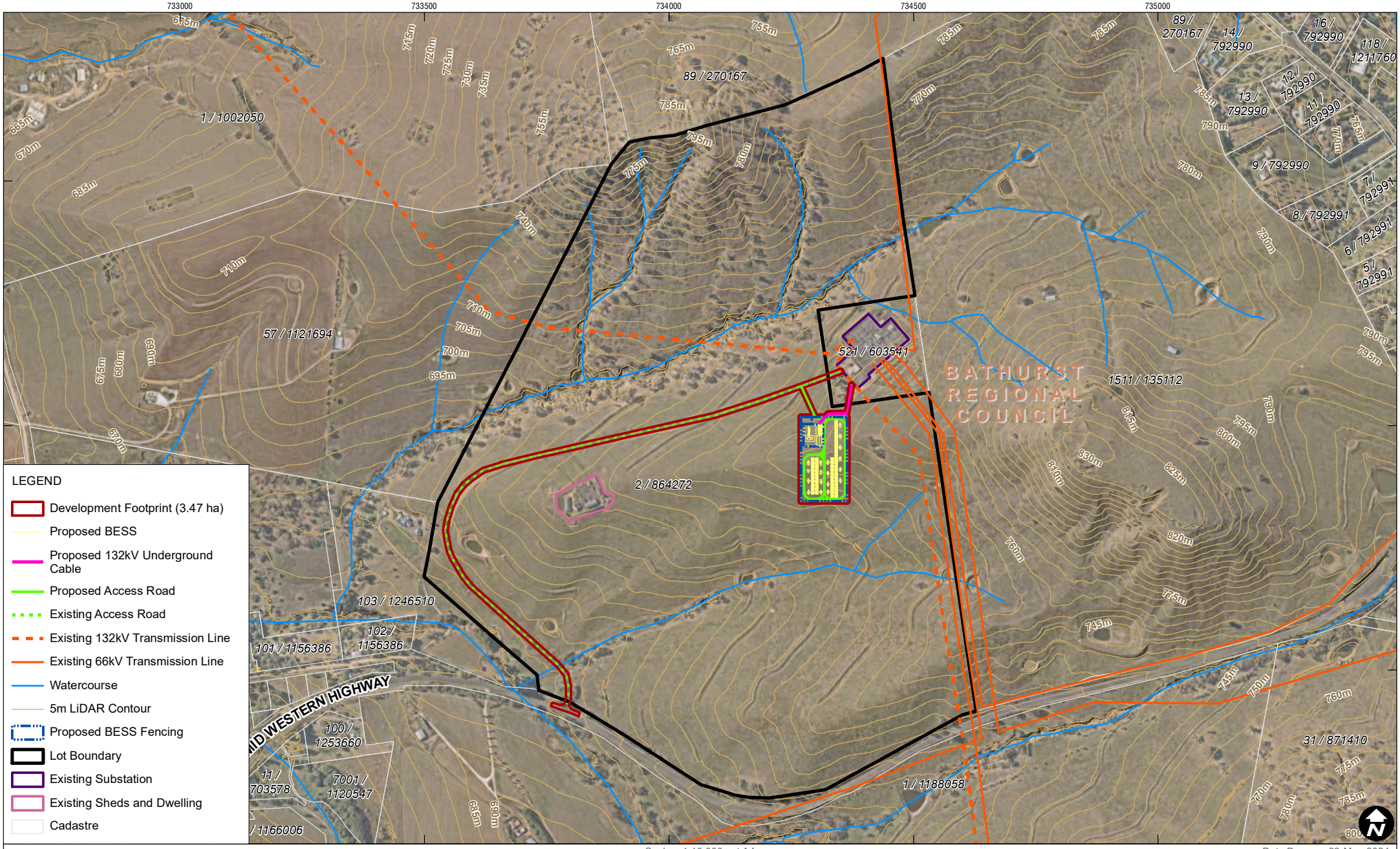
The key aspects of the Project are summarised in **Table ES-1** below:

Table ES-1: Project Summary

Project Element	Description
Key Features	• Construction, operation, and eventual decommissioning of a Battery Energy Storage System (BESS) with a capacity of 100 Megawatts (MW) 200 Megawatt Hours (MWh) and associated ancillary infrastructure adjacent to an existing 132 kV substation operated by TransGrid in Evans Plains, NSW (henceforth referred to as 'the Project'). • Connection of the BESS via a new underground transmission line (132kV) to the existing Transgrid substation.
Proposed Development	The Project would generally involve the following components: • Transport of construction personnel, associated heavy and light vehicles, and materials to and from site on a day-to-day basis, dependent on construction schedule; • Site establishment works including vegetation clearing, bulk earthworks, and temporary construction compound;

Project Element	Description
	• Road works to formalise internal site access road to accommodate heavy vehicles, construction of new access road from the BESS to connect to the existing access road within Lot 2 DP 864272, and construction of an upgrade to the Mid Western Highway site entry to provide a Basic Left Turn (BAL) treatment at the access driveway crossover; • Construction of concrete pad and installation of operations and maintenance (O&M) building, battery enclosures, and inverter stations; • Construction of underground 132 kV transmission cable and switch building to facilitate connection to the existing Transgrid 132kV substation in the north-eastern portion of the site; • Construction of ancillary works including stormwater management infrastructure, emergency night lighting, and security fencing; and • Removal of temporary construction facilities, and rehabilitation of disturbed areas following completion of construction of the Project.
Site Description	• The Project would be constructed on Lot 2 DP 864272 at 800 Mid Western Highway, Evans Plains NSW. • The existing TransGrid substation that the BESS would be connected to via underground cabling is located on Lot 521 DP 603541 at 749 Mid Western Highway, Evans Plains NSW.
Site Access	• Access to the site would be via the existing site crossover on Mid Western Highway that services the TransGrid substation on Lot 521 DP 603541, via the construction of an upgrade to the Mid Western Highway site entry to provide a Basic Left Turn (BAL) treatment at the access driveway crossover. The internal access road is planned to be formalised to accommodate heavy vehicles associated with the construction of the BESS. • An additional connection road will be constructed from the existing internal road to the BESS.
Grid Connection	A new underground transmission line (132kV) will be constructed to connect the BESS substation switch building, to the existing Transgrid substation to the immediate north-east.
Construction Duration	Construction of the Project is anticipated to take approximately 14 to 15 months.
Operation Life Expectancy	The operational life of the Project is anticipated to be approximately 20 years.
Decommissioning	The Project would be decommissioned, and the infrastructure removed, returning the site to its original use following the approximate 20 year life expectancy.

The development footprint of the Project can be seen **Figure ES-2** below.



Scale: 1:10,000 at A4
Coordinate System: GDA 1994 MGA Zone 55

Date Drawn: 22-May-2024
Project Number: 660.30234.00000

Data Source: Basedata NSW SS, December 2021
Aerial imagery supplied by Nearmap (March, 2024)
Elevation data supplied by DCS Spatial Services (July, 2019)

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PROJECT SITE PLAN

ES-2

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Statutory Context

The Project is deemed to be State Significant Development (SSD) being an electricity generating works development with a Estimated Development Cost (EDC) higher than $30 million. The project therefore requires assessment and approval in accordance with Part 4, Division 4.7 of the Environmental Planning and Assessment Act 1979 (NSW) (EP&A Act).

Panorama BESS SubCo have engaged SLR Consulting Australia Pty Ltd (SLR) to prepare this EIS to address the Secretary Environmental Assessment Requirements (SEARs), issued by the NSW Department of Planning, Housing and Infrastructure (DPHI), for the project, SSD-50587460 dated 9 December 2022 (**Appendix A**). The EIS has also been prepared in accordance with the *NSW Environmental Planning and Assessment Regulation 2000* and under the guidance of the *state significant development guidelines - preparing an environmental impact statement* (DPE 2021).

Consultation and Engagement

An Aboriginal Cultural Heritage Assessment Report (ACHAR) was prepared for the Project by Austral Archaeology (2023) with early consultation consisting of notification of the Project and registration of interest of relevant bodies and Registered Aboriginal Parties (RAPs). Five (RAPs) were identified for the Project and have been involved in the preparation of the ACHAR and associated test excavations in accordance with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (DECCW, 2010).

General community and stakeholder consultation associated with the Project has been conducted with an initial letter campaign requesting engagement on the Project issued on 10 October 2022, and a subsequent letter containing a Project update and FAQ section was issued on 21 March 2023.

A Project website was also created with Project information, approximate approval timelines, an FAQ section, as well as avenues to contact the Project team for questions. The link to the website was included in the second letter issued 21 March 2023 to support community members in finding Project updates (https://panoramabattery.com.au/).

Community consultation drop-in sessions were held on 4 and 5 December 2023 at the Bathurst City Bowling Club, with Recurrrent Energy representatives present.

Feedback from the engagement completed during the preparation of the EIS with the community in relation to this Project showed a general support for renewable energy and identified a small number of concerns around the potential impacts on local residents such as:

- Noise;
- Traffic access;
- Land value impacts;
- Fire risk;
- Visual impacts (including lighting); and
- Dust and erodibility of soils.

Matters raised through consultation as identified above and agency requests made through the requirements of the issued SEARs have been addressed within the EIS for the Project and accompanying impact assessment reports and associated recommended mitigation and management measures.

Impact Assessment

A number of comprehensive technical investigations have been completed by appropriately qualified and experienced personnel for the Project to ensure potential environmental and social impacts associated with the development are appropriately assessed. The investigations have also identified management measures to be implemented for the duration of the Project to avoid or mitigate the identified impacts.

The findings of the technical investigations are summarised in the main body of this EIS and are provided in full in the appendices. The following sub-sections provide an overview of the key findings.

Noise And Vibration

The Noise and Vibration Impact Assessment (SLR Consulting, 2024) (NVIA) (located at **Appendix F**) prepared for the Project identified the following sensitive receivers relevant to the Project, as summarised in **Table ES-2** below.

Table ES-2: Nearest Surrounding Sensitive Receivers

Sensitive receiver no.	Address	Receiver Type	Distance (m)	Direction
R1*	800 Mid Western Highway, Evans Plains	Residential	490	West
R2	16 Stewart Street, Evans Plains	Residential	790	West
R3	24 Stewart Street, Evans Plains	Residential	950	West/South-West
R7	831 Mid Western Highway, Evans Plains	Residential	870	South West
R35	403 Evans Plains Road, Evans Plains	Residential	1340	West
R9-R11	McLennan Close, Robin Hill	Residential	1210	East/South-East
R12-R23	Windemere Road, Robin Hill	Residential	990	North-East
R24-R33	Hartwood Avenue, Robin Hill	Residential	1,480	North
	Transgrid Substation	Industrial	100	North/North-East

**R1 is a host property.*

Unattended and attended ambient noise monitoring was conducted Friday 28 October 2022 to Thursday 22 November 2022 at three (3) locations, two in Robin Hill and one at Evans Plains. The unattended and attended ambient noise monitoring results are consistent with those of a semi-rural area as defined in the *Noise Policy for Industry* (NPfI) prepared by the NSW EPA (2017).

Construction noise modelling was undertaken using SoundPlan v8.2 software, with the significant noise generating stages/scenarios of the Project for the purposes of modelling identified as follows:

- Scenario 1 - Site Establishment;
- Scenario 2 - Enabling and earthworks; and
- Scenario 3 - Civil works and build construction.

Noise modelling concluded that the predicted Equivalent Continuous Sound Pressure Level (LAeq) 15 minute noise levels modelled for the construction of the Project have the potential to exceed the Noise Management Levels (NMLs) at certain times when the noisiest works

are occurring. The worst-case impacts are, however, only likely to occur for relatively short times of the total Project duration and the works would be limited to standard daytime construction hours, with no evening or night-time works required.

Operational noise assessment identified that all predicted LAeq, 15 minute noise levels for operational activities for the Project are below the Project noise trigger levels (PNTL) at all identified sensitive receivers. Cumulative noise emissions from the BESS (including the substation) and the adjacent Transgrid substation were also considered, and cumulative LAeq, 15 minute noise levels during noise enhancing weather conditions (i.e. worst-case) are still expected to remain below the most stringent night time criteria of 35 A-weighted decibel (dBA).

A number of best-practice mitigation and management measures will be applied for both the construction and operational phases of the Project where feasible and reasonable, to control and minimise the impacts during construction as far as practicable. A Noise Management Plan has been prepared for the Project and is included at **Appendix F.**

Biodiversity

The Biodiversity Development Assessment Report Waiver Report (SLR Consulting, 2023) (BDAR Waiver Report) (located in **Appendix G**) prepared for the Project concluded that the Project site contains very limited or negligible biodiversity values, with the only notable feature of biodiversity value being a small patch of native trees, which through the application of avoidance measures during the design and siting of the BESS compound, will be retained *in situ*. The Project will require disturbance to areas of exotic pasture grass, which provide only negligible to marginal foraging habitat for some highly mobile threatened fauna species and the removal of this vegetation is not likely to result in a significant impact on any threatened species. The Project site does not contain any vegetated links or fauna movement corridors and the proposed development will not affect movement of threatened or migratory species through the landscape.

Consequently, the Project has been assessed as unlikely to have a significant impact on the limited biodiversity values of the site. Due to this context, a request to waive the requirements of the SEARs and the BC Act to the extent that a BDAR is not required for the Project SSD application was made to DPHI on 22 March 2023, and the waiver was issued 21 April 2023.

Aboriginal Heritage

An Aboriginal Cultural Heritage Assessment report (ACHAR) (Austral Archaeology, 2023) (ACHAR) (located in **Appendix H**) has been prepared for the Project.

No registered AHIMS sites were identified within the broader Project site boundary. A site survey was conducted on 20 December 2022 by a qualified archaeologist with assistance from a representative from the Bathurst Local Aboriginal Land Council (BLALC), to identify and record Aboriginal archaeological sites visible on the ground surface and areas of potential archaeological deposits (PADs). No surface Aboriginal cultural heritage objects were identified, however it was decided that test excavations were necessary to confirm the presence of Aboriginal material within the Project site given the presence of high, moderate, and low archaeological potential across the Project site.

A test excavation program was completed between 13 March 2023 and 17 March 2023, where all areas of archaeological potential were tested, which revealed a total of five (5) artefacts across three (3) transects within the Project site.

Assessment concluded that there would be a direct impact and total loss of value to two identified Aboriginal sites identified during a test excavation program, as follows:

- Evans Plains AS1 (44-3-0282) is a low-density artefact scatter comprised of four artefacts located at the bottom of a slope adjacent to a drainage depression. Based on the varying artefact types within Evans Plains AS1 (44-3-0282), the site was assessed to have research and social or spiritual significance; and
- Evans Plains IF1 (44-3-0283) is an isolated artefact find located upon a ridgeline. Due to the rarity of Evans Plains IF1 (44-3-0283), the site was assessed of having high research, social and spiritual significance.

It is proposed that these are reburied in proximity to their original locations (outside of the construction impact) in consultation with Aboriginal stakeholders and protected for the duration of works associated with the construction and operation of the Project.

Traffic and Access

The Traffic Impact Assessment (SLR Consulting, 2024) (TIA) (located at **Appendix I**) prepared for the Project included automated tube count (ATC) surveys completed between Monday 10 October 2022 and Monday 17 October 2022, with one tube installed approximately 80m west of the existing site access to ascertain the existing traffic demands of the road network surrounding the broader Project site. The following peak hours were identified as follows from the ATC data:

- Weekday AM peak: 7:00am – 8:00am;
- Weekday PM peak: 3:00pm – 4:00pm; and
- Weekend peak: 11:00am – 12:00pm.

Traffic generated during the construction of the Project is associated with the transportation of the workforce and materials/equipment. SIDRA modelling concluded that the Project would generate approximately 7,489 return trips during the construction period over 360 business days (14 months). The daily traffic generation will be in order of 21 return trips a day trips a day (20 light vehicle return trips and slightly less than one heavy vehicle return trip). Sight distances for the access crossover to the site along Mid Western Highway are acceptable under *Austroads Guidelines*, and the TIA recommends that the access location should be designed with a Basic Left Turn (BAL) treatment as per Austroads Guidelines. No upgrades are considered necessary for the right-turn movement due to the temporary nature of the works (less than two years).

The heavy vehicle route directing heavy vehicles along Evans Plans Road is consistent with Austroads Guidelines and assessment confirms that the construction traffic volume modelled for the Project would be sufficiently low (21 return trips a day) that there will be no capacity constraints at the access crossover.

The operation and decommissioning processes will have substantially less traffic generation than the construction period, and accordingly will also be satisfactory noting that sufficient infrastructure will be constructed during the construction phase.

Recommendations have been made in relation to the heavy vehicle route access, which would form part of the Construction Traffic Management Plan (CTMP). The construction workforce will be briefed on the recommended route with a Driver's Code of Conduct as part of the CTMP prior to the commencement of works and throughout the construction phase.

Visual Amenity

The Landscape and Visual Impact Assessment (SLR Consulting, 2024) (LVIA) prepared for the Project identified that the Project site is located within low rolling hills on the western side of an elevated ridge line adjacent to Robin Hill, with numerous undulations and small creek

valleys on either side, located between two (2) distinct larger hills with a westerly aspect that reduce visibility to the northeast.

Five (5) public vantage points (VP) and 12 private receptor locations were identified to be assessed based on visibility results, site observations of clear views, and relevance to State and local planning principles.

The LVIA concluded that following the implementation of prescribed mitigation measures the development would blend into its surrounds the magnitude of change rating would reduce to Negligible or Very Low magnitude; this is described as 'no memorable or rarely perceptible change to landscape character or key views'.

Private receptors effect significance returned post mitigation of negligible/very low due to the proposed mitigation, established vegetation reducing visibility, the location of the receptor in relation to adjacent topography, and the orientation of the private receptor in relation to the Project site.

A Visual Management Plan (VMP) is recommended to form part of the future Construction Environmental Management Plan (CEMP).

Water Quality

The Surface and Groundwater Assessment (SLR Consulting, 2024) (SGWA) (located at **Appendix K**) prepared for the Project identifies the broader Project site is located within the catchment of the Evans Plains Creek. Elevation across the broader Project site ranges between approximately 680 to 780 metres above Australian Height Datum (mAHD), generally sloping east to west with a westerly aspect. The BESS facility is proposed to be constructed on a slope generally greater than 10%, less than 100 m southwest of the existing Transgrid substation on Lot 521 DP 603541. Soil landscape mapping indicates that the Project lies entirely within the 'Bathurst' soil landscape. The site corresponds directly with the elevation and slope characteristics identified within this soil landscape typology. Soil salinity mapping suggests that salinity does not pose development implications for the Project, and there are no areas of Acid Sulphate Soils (ASS) mapped within the broader Project site.

Groundwater dependent ecosystems (GDE) mapping was reviewed using the SEED Database, with no known aquatic or terrestrial GDEs mapped within the broader Project boundary. The Project is not envisaged to impact baseflow contributions to Evans Plains Creek and therefore does not threaten potential GDEs associated with the creek.

Ground disturbance due to site earthworks represents the greatest risk to surface water quality during construction, increasing erosion and mobilising sediments into receiving watercourses, which has the potential to increase turbidity and nutrient loads in downstream watercourses. The implementation of standard erosion and sediment control measures will result in the potential environmental impact being considered very low and manageable.

At the conclusion of the useful life of the Project, infrastructure will be removed, and the site will be graded as close to pre-Project landform as possible, with some revegetation anticipated to be required during this phase. During this phase it is likely there may be disturbance of site soils, and the risk of soil erosion until an effective vegetative cover is established. Potential impacts of erosion are similar to the construction phase and include the potential loss of future land productivity if topsoil is eroded.

A site wide Erosion and Sediment Control Plan (ESCP) will be prepared as part of the CEMP for the Project. The ESCP will be prepared in accordance with *Managing Urban Stormwater: Soils and Construction* (Landcom, 2004), known as 'the Blue Book', and *Volume 2A Installation of Services* (DECC 2008a). Mitigation measures and site management practices will be included within the CEMP and Operational Environmental Management Plan (OEMP).

Land Quality

The Soils and Agricultural Land Resource Assessment (SLR Consulting, 2024) (SALRA) (**Appendix L**) prepared for the Project concluded that the broader Project site is identifiable as Land and Soil Capability (LSC) Class 4 (moderate capability land) and LSC Class 8 (extremely low capability land). No soils within the broader Project site are classified as Biophysical Strategic Agricultural Land (BSAL), and the broader Project site is not considered highly productive agricultural land as defined in LSC Scheme (Office of Environment and Heritage (OEH) 2012). The Eutrophic Brown Dermosol is classed non-dispersive to slightly dispersive and poses a minimal risk for erosion during construction, operation, and decommissioning.

The existing broader Project site has the potential to generate $824 per annum from cattle grazing improved pastures, representing 0.002% of the Bathurst Local Government Area (LGA) agricultural production. These factors indicate the change in land use to be suitable and present a low impact to its alternative use as agricultural production.

Land Use Conflict

The Land Use Conflict Risk Assessment (SLR Consulting, 2024) (LUCRA) prepared for the Project assessed potential land use conflicts using the *Land Use Conflict Risk Assessment Guide* (DPI, 2011) to estimate risk, probability, and consequence for each identified Project activity and potential conflict associated with the Project.

The assessment identified assessed initial risk rankings of identified potential land use conflicts as seven (7) low risk, three (3) moderate risk, and three (3) high use conflicts. Initial high risk land use conflict relates to the potential for noise and traffic impacts associated with the construction phase as well as the potential safety implications, however following implementation of the mitigation measures proposed for the Project, all identified conflicts returned a low-risk rating.

Air Quality

A desktop air quality assessment prepared in response to the SEARs. The closest Bureau of Meteorology (BOM) climate station to the Site that provides current mean monthly climate and rainfall data is the Bathurst Agricultural Station Site (site number 063005), located approximately 3.5 km from the Project site, with recording of climate data commencing in 1908.

During construction of the Project, it is expected that dust generation would result from bulk earthwork activities such as cutting, filling, and trenching. Additionally, fuel emissions are likely to result from light and heavy vehicles travelling to and from the Project site. The impacts on local and regional air quality due to dust through the operational phase of the Project is expected to be negligible given the limited requirement for vehicles to attend site for maintenance and daily operation.

The desktop air quality assessment prepared for the Project concluded that the air quality impacts during the construction, operational, and decommissioning phases are considered to be negligible with the implementation of the proposed mitigation measures.

Social

The Social Impact Assessment (SLR Consulting, 2024) (SIA) and Community and Stakeholder Engagement Plan (SLR Consulting, 2024) (CSEP) prepared for the Project identified that the key communities likely to experience social impacts and/or benefits of the Project include the following:

- Neighbouring residents;
- Neighbouring businesses and services;
- Local area workers;
- Visitors to the locality;
- Visitors from the broader region;
- Indigenous people; and
- Temporary construction workers in the area.

The assessment identified key social factors relevant to the assessment of social impacts of the Project including way of life, community, accessibility, culture, health and wellbeing, surroundings, and livelihoods.

The SIA assessed that the level of social impacts resulting from the Project ranged from low to high, with no major significant negative impacts identified that cannot be effectively mitigated.

The most significant social benefits of the Project relate to the provision of new renewable energy infrastructure, support for the continued and targeted growth of the national renewable energy generation capacity. In addition, the positive impacts include to livelihoods associated with increased employment opportunities with the Project expected to generate approximately 20 full time equivalent (FTE) construction jobs and one (1) FTE operational job. The overall long-term benefits of the Project are considered to be positive, and potential negative impacts can be mitigated through implementation of various technical reports prepared for the EIS. Overall, the Project is consistent with the strategic growth-focused aims and objectives and will support the development of the project and creation of employment generating land uses.

Mitigation measures to be implemented include the preparation of a Community Consultation Strategy prior to construction commencing and a Construction Environmental Management Plan (CEMP) to manage potential adverse temporary impacts to the surroundings, health and wellbeing associated traffic impacts, dust, noise and/or vibration.

Economic

The Economic Impact Assessment (Gillespie Economics, 2024) (EIA) (located in **Appendix O**) prepared for the Project noted that the Project will provide economic activity to the regional and NSW economy during both the construction and operational phases, with a nominal reduction in agricultural productive land use and a corresponding increase in economic activity generated through the operation of the BESS. This level of impact to agricultural production is considered negligible and increased economic activity will take the form of increased expenditure in the region on non-labour inputs (purchases), direct employment of local labour or migration of labour, and expenditure of wages in the local economy.

The total average annual impacts of the construction and operational phases of the Project to the regional and state economy are summarised below in **Tables ES-3** and **ES-4** respectively.

Table ES-3: Average Annual Economic Impacts of the Project Construction

Economic Factor	Regional Economic Value	NSW Economic Value
Annual direct and indirect output	$18M	$30M
Annual direct and indirect value-added	$7M	$13M
Annual direct and indirect household income	$4M	$8M
Direct and Indirect jobs	51	93

Table ES-4: Average Annual Economic Impacts of the Project Operation

Economic Factor	Regional Economic Value	NSW Economic Value
Annual direct and indirect output	$2.7M	$3.7M
Annual direct and indirect value-added	$1.1M	$1.6M
Annual direct and indirect household income	$0.3M	$0.7M
Direct and Indirect jobs	4	7

Waste Management

A desktop waste management assessment prepared in response to the SEARs. The primary waste facilities licensed to accept general solid waste (putrescible and non-putrescible) for the Project site include Bathurst Waste Management Centre and Bathurst Recycling. A review of the waste facilities in the nearby region, including waste streams accepted, shows that there is sufficient capacity to accept and process most waste streams from this Project. Arrangements for collection contractors and selection of waste facilities would be specified in the later stages of the project and details included in the Project Construction Environmental Management Plan (CEMP).

The Project is anticipated to produce minor quantities of waste during the site preparation, construction, operation, and decommissioning phases including the following broad waste streams are expected:

- Excavation waste;
- Vegetation from site preparation;
- Construction waste;
- Plant maintenance waste;
- Packaging waste;
- Work compound (on-site employees) waste; and
- Wastewater (from plant maintenance and construction activities).

During the operational phase of the Project, operational waste streams are expected to be generated by site workers, as well as materials generated during maintenance of the site, including the following waste streams:

- Spent Lithium Iron Phosphate (LFP) batteries;
- General waste (e.g., mixed food scraps, soiled paper and cardboard, non-reusable timber/wood pallets, non-recyclable plastics etc);
- Co-mingled recyclable waste (e.g., aluminium and steel cans, recyclable plastics, glass bottles, scrap metals etc);

- Source-separated organic waste (mainly food waste);
- Source separated paper and cardboard;
- Waste oils and grease (generated from maintenance activities);
- Chemical waste (minor quantities of residual chemicals used in site maintenance activities including paints etc); and
- Sewage/wastewater generated during site operations.

Waste types and quantities generated during the decommissioning phase of the Project would be managed similarly to construction phase, and in accordance with the waste hierarchy to avoid, reduce, re-use, recycle, and recover materials where possible, through effective design and planning.

Waste generated during all phases of the Project would be appropriately managed in accordance with relevant NSW waste management guidelines and regulations.

Hazard and Risk

The Hazard and Risk Assessment (SLR Consulting, 2024) (HRA) (located in **Appendix O**) prepared for the Project identified that the hazardous events, causes, consequences, and controls investigated include the following:

- Bushfire;
- BESS unit explosion and/or thermal runaway reaction;
- Fire starting onsite;
- Exposure of equipment to high voltage;
- Vehicle collision onsite;
- Transformer oil leakage;
- Security breach;
- Damage due to lightning strike;
- Flooding; and
- Exposure to electromagnetic fields (EMF).

The potential hazards that could not be eliminated through first review as resulting in a risk level of high and required further examination consisted of:

- Hazards associated with lithium ion batteries in the BESS, specifically overheating and fire;
- Hazards associated with exposure to electromagnetic fields (EMF); and
- Hazards associated with bushfire.

The residual risks associated with all identified hazards as part of the PHA being bushfire, BESS fire, and EMF have been assessed to be low, and hence adequately mitigated with the implementation of recommended management measures.

Historic Heritage

A desktop historic (European) heritage assessment prepared in response to the SEARs. The Project is not located in proximity to any local heritage item, with the nearest identified local heritage items being Item I131 ‘Glenroy (former convent)’ and Item C2 ‘Evans Plains Conservation Area’ identified in the *Bathurst Regional Local Environmental Plan 2014* (LEP),

which are located approximately 70 metres to the west of the broader lot and approximately 120 m to the west of proposed works associated with the formalisation of the existing access road on Lot 2 DP 864272. As a result of the distance, small scale of works and with the implementation of appropriate mitigation measures, no impacts are anticipated to this local heritage item.

No State listed heritage items or places are located in the vicinity of the Project site.

Therefore, the historic heritage impacts during the construction, operational, and decommissioning phases are considered to be negligible with the implementation of the proposed mitigation measures.

Justification and Conclusion

Through the implementation of best practice management, the potential environmental impacts associated with the Project can be appropriately managed, which will also address the community concerns and associated social impacts identified during the stakeholder engagement process. Given the net benefit and commitment from the Proponent to appropriately manage the potential environmental impacts associated with the Project, it is considered the Project would result in a net benefit to the region and broader NSW community.

The Project is located within a predominantly rural setting, with surrounding land parcels to the West and South. The current land use cattle grazing improved grass pasture composed of exotic species that is adjacent to the existing TransGrid 132 kV Substation in the North-Eastern portion of the site and is separated from sensitive receivers such as residential areas and schools. The site would provide for an advantageous and economically beneficial use of land in a landscape that has a history of transmission alongside various rural land uses.

The Project contributes to 'The Electricity Infrastructure Roadmap' which is enabled by the *Electricity Infrastructure Investment Act 2020*. The Project would provide both short-term and long-term benefits including supporting a sustainable, green electricity future for NSW, and reducing the price of electricity in NSW, providing major investment in NSW.

Most importantly, the Project will significantly reduce greenhouse gas emissions while providing baseload power, adding to local employment and would contribute directly to the goals of the Central-West Orana Renewable Energy Zone (REZ) through the investment in renewable energy storage and the growth of new low carbon industries across the region.

The Project is consistent with the objects and matters as per the EP&A Act and principles of Ecologically Sustainable Development.

The assessments presented in this EIS indicate that the proposed Panorama BESS is considered to be in the public interest and should be approved on the basis that it provides a range of benefits to the local region and the State by directly contributing to meeting renewable energy targets.

The specialist studies supporting this EIS confirm that the Project would not lead to any significant environmental, social, or economic impacts and that residual impacts are manageable through the implementation of standard measures.

Table of Contents

Tables in Text

Figures in Text

Photos in Text

Appendices

Acronyms and Abbreviations

Acronym	Meaning
ABS	Australian Bureau of Statistics
ACHAR	Aboriginal Cultural Heritage Assessment Report
AFGM	Aboriginal Focus Group Meeting
AHIMS	Aboriginal Heritage Information Management System
AIP	Aquifer Interface Policy
AIS	Agricultural Impact Statement
ALRA	*Aboriginal Land Rights Act 1983*
ANZEC	Australian and New Zealand Environment Council
AQIA	Air Quality Impact Assessment
AS	Australian Standard
AWS	Automatic Weather Station
BC Act	*Biodiversity Conservation Act 2016*
BDAR	Biodiversity Development Assessment Report
bgl	Below Ground Level
BoM	Bureau of Meteorology
BOS	NSW Biodiversity Offsetting Scheme
CEMP	Construction Environmental Management Plan
CLM Act	*Crown Lands Management Act 2016*
CSES	Community and Stakeholder Engagement Strategy
DPE	Department Planning and Environment (now DPHI)
DPHI	Department of Planning, Housing and Infrastructure
EDC	Estimated Development Cost
EIA	Economic Impact Assessment
EIS	Environmental Impact Statement
EP&A Act	*Environmental Planning and Assessment Act 1979*
EP&A Regulation	Environmental Planning and Assessment Regulation 2021
EPA	Environmental Protection Authority
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
EPL	Environmental Protection Licence
ESCP	Erosion and Sediment Control Plan
GDE	Groundwater Dependent Ecosystem
GWIA	Groundwater Impact Assessment
ha	Hectares
ICNG	Interim Construction Noise Guideline
IPCC	Intergovernmental Panel on Climate Change
kg	Kilogram
km	Kilometre
LALC	Local Aboriginal Land Council

Acronym	Meaning
LEP	Local Environment Plan
LLS	Local Land Services
LSC	Land and Soil Classification
LSCA	Land and Soil Capability Assessment
LSPS	Local Strategic Planning Statement
m AHD	Metres Australian Height Datum
mg/L	Milligrams per litre
mm	Millimetre
MNES	Matters of National Environmental Significance
mth	Month
Mt	Million tonnes
NGER Act	*National Greenhouse and Energy Reporting Act 2007*
NGER Regulations	*National Greenhouse and Energy Reporting Regulations 2008*
NMLs	Noise Management Levels
NNTT	National Native Title Tribunal
NPV	Net Present Value
NPWS	National Parks and Wildlife Service
NVIA	Noise and Vibration Impact Assessment
OEH	Office of Environment and Heritage
OEMP	Operational Environmental Management Plan
PCTs	Plant Community Types
PHA	Preliminary Hazard Analysis
$PM_{2.5}$	Particulate Matter $_{2.5}$
PM_{10}	Particulate Matter $_{10}$
POEO Act	*Protection of Environment Operations Act 1997*
PANL	Project Amenity Noise Levels
PINL	Project Intrusive Noise Levels
RAP	Registered Aboriginal Party
RBL	Rating Background Level
RNP	Road Noise Policy
SEARs	Secretary Environmental Assessment Requirements
SIA	Social Impact Assessment
SSD	State Significant Development
SWIA	Surface Water Impact Assessment
t	Tonnes
TEC	Threatened Ecological Community
TfNSW	Transport for New South Wales
TIA	Traffic Impact Assessment
tpa	Tonnes per Annum

Acronym	Meaning
TSP	Total Suspended Particulates
VID	Viewpoint Identification Number
VPA	Voluntary Planning Agreement
WAL	Water Access Licence
WARR Act	*Waste Avoidance Resource Recovery Act 2001*
µg/m^3	Microgram per cubic meter

1.0 Introduction

This chapter provides an overview of the proposal, including an introduction to the project location, scope of works and planning approval process. It outlines the Secretary's Environmental Assessment Requirements (SEARs) and indicates where they have been addressed in this Environment Impact Statement (EIS).

1.1 Overview

Panorama BESS SubCo Pty Ltd (Panorama BESS SubCo) proposes to construct, operate, and decommission a Battery Energy Storage System (BESS) with a capacity of 100 Megawatts (MW) 200 Megawatt Hours (MWh) and associated ancillary infrastructure adjacent to an existing 132 Kilovolt (kV) substation operated by TransGrid in Evans Plains, NSW (henceforth referred to as 'the Project').

The BESS will consist of SolBank BESS containers (or enclosures) in 'back-to-back' formation in two north-south aligned rows. The SolBank is a lithium iron phosphate (LiFePO4) chemistry-based battery enclosure with up to 2,800 kWh of usable energy capacity, specifically engineered to be one of the safest and most reliable systems for utility-scale applications. Each SolBank container has dimensions of 6058 millimetres (mm) by 2438mm by 2896mm with an approximate weight of 30,000 kilograms (kg). The BESS will be supported by inverters which will convert the electricity from the BESS and connect to the existing TransGrid substation via approximately 100 metres (m) of 132 kV underground cable.

The Project is deemed to be State Significant Development (SSD) being an electricity generating works development with a capital investment value (CIV) higher than $30 million. The project therefore requires assessment and approval in accordance with Part 4, Division 4.7 of the Environmental Planning and Assessment Act 1979 (NSW) (EP&A Act).

Panorama BESS SubCo have engaged SLR Consulting Australia Pty Ltd (SLR) to prepare this EIS to address the requirements of the Secretary of the NSW Department of Planning, Housing and Infrastructure (DPHI), known as the SEARs for the project, SSD-50587460 dated 9 December 2022 (**Appendix A**). The EIS has also been prepared in accordance with the *NSW Environmental Planning and Assessment Regulation 2000* and under the guidance of the *state significant development guidelines - preparing an environmental impact statement* (DPE 2021).

1.2 The Project

1.2.1 Project Objectives

The Project aims to have the following benefits for the region:

- Increase local employment and investment opportunities during construction;
- Add significant benefits to the NSW electricity grid because it allows for the dispatch of energy in accordance with market demand to assist in load leveling and grid support to balance the natural fluctuations in electricity demand throughout the day and reduce congestion on the local grid;
- Play an important role in providing stability to the NSW energy network by charging up during the day when renewable energy generation is high and then providing that power back to the grid at night to support high demand; and
- The BESS is located along a major transmission route which is in line with the Federal Government's direction to improve the affordability and security of the national energy market while also delivering on international climate commitments.

1.2.2 Project Background

A number of sites were considered during the site selection process for the Project, with regard made to the following:

- Appropriate zoning of land to facilitate development consent for a BESS;
- Availability of existing access to the site via an establish road network;
- Proximity to the existing TransGrid substation, to minimise impacts of easements;
- Selection of a construction location that would avoid and/or minimise impacts to high quality native vegetation and protected fauna;
- An area that would not result in, or be subject to, potential flood impacts; and
- Minimising impacts to surrounding privately or publicly owned land and residential dwellings due to noise and visual amenity concerns.

1.2.3 Project Description

- Installation and operation of a SolBank BESS including battery enclosures, inverters, and transformers;
- Associated ancillary infrastructure including:
  - A 132kV underground cable connecting a 33/132kV switch building to the existing substation;
  - Formalisation of existing access from Mid Western Highway and existing access road within Lot 2 DP 864272 to accommodate heavy vehicles;
  - Proposed access road from the BESS to connect to the existing access road within Lot 2 DP 864272;
  - Operations and maintenance (O&M) building;
  - Stormwater management infrastructure, lighting, and security fencing; and
  - Construction laydown areas.
- Decommissioning of the SolBank BESS at the end of life (EOL) include disassembly and removal of associated infrastructure from the site, to be returned as close as possible to its existing condition.

Further details on each component of the Project are provided in **Chapter 3.0**.

1.2.4 Project Location

The site of the proposed BESS (hereafter referred to as the Site) is located on Lot 2 DP 864272 at 800 Mid Western Highway and Lot 521 DP 603541 at 749 Mid Western Highway, Evans Plains, NSW, 2795. The development site is located approximately 2.5 kilometres (km) to the west of the suburb of Robin Hill and approximately 5.8km south-west of the City of Bathurst. The overall site has an area of approximately 113.2 hectare, and the development footprint has an area of 3.47 hectares.

The larger lot (Lot 2 DP 864272) is irregular in shape and currently zoned RU1 – Primary Production under *the Bathurst Regional Local Environmental Plan 2014* (LEP). The lot currently contains a small collection of sheds within the central western portion of the lot, and a residential dwelling (identified as 'Existing Sheds and Dwelling' on **Figure 2**). The Project development site is located within the eastern extent of Lot 2 DP 864272 and to the immediate south-west of the established TransGrid substation located on adjacent Lot 521 DP 603541 at 749 Mid Western Highway, within which connection works are also proposed.

The Project development site has generally low grades, will not encroach into the existing easement containing 132 kiloVolt (kV) overhead lines, and is largely cleared of vegetation making it ideal for the proposed use.

Potential sensitive receivers are located in the nearby suburb of Robin Hill approximately 1km to the east and 1.4km to the north to the nearest residential dwellings; and the suburb of Evans Plains approximately 800 m to the west. The 'Existing Sheds and Dwelling' on the lot is also classified as a sensitive receiver for the purposes of assessing the impacts of the Project within the EIS at the recently constructed dwelling.

Figure 1 shows the location and regional context of the Project, and the development footprint is indicated in **Figure 2**. **Figure 3** shows a site plan detailing the Project and its associated infrastructure.

1.3 The Proponent

The proponent for the Project is Panorama BESS SubCo, a privately owned Australian company.

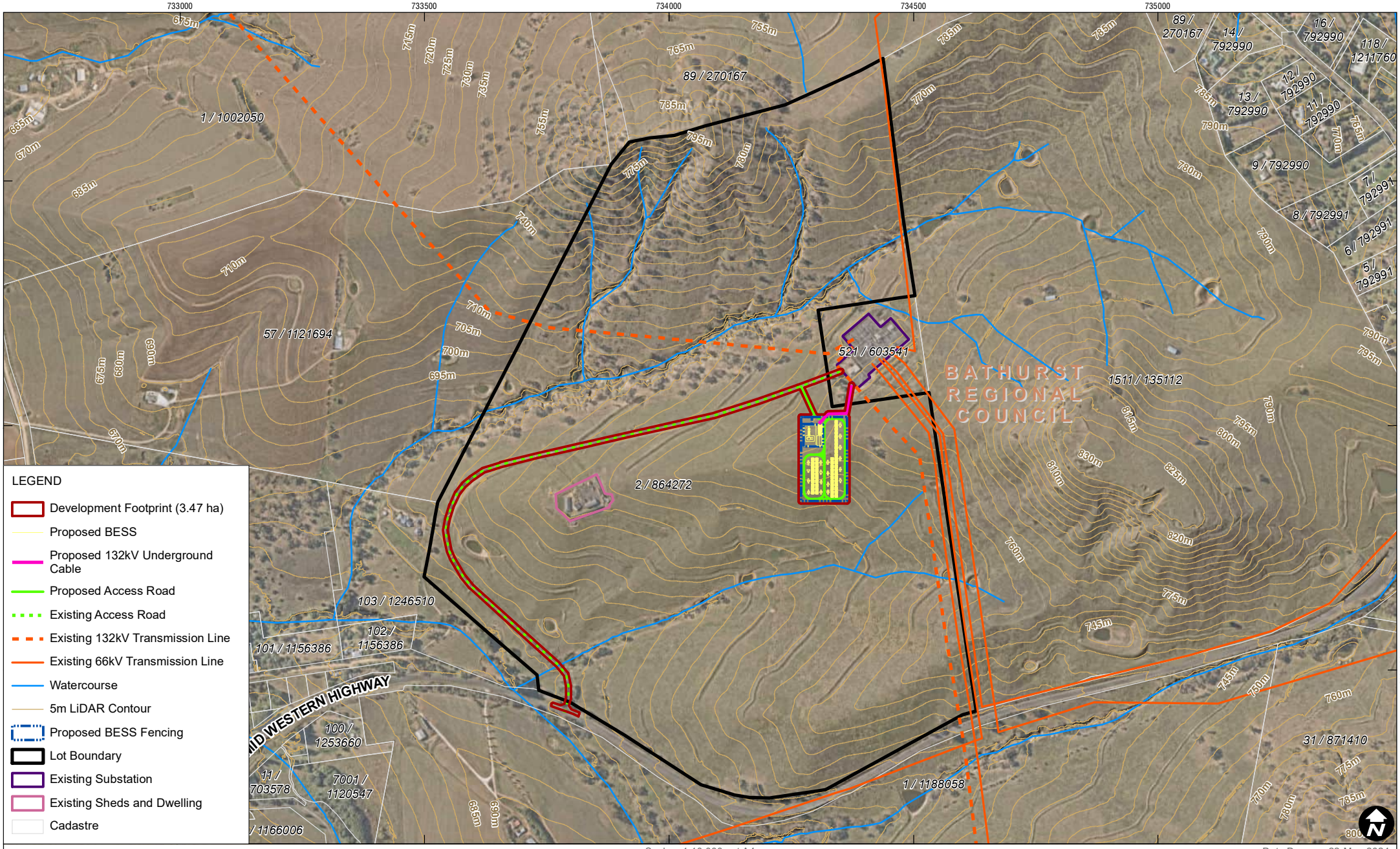
Founded in 2001 in Canada, Canadian Solar (Australia) Pty Ltd (Canadian Solar), owner of Panorama BESS SubCo is one of the world's largest and foremost solar power companies and has been publicly listed on National Association of Securities Dealers Automated Quotations (NASDAQ) since 2006. Canadian Solar was incorporated in 2011 in Sydney as part of the global footprint of Canadian Solar.

The local team has an excellent understanding of the requirements and challenges of successful deployment and has a proven track record delivering large commercial solar installations in Australia and globally.

Table 1: Proponent Details

Requirement	Detail
Proponent	Panorama BESS SubCo Pty Ltd as trustee for the Panorama BESS Unit Trust
Postal Address	Citic House, Level 4, Suite 4.02, 99 King Street, Melbourne, Victoria, 3000
Contact	Chelsea Milles
Contact Details	chelsea.milles@recurrentenergy.com
ABN	38 905 415 690


LEGEND
Lot Boundary
State Border
Wellington
Cudgegong River
Kandos
A32
B55
1088 m
Molong
Castlereagh Hwy
Gardens of Stone National Park
The Escort Way
Orange
Sunny Corner State Forest
1392 m
Macquarie River
Portland
Newnes State Forest
Canobolas State Forest
Mitchell Hwy
Bathurst
Lithgow
Location of Proposed BESS
Blayney
Coxs River
A41
1372 m
Oberon
Jenolan State Forest
1381 m
Vulcan State Forest
Kanangra-Boyd
Wyangala Reservoir
Abercrombie River
Crookwell River
Boorowa
Crookwell
Queensland
South Australia
New South Wales
BATHURST
SYDNEY
Victoria
Scale: 1:28,000,000
0
25
50
km
Scale: 1:900,000 at A4
Coordinate System: GCS GDA 1994
Date Drawn: 10-Jul-2023
Project Number: 660.30234
Data Source: Basedata, NSW SS, 2022, Geoscience Australia
Basemap supplied by ESRI and other sources
SLR
REGIONAL CONTEXT OF THE SITE
FIGURE 1
H:\Projects-SLR\660-SrvWOL\660.30234.00000 Bathurst BESS SSD Approvals\06 SLR Data\01 CADGIS\GIS\SLR660302234_EIS_G1_RegionalContext_001.mxd



Scale: 1:10,000 at A4
Coordinate System: GDA 1994 MGA Zone 55

Date Drawn: 22-May-2024
Project Number: 660.30234.00000

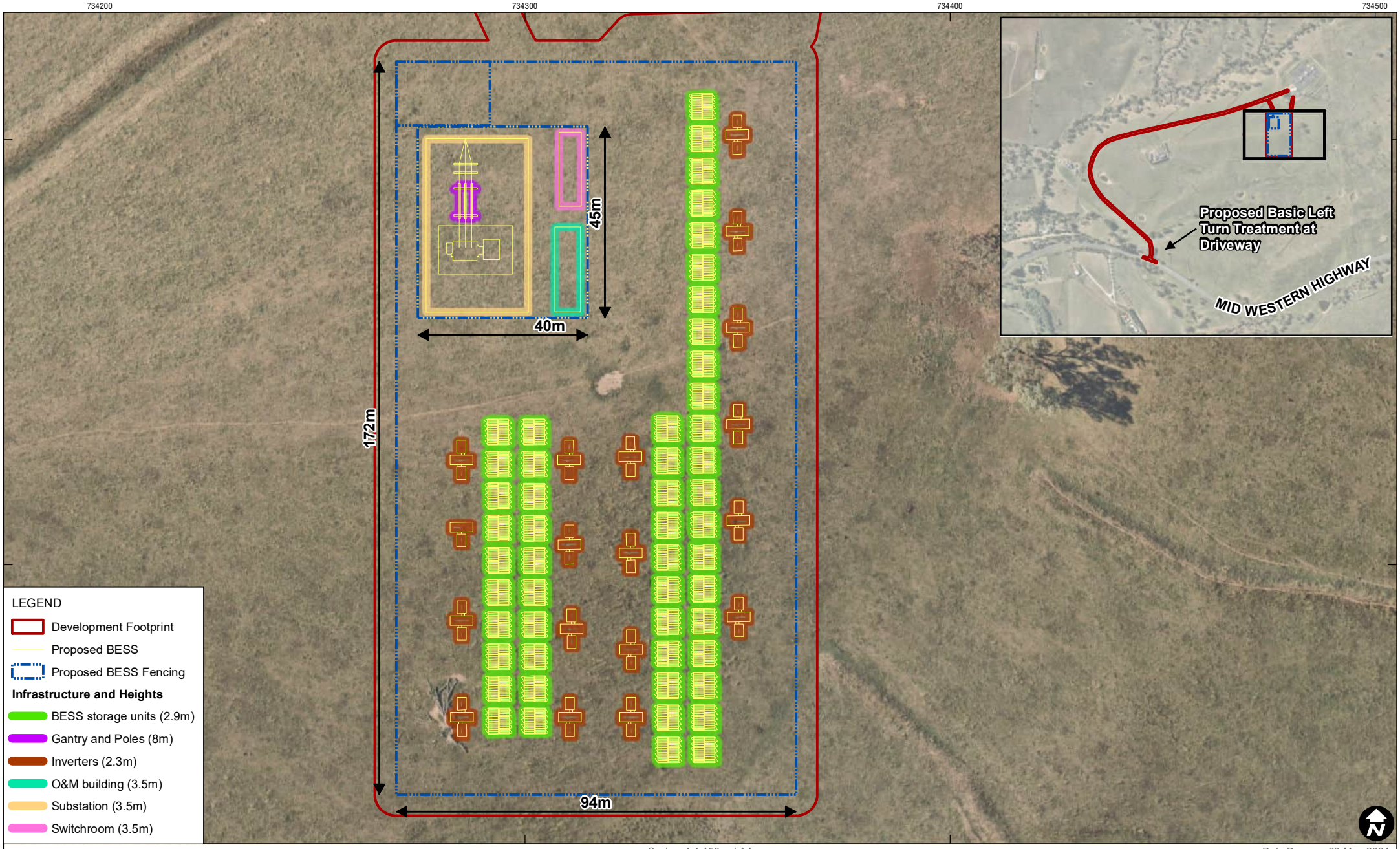
Data Source: Basedata NSW SS, December 2021
Aerial imagery supplied by Nearmap (March, 2024)
Elevation data supplied by DCS Spatial Services (July, 2019)

SLR

PROJECT SITE PLAN

FIGURE 2

H:\Projects-SLR\660-SrvWOL\660-WOL\660.30234.00000 Bathurst BESS SSD Approvals\06 SLR Data\01 CADGIS\GIS\SLR66030234_EIS_G2_SitePlan_002.mxd



Scale: 1:1,150 at A4
Coordinate System: GDA 1994 MGA Zone 55

Date Drawn: 23-May-2024
Project Number: 660.30234.00000

Data Source: Basedata NSW SS, December 2021
Aerial imagery supplied by Nearmap (March, 2024)
Elevation data supplied by DCS Spatial Services (July, 2019)

SLR

BESS SITE PLAN

FIGURE 3

H:\Projects-SLR\660-SrvWOL\660-WOL\660.30234.00000 Bathurst BESS SSD Approvals\06 SLR Data\01 CADGIS\GIS\SLR66030234_EIS_G16_BESSSitePlan_002.mxd

1.4 EIS Purpose and Structure

SSD to which Division 4.7 of the EP&A Act applies is identified in the State Environmental Planning Policy (Planning Systems) 2021 (Planning Systems SEPP) and in declarations made by the Minister for Planning. The Project is considered to be SSD as it is of a type listed in Schedule 1 of the Planning Systems SEPP.

The NSW Minister for Planning and Public Spaces is therefore the consent authority for the Project and a development application is required to be lodged with the DPHI, accompanied by an EIS. The EIS will be placed on public exhibition for a period of at least 28 days to allow public and agency submissions to be lodged, after which the proponent may be requested to respond to issues raised in the submissions.

This EIS has been undertaken to assess the significance of the potential environmental impacts associated with the construction and operation of the Project. The EIS has been undertaken in accordance with the EP&A Act and the Environmental Planning and Assessment Regulation 2021 (EP&A Regulation).

The EIS has been based on the SEARs developed by the DPHI in conjunction with a range of other government agencies. The SEARS were issued by DPHI on 9 December 2022. The SEARs and additional agency requirements are provided **in Appendix A**, with cross references to where each requirement is addressed within this EIS.

The structure and content of this EIS has been designed with consideration of the recommendations of Appendix B to the *State Significant Infrastructure Guidelines – Preparing Environmental Impact Statement*. The EIS contains two volumes incorporating the main body within Volume 1 and appendices and specialist technical studies in Volume 2. **Table 2** below outlines the chapters, appendices and inclusions of Volumes 1 and 2.

Table 2: EIS Structure and Inclusions

Chapter or Appendix	Inclusion
Volume 1	
Chapter 1 Introduction	This section provides the context for the detailed assessment of the project
Chapter 2 Strategic Context	This section provides the key strategic context issues that are relevant to the assessment of the project
Chapter 3 Project Description	This section provides a consolidated description of the project that the proponent is seeking approval for.
Chapter 4 Statutory Context	This section identifies the relevant statutory requirements for the project
Chapter 5 Community and Stakeholder Engagement	This section summarises the findings of the community engagement that was carried out for the project during the preparation of the EIS and describes what further community engagement will be carried if the project is approved.
Chapter 6 Assessment of Impacts	This section provides a detailed summary of the results of the assessment of the potential impacts of the project.
Chapter 7 Project Justification and Conclusion	This section provides a justification and evaluation of the project as a whole.
Volume 2	
Appendix A	SEARs compliance table
Appendix B	Maps and plans
Appendix C	Statutory compliance table
Appendix D	Community engagement table

Chapter or Appendix	Inclusion
Appendix E	Mitigation measures table
Appendix F	Noise and Vibration Impact Assessment (NVIA) (SLR Consulting, 2024)
Appendix G	Biodiversity Development Assessment Report Waiver (BDAR Report) (SLR Consulting, 2023)
Appendix H	Aboriginal Cultural Heritage Assessment Report (ACHAR) (Austral Archaeology, 2023)
Appendix I	Traffic and Transport Impact Assessment (TIA) (SLR Consulting, 2024)
Appendix J	Landscape Character and Visual Impact Assessment (LCVIA) (SLR Consulting, 2024)
Appendix K	Surface and Groundwater Assessment (SWGA) (SLR Consulting, 2024)
Appendix L	Land and Soil Capability Assessment (LSCA) (SLR Consulting, 2024)
Appendix M	Land Use Conflict Risk Assessment (LUCRA) (SLR Consulting, 2024)
Appendix N	Social Impact Assessment (SIA) (SLR Consulting, 2024)
Appendix O	Economic Impact Assessment (EIA) (Gillespie Economics, 2024)
Appendix P	Hazard and Risk Assessment (HRA) (SLR Consulting, 2024)
Appendix Q	Estimated Development Cost (EDC) Estimate (Hollis Partners, 2024)
Appendix R	Community and Stakeholder Engagement Plan (CSEP) (SLR Consulting, 2024)

2.0 Strategic Context and Objectives

This chapter provides a summary of the strategic context of the proposal on a national, State, and regional context. This chapter also details site and environmental context, and identifies and assesses the cumulative impacts of the proposal.

2.1 National Context

The Paris Agreement is a legally binding international treaty on climate change, adopted by 196 nations at the 2015 United Nations Climate Change Conference (COP 21) 21 in Paris in December 2015 and entered into force in November 2016. The goal of the Paris Agreement is to limit global warming to below 2 degrees Celsius (°C), preferably 1.5 °C when compared to pre-industrial levels.

Under the Paris Agreement, the Australian Government must submit emissions reduction commitments known as Nationally Determined Contributions (NDCs). Australia's first NDC commitment in 2015 was to reduce emissions by 26 to 28% below 2005 levels by 2030., with a 2020 update affirming the 2030 target, outlining Australia's approach to emission reductions, and including new actions and measures since 2015. The 2021 NDC update committed Australia to net zero emissions by 2050, detailed low emissions technology stretch goals, affirmed the 2030 target, and reported 2021 Projections results. The NDC 2022 update had Australia increasing the ambition of the 2030 target by committing to reduce greenhouse gas emissions to 43% below 2005 levels by 2030.

The energy sector is a key part of Australia’s emissions reduction effort as electricity generation is a key contributor to carbon emissions and hence the growth of renewables is crucial in the transition to low emission energy. The Project facilitates the growth of the Australian renewable energy network and will contribute to Australia’s goals as per the latest NDC commitment.

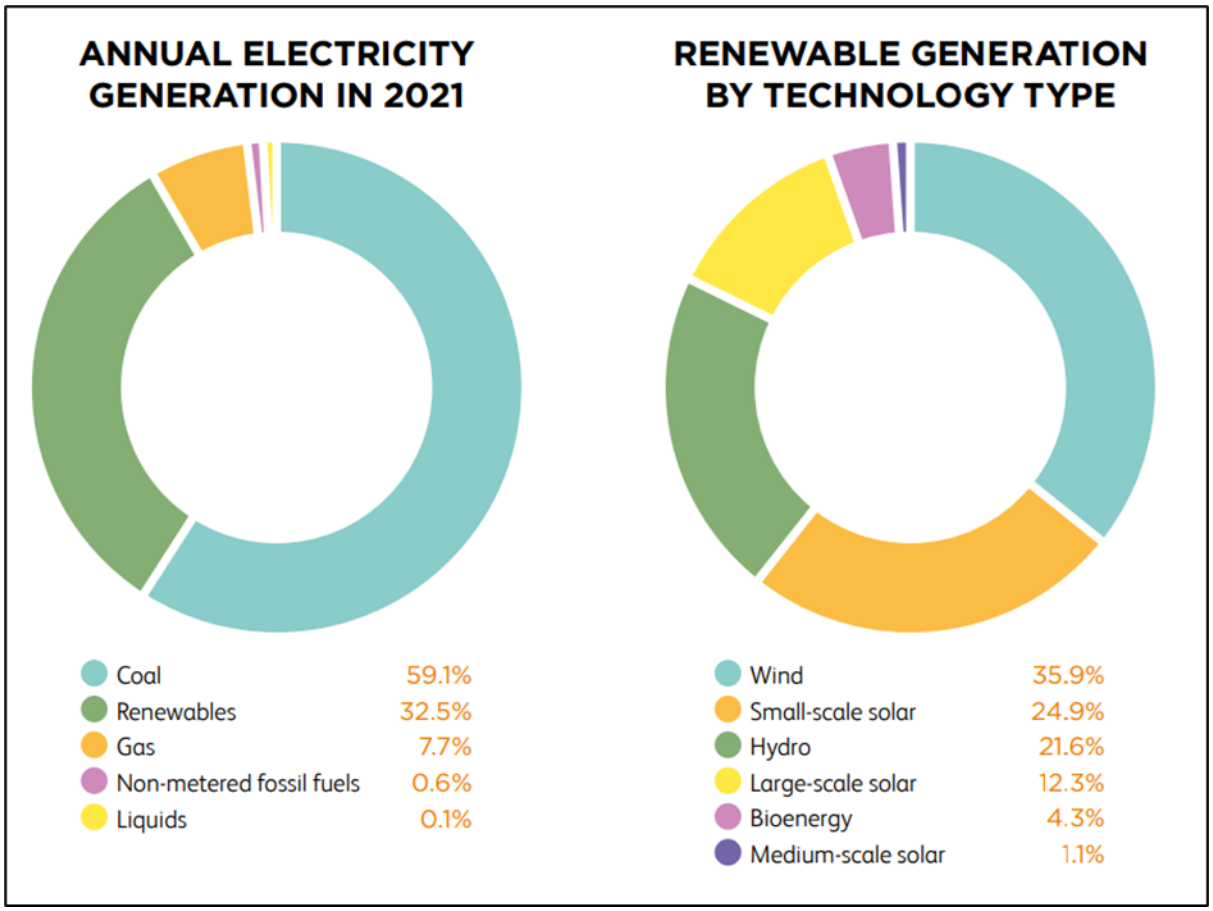
2.1.1 Clean Energy Council

The Clean Energy Council is the leading body for the renewable energy and energy storage industry in Australia. The Clean Energy Australia Report 2022 states that:

- The Australian renewable energy industry accounted for 32.5% of Australia’s total electricity generation in 2021;
- In the past five years, the proportion of Australia’s electricity that comes from renewables has almost doubled, increasing from 16.9% in 2017 to 32.5% in 2021;
- The growth in renewable energy in 2021 was led by small-scale solar, which added 3.3 GW of new capacity and accounted for 24.9% of Australia’s total renewable energy generation that year;
- The large-scale sector also had a significant increase, adding 2955 MW of new capacity across 27 solar and wind farm projects;
- A further 68 large-scale projects were under construction or financially committed at the end of 2021, representing more than 9GW of new capacity. Of these projects, 42 are solar farms, 19 are wind farms, three are bioenergy projects, two are hydropower projects and two are hybrid wind and solar projects.

Figure 4 sourced from the Clean Energy Council (2022) illustrates Australia’s annual electricity generation in 2021 as well as a breakdown of renewable generation by technology type.

Figure 4: Annual Electricity Generated in 2021 and Renewable Generation by Technology Type



2.2 State Context

2.2.1.1 NSW Transmission Infrastructure Strategy

The NSW Transmission Infrastructure Strategy (NSW Government, 2018) aims to increase the State's energy capacity by prioritising priority energy zones and boosting investments in the Central West, South West, and New England regions of NSW to deliver affordable and reliable energy and increase transmission capacity.

As the Project involves the development of a BESS within the Central-West priority energy zone, it is considered to directly contribute to the distribution network proposed within the Transmission Infrastructure Strategy as a key private-sector led investment to improve energy supply in the State.

2.2.1.2 NSW Climate Change Policy Framework

The NSW Climate Change Policy Framework (State of NSW and Office of Environment and Heritage, 2016) aims to maximise the economic, social, and environmental wellbeing of the State in the context of a changing climate and current and emerging international and national policy settings and actions to address climate change.

The long-term objectives of the Climate Change Policy Framework are to achieve net-zero emissions by 2050 and make NSW more resilient to a changing climate.

As the Project would include the construction and operation of a BESS to further develop the renewable energy power supply network of NSW, the Project would directly contribute to

increasing the capacity and resilience of the State and further the State's efforts to reach net-zero emissions by 2050. Additionally, as the Climate Change Policy Framework aims to manage impacts on natural resources, ecosystems, and communities, the site suitability for the Project has been chosen specifically to ensure minimal impacts to biodiversity values and the surrounding community.

2.2.2 NSW Electricity Strategy

The NSW Electricity Strategy is the State's plan for a reliable, affordable, and sustainable electricity future. NSW is currently in a transition to increased renewable electricity generation with the NSW Government committed to ensuring a transition to a reliable, affordable, and modern energy future for NSW households and businesses (Energy NSW, 2021).

It is estimated that that three-quarters of Australia's coal-fired power stations are operating beyond their original design life, with some receiving extensive 'life extension' re-fits to continue operation. In NSW, all five existing coal-fired power stations are scheduled to retire between 2022 and 2043 (AEMO, 2019), beginning with the Liddell Power Station (Hunter Valley) in 2023, increasing the current demand for renewable energy.

The remaining coal-fired generators are set to reach the end of their technical lives and close by 2035.

Over the course of the 2020s, NSW is projected to experience its tightest reserve conditions in 2023-24 after the Liddell power station closed in April 2023. This tight reserve condition is expected to be partially mitigated by projects funded under the Emerging Energy program for new technologies that provide sustainable and on-demand electricity.

The NSW Electricity Infrastructure Roadmap was enabled by the Electricity Infrastructure Investment Act 2020 and builds on the foundations of the Electricity Strategy. The implementation of the Net Zero Plan along with the Electricity Infrastructure Roadmap will result in more than 9000 jobs and up to $37 billion in private investment, with the majority expected to be across regional NSW.

The Electricity Infrastructure Roadmap has identified Renewable Energy Zones (REZs) to group new renewable power generation into locations where it can be efficiently stored and transmitted across NSW. The closest REZ to the Site is the proposed Central-West Orana REZ, was identified due to its strong renewable energy resource potential, proximity to the existing electricity network, and existing land use. The Central-West Orana REZ was formally declared by the Minister for Energy and Environment under section 19(1) of the Electricity Infrastructure Investment Act 2020 gazetted on 5 November 2021.

The Project would contribute directly to the goals of the nearby Central-West Orana REZ through the investment in renewable energy storage and the growth of new low carbon industries across the region.

2.3 Regional Context

The Central West and Orana Regional Plan 2041 ('the Regional Plan') (NSW Department of Planning and Environment, 2022) aims to guide the NSW Government's land use planning priorities and decisions over the next 20 years within the Central West and Orana region, which captures Bathurst, Blayney, Bogan, Cabonne, Coonamble, Cowra, Dubbo, Forbes, Gilgandra, Lachlan, Lithgow, Mid Western, Narromine, Oberon, Orange, Parkes, Warren, Warrumbungle and Weddin Local Government Areas.

Objective 2 of the Regional Plan is to support the transition to net zero by 2050 and deliver the Central–West Orana Renewable Energy Zone, noting that the Central West and Orana region has significant potential for growth and investment in renewable energy industries across wind power generation, large-scale solar energy, and bioenergy generation.

The Project would be directly consistent with Objective 2 of the Regional Plan as it would provide an operational BESS facility to support the increase in renewable energy project development within the region.

2.3.1 Bathurst Regional Local Environment Plan 2014 (LEP)

In accordance with the LEP, the objectives of the RU1 zone are:

- To encourage sustainable primary industry production by maintaining and enhancing the natural resource base
- To encourage diversity in primary industry enterprises and systems appropriate for the area
- To minimise the fragmentation and alienation of resource land
- To minimise conflict between land uses within this zone and land uses within adjoining zones
- To maintain the rural and scenic character of the land
- To provide for a range of compatible land uses that are in keeping with the rural character of the locality, do not unnecessarily convert rural land resources to non-agricultural land uses, minimise impacts on the environmental qualities of the land and avoid land use conflicts.

The Proposal is generally compliant with these objectives as it:

- Can be considered a sustainable primary industry that extracts renewable energy (a natural resource);
- Is complementary to surrounding land uses; and
- Is highly reversible and will not impact the future productivity of the land.
- Electricity generation is not listed among developments which are permitted consent for the RU1 zone however, under Clause 2.36 of the State Environmental Planning Policy (Transport and Infrastructure) 2021 (Transport and Infrastructure SEPP) the Project is permissible with consent.

2.4 Site Context

2.4.1 Site Location and History

The Project is proposed to be constructed and operated on Lot 2 DP 864272 at 800 Mid Western Highway and Lot 521 DP 603541 at 749 Mid Western Highway, Evans Plains NSW, 2795. The development site is located approximately 2.5 kilometres (km) to the west of the suburb of Robin Hill and approximately 5.8km south-west of the City of Bathurst.

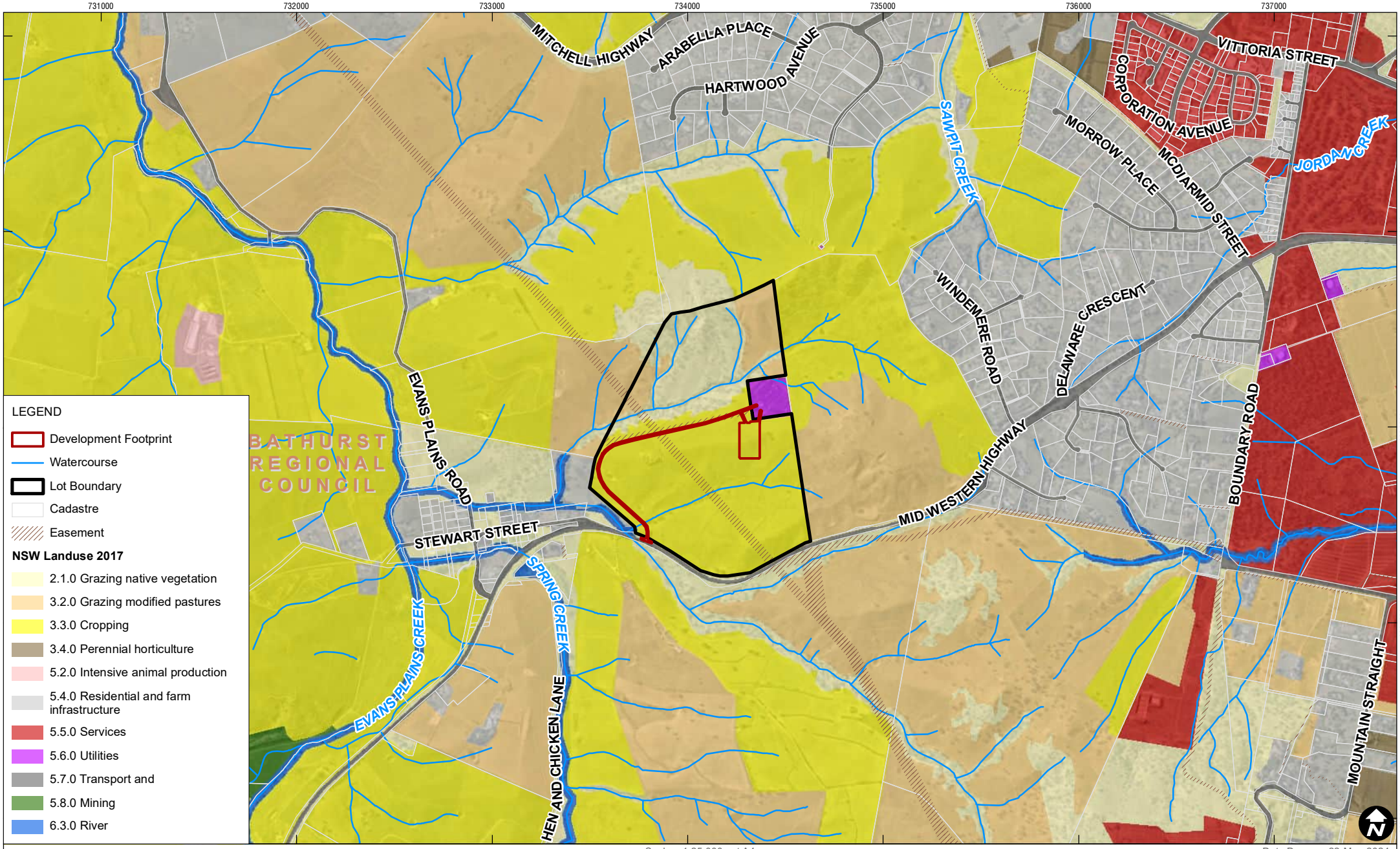
The larger lot (Lot 2 DP 864272) is irregular in shape and currently zoned RU1 – Primary Production under the LEP. The lot currently contains a small collection of sheds within the central western portion of the lot, as well as a residential dwelling (identified as ‘Existing Sheds and Dwelling’ on **Figure 2**). The Project development site is located within the eastern extent of Lot 2 DP 864272 and to the immediate south-west of the established TransGrid substation located on adjacent Lot 521 DP 603541 at 749 Mid Western Highway, within which works are also proposed (as seen in Photo 1 below). The Project development site has generally low grades, will not encroach into the existing easement containing 132 kiloVolt (kV) and 66 kV overhead lines, and is largely cleared of vegetation making it ideal for the proposed use.

Photo 1: Existing Site

2.4.2 Surrounding Land Use

The Project is located within a predominantly rural setting, with surrounding land parcels to the west and south mapped as RU1 – Primary Production and land parcels to the north and east mapped as R5 – Large Lot Residential under the LEP (refer to **Figure 5** below).

Potential sensitive receivers are located in the nearby suburb of Robin Hill approximately 1 km to the east and 1.4 km to the north to the nearest residential dwellings; and the suburb of Evans Plains approximately 800 m to the west. The 'Existing Sheds and Dwelling' on **Figure 6** have been classified as a sensitive receiver for the purposes of assessing the impacts of the Project within the EIS as it contains a recently constructed dwelling.



Scale: 1:25,000 at A4
Coordinate System: GDA 1994 MGA Zone 55

Date Drawn: 22-May-2024
Project Number: 660.30234.00000

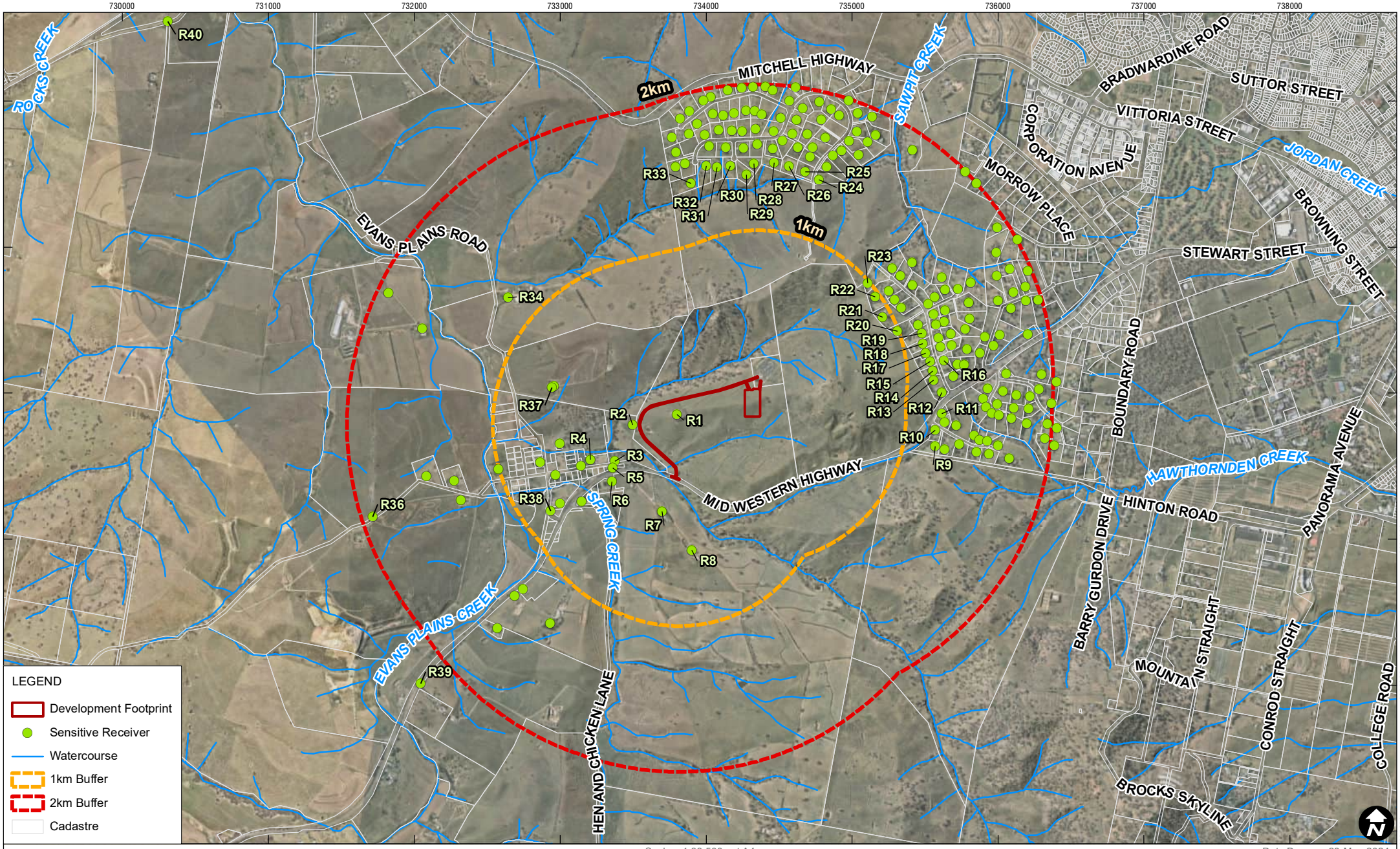
Data Source: Basedata NSW SS, December 2021
Aerial imagery supplied by Nearmap (March, 2024)
Elevation data supplied by DCS Spatial Services (July, 2019)

SLR

SURROUNDING LAND USE

FIGURE 5

H:\Projects-SLR\660-SrvWOL\660-WOL\660.30234.00000 Bathurst BESS SSD Approvals\06 SLR Data\01 CADGIS\GIS\SLR66030234_EIS_G3_LandUse_002.mxd



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Date Drawn: 28-May-2024
Project Number: 660.30234.00000

Data Source: Basedata NSW SS, December 2021
Aerial imagery supplied by Nearmap (March, 2024)
Elevation data supplied by DCS Spatial Services (July, 2019)

SLR

SENSITIVE RECEIVERS

FIGURE 6

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The sensitive receivers referenced in this EIS are particularised in **Table 3.**

Table 3: Sensitive Receivers

Sensitive Receiver No.	Address
R1*	800 Mid Western Highway, Evans Plains
R2	16 Stewart St, Evans Plains
R3	24 Stewart St, Evans Plains
R4	30 Stewart St, Evans Plains
R5	27 Stewart St, Evans Plains
R6	849 Mid Western Highway, Evans Plains
R7	831a Mid Western Highway, Evans Plains
R8	831b Mid Western Highway, Evans Plains
R9	9 McLennan Close, Robin Hill
R10	7 McLennan Close, Robin Hill
R11	6 McLennan Close, Robin Hill
R12	3a Windemere Rd, Robin Hill
R13	3b Windemere Rd, Robin Hill
R14	16 Windemere Rd, Robin Hill
R15	24 Windemere Rd, Robin Hill
R16	34 Windemere Rd, Robin Hill
R17	38 Windemere Rd, Robin Hill
R18	44 Windemere Rd, Robin Hill
R19	58 Windemere Rd, Robin Hill
R20	60 Windemere Rd, Robin Hill
R21	80 Windemere Rd, Robin Hill
R22	92 Windemere Rd, Robin Hill
R23	23 Windemere Road, Robin Hill
R24	331 Hartwood Av, Robin Hill
R25	260 Hartwood Av, Robin Hill
R26	290 Hartwood Av, Robin Hill
R27	120 Hartwood Av, Robin Hill
R28	11 Hartwood Av, Robin Hill
R29	21 Hartwood Av, Robin Hill
R30	20 Hartwood Av, Robin Hill
R31	70 Hartwood Av, Robin Hill
R32	60 Hartwood Av, Robin Hill
R33	50 Hartwood Av, Robin Hill
R34	Lot 1 DP 1002050, Evans Plains
R35	403 Evans Plains Road, Evans Plains
R36	90 Stewart St, Evans Plains
R37	447 Evans Plains Rd, Evans Plains

Sensitive Receiver No.	Address
R38	491 Evans Plains Rd, Evans Plains
R39	1022 Mid Western Hwy, Evans Plains
R40	82 Marys Lane, Dunkeld

**800 Mid-Western Hwy, Evans Plains is a is a host landowner*

2.4.3 Site Selection

A number of sites were considered during the site selection process for the Project, with regard made to the following:

- Appropriate zoning of land to facilitate development consent for a BESS;
- Availability of existing access to the site via an establish road network;
- Proximity to the existing TransGrid substation, to minimise impacts of easements;
- Selection of a construction location that would avoid and/or minimise impacts to high quality native vegetation and protected fauna;
- An area that would not result in, or be subject to, potential flood impacts; and
- Minimising impacts to surrounding privately or publicly owned land and residential dwellings due to noise and visual amenity concerns.

As demonstrated by **Figure 6** above, only 19 sensitive receivers have been identified within a 1 km buffer around the site, all of which are residential dwellings, with no commercial or education land uses identified.

During specialist investigations completed during the EIS process, additional design and siting consideration was given to the BESS facility to avoid the removal of any native vegetation within the broader Project site, and to ensure vegetation within the proposed construction impact boundary of the Project site contained only exotic pasture species. The current proposed layout and location of the Project has been amended through an iterative design process to avoid impacts to biodiversity values. In this regard, the original concept layout included placement of the proposed battery storage facility partly within an existing patch of native vegetation. The proposed location of the BESS compound was hence moved west to avoid the patch of native vegetation, thereby avoiding any direct impacts on native vegetation (and on biodiversity values in general). The same process was followed to realign the trenched 132 kV underground cable to avoid damage to the root systems of planted trees within Lot 521 DP 603541 (TransGrid substation).

2.5 Environment Context

2.5.1 Climate

The closest Bureau of Meteorology (BOM) climate station to the Site that provides current mean monthly climate and rainfall data is the Bathurst Agricultural Station Site (site number 063005), located approximately 3.5 km from the Site, with recording of climate data commencing in 1908.

Rainfall statistics for the Bathurst Agricultural Station are summarised in **Table 4** below. The statistics include the mean and annual monthly rainfalls, as well as information for minimum, median, and maximum recorded rainfall months/years, and the 5th, 10th, 90th and 95th percentile months/years.

Table 4: Detailed Monthly and Annual Rainfall Depths from Bathurst Agricultural Station

Statistic	J	F	M	A	M	J	J	A	S	O	N	D	Annual
Mean	68.4	57.6	53.6	41.5	41.4	44.1	48.2	50.1	47.1	59.3	63.3	65.2	642.1
Minimum	1.4	0	0	0.4	1	0.8	3.7	1.4	3.8	2.3	0.8	0	214.2
5th %ile	6.2	3.3	3.1	2.3	4.9	10	8	10.5	12.5	8.9	10.6	5.1	415
10th %ile	13.8	5.6	6.3	4.6	8.5	15.9	14.4	16	16	17.5	17.8	12.3	438.6
Median	57.9	47.2	41.8	36.5	34.8	36.8	41.7	46.9	44.4	54.6	56	58.1	629
90th %ile	132	127.1	123.5	84	80.6	88.6	92.1	90.4	80.3	106.7	115.7	134.8	857.4
95th %ile	156.3	143.7	139.4	107	95.4	101.7	108.6	103	94.1	118.3	136.6	149.8	933.2
Maximum	223.7	235.5	205.3	166	115	193.1	154.7	163.2	130.1	215.8	242.4	218.5	1275.2

Further detail on existing environment conditions at the site that consider air quality can be found in **Section 6.9**.

2.5.2 Hydrology

There are several drainage paths directly downstream of the Project which drain to Evans Plains Creek approximately 1 km west of the Project. No identified watercourses intersect the Project development area.

There is a watercourse crossing the existing access path through the site.

Existing drainage infrastructure at the TransGrid substation consists of minor channels and culverts which direct runoff to tributaries of Evans Plains Creek. Contour banks are the primary means to control surface water discharge across the broader lot which report to tributaries of Evans Plains Creek or small onsite dams. Evans Plains Creek joins the Macquarie River approximately 5 km north of the site.

Further detail on existing water and flooding at the site can be found in **Section 6.7** and the SGA (SLR Consulting, 2024) contained in **Appendix K.**

2.5.3 Soils and Topography

Elevation across the broader Project lot ranges between approximately 680 to 780 metres above Australian Height Datum (AHD), generally sloping east to west and down towards the Mid Western Highway. The majority of the lot is at slope greater than 10%. Natural elevation over the development footprint (prior to bulk earthworks) falls between 0 to 10 m east to west, and roughly 20 to 30 m along the north to south length.

Soil sampling results presented in the Land and Soil Capability Assessment (SLR Consulting, 2024) indicate Eutrophic Brown Dermosol and Anthroposol soil types across the Project development area. The likelihood of acid sulfate soils (ASS) occurring within the Project development area was assessed as very low due to the position away from the coast and potential acid sulfate landform type and furthermore, none of the soil types mapped within the Project development area have acid sulfate soil potential.

Further detail on existing soil at the site can be found in **Section 6.7** and the LSCA (SLR Consulting, 2024) contained in **Appendix L.**

2.5.4 Biodiversity

The majority of the Project development area has been historically cleared for grazing and pasture and shows signs of a long history of disturbance. The vegetation of the development site is largely a grassland composed of exotic pasture species with isolated stands of native

eucalypt trees, occurring near the entrance to the site and as a small stand of paddock trees in the central-eastern parts of the site.

According to the Biodiversity Values Map, the site is not identified as containing areas of high biodiversity value.

Further detail on existing biodiversity at the site can be found in **Section 6.2** and the BDAR Report Waiver Report (SLR Consulting, 2023) and associated approval is contained in **Appendix G.**

2.6 Cumulative Impacts

The *Cumulative Impact Assessment (CIA) Guidelines for State Significant Projects* (DPIE, 2021) require consideration of a Project together with the impacts of other relevant future and existing projects in order to determine the potential cumulative impact. The CIA (DPIE, 2021) indicates the following future projects should be considered in the cumulative impact assessment:

- Changes to existing projects (expansion, modification, closure);
- Approved projects (approved but construction has not commenced);
- Projects under assessment (application for the project has been exhibited and is currently under assessment); and
- Related development (development that is required for the Project but subject to separate assessment).

A search of the NSW Major Projects Portal, Planning Panel Portal and Transport for NSW (TfNSW) Major Projects Hub on 6 February 2023 found that the following projects may have interactions the following projects in the vicinity of the Site:

2.6.1 Bathurst Second Circuit (SSD-9681)

The Bathurst Second Circuit is located at Mount Panorama along Mid Western Highway to the immediate south-east of the broader Project lot. The application proposes the construction of a second motor racing circuit, spectator zone, flexible event space, automotive facilities (including a driver experience centre) and provisions for a future hotel.

The Request for SEARs for the SSD was lodged on 16 October 2018 and SEARs were issued for the project on 8 November 2019. No further progress has been made on the application.

The construction and seasonal operation of the Bathurst Second Circuit would introduce heavy and light vehicle traffic to the local road network which may interact with the traffic introduced by the Project during construction if the application progresses concurrently with the Project. Additionally, noise and vibration associated with operation of the Bathurst Second Circuit may introduce cumulative seasonal noise impacts during the limited main events and number of smaller events that take place at the existing circuit.

2.6.2 Glanmire Solar Farm (SSD-21208499)

The Glanmire Solar Farm is located at 4823 Great Western Highway, Glanmire which is approximately 16.8 kilometres (km) east of the broader Project lot. The application proposes the development of a 60 megawatt (MW) solar farm, associated infrastructure and battery storage.

The Request for SEARs for the SSD was lodged on 4 June 2021 and SEARs were issued for the project on 23 September 2021. An EIS for the application was lodged with DPHI on

26 October 2022 and a Request for a Response to Submissions was prepared for applicant consideration on 20 December 2022.

The construction of the Glanmire Solar Farm would introduce heavy and light vehicle traffic to the local and regional road network which may interact with the traffic introduced by the Project during construction if the application progresses concurrently with the Project.

2.6.3 Bathurst Integrated Medical Centre (SSD-30394840)

The Bathurst Integrated Medical Centre is located at 250 Howick Street and George Street, Bathurst which is approximately 5.6 km north-east of the broader Project lot. The application proposes the construction and use of an integrated medical facility providing hospital, medical centre and education uses and ancillary multilevel carpark to service the medical facility and other surrounding uses within the Bathurst Town Centre.

The Request for SEARs for the SSD was lodged on 13 October 2021 and SEARs were issued for the project on 26 October 2021. No further progress has been made on the application.

The construction and operation of the Bathurst Integrated Medical Centre would introduce heavy and light vehicle traffic to the local road network which may interact with the traffic introduced by the Project during construction if the application progresses concurrently with the Project.

2.6.4 St Stannislaus College Major Upgrade and Refurbishment (PPSWES-171)

The St Stannislaus College Major Upgrade and Refurbishment project is located at 220 Bentinck Street, Bathurst which is approximately 4.5 km east of the broader Project lot. The application proposes the partial demolition, and alterations and additions to the existing educational facility.

The referral to the Western Regional Planning Panel was made on 1 March 2023, and is currently under assessment.

The construction of the St Stannislaus College Major Upgrade and Refurbishment project would introduce heavy and light vehicle traffic to the local road network which may interact with the traffic introduced by the Project during construction if the application progresses concurrently with the Project.

3.0 Project Description

This chapter provides a detailed summary of the proposal.

3.1 Project Overview

The Project will involve the development, construction, operation, and eventual decommissioning of a BESS with a capacity of 100 MW, 200 MWh adjacent to the existing 132 kV substation operated by TransGrid. The BESS will consist of SolBank BESS containers (or enclosures), with each SolBank container having dimensions of 6058 mm by 2438 mm by 2896 mm, with an approximate weight of 30,000 kg. The BESS will be supported by inverters which will convert the electricity from the BESS and connect to the existing TransGrid substation via approximately 100 m of 132kV underground cable.

The key elements of the Project include the following:

- Installation and operation of a SolBank BESS including battery enclosures, inverters, and transformers on a concrete pad and benching of the site to level the foundation for each Project component;
- Associated ancillary infrastructure including:
  - A 132kV underground cable connecting a 33/132kV switch building to the existing substation;
  - Formalisation of existing access from Mid Western Highway and existing access road within Lot 2 DP 864272 to accommodate heavy vehicles;
  - Proposed access road from the BESS to connect to the existing access road within Lot 2 DP 864272;
  - O&M building;
  - Stormwater management infrastructure, lighting, and security fencing; and
  - Construction laydown areas.
- Decommissioning of the SolBank BESS at the EOL include disassembly and removal of associated infrastructure from the site, to be returned as close as possible to its existing condition.

Construction of the Project is anticipated to take approximately 14 to 15 months. It is expected that the operational life of the Project would be approximately 20 years, after which the BESS would be decommissioned and the infrastructure removed, returning the site to its original use.

The key aspects of the project are summarised in **Table 5** below:

Table 5: Project Summary

Project Element	Description
Key Features	• Construction, operation, and eventual decommissioning of a Battery Energy Storage System (BESS) with a capacity of 100 Megawatts (MW) 200 Megawatt Hours (MWh) and associated ancillary infrastructure adjacent to an existing 132 kV substation operated by TransGrid in Evans Plains, NSW (henceforth referred to as 'the Project'). • Connection of the BESS via a new underground transmission line (132kV) to the existing Transgrid substation.

Project Element	Description
Proposed Development	The Project would generally involve the following components: • Transport of construction personnel, associated heavy and light vehicles, and materials to and from site on a day-to-day basis, dependent on construction schedule; • Site establishment works including vegetation clearing, bulk earthworks, and temporary construction compound; • Road works to formalise internal site access road to accommodate heavy vehicles, construction of new access road from the BESS to connect to the existing access road within Lot 2 DP 864272, and construction of an upgrade to the Mid Western Highway site entry to provide a Basic Left Turn (BAL) treatment at the access driveway crossover; • Construction of concrete pad and installation of operations and maintenance (O&M) building, battery enclosures, and inverter stations; • Construction of underground 132 kV transmission cable and switch building to facilitate connection to the existing Transgrid 132kV substation in the north-eastern portion of the site; • Construction of ancillary works including stormwater management infrastructure, emergency night lighting, and security fencing; • Removal of grassland composed of exotic pasture species within BESS fencing boundary; and • Removal of temporary construction facilities, and rehabilitation of disturbed areas following completion of construction of the Project.
Site Description	• The Project would be constructed on Lot 2 DP 864272 at 800 Mid Western Highway, Evans Plains NSW. • The existing TransGrid substation that the BESS would be connected to via underground cabling is located on Lot 521 DP 603541 at 749 Mid Western Highway, Evans Plains NSW. • The overall site has an area of approximately 113.2 hectares.
Development Footprint	• All areas that may be disturbed by the Project during construction, operation and decommissioning, as depicted in **Figure 2**. The area of the development footprint is 3.47 hectares.
Site Access	• Access to the site would be via the existing site crossover on Mid Western Highway that services the TransGrid substation on Lot 521 DP 603541 via the construction of an upgrade to the Mid Western Highway site entry to provide a Basic Left Turn (BAL) treatment at the access driveway crossover. The internal access road is planned to be formalised to accommodate heavy vehicles associated with the construction of the BESS. • An additional connection road will be constructed from the existing internal road to the BESS.
Grid Connection	A new underground transmission line (132kV) will be constructed to connect the BESS substation switch building, to the existing Transgrid substation to the immediate north-east.
Construction Duration	Construction of the Project is anticipated to take approximately 14 to 15 months.
Operation Life Expectancy	The operational life of the Project is anticipated to be approximately 20 years.
Decommissioning	The Project would be decommissioned, and the infrastructure removed, returning the site to its original use following the approximate 20 year life expectancy.

The general layout of the Project can be seen in **Appendix B**. The development footprint of the Project can be seen **Figure 2** and **Figure 3** in **Section 1.2.3.**

No subdivision is proposed as part of the development.

3.2 Construction

Construction of the Project would require heavy vehicles, plant, and equipment for the transportation of components and installation of the components on the site. The Project is likely to require earth-moving equipment for civil and road works, cable trenching equipment, forklifts, and cranes subject to detailed design to install the BESS and complete ancillary works.

3.2.1 Construction Activities

It is anticipated that the construction and commissioning phase will last approximately 14 to 15 months. Over that time, the main construction activities will include:

- Transport of construction personnel, associated heavy and light vehicles, and materials to and from site on a day-to-day basis, dependent on construction schedule;
- Site establishment works including vegetation clearing, bulk earthworks, and temporary construction compound;
- Road works to formalise internal site access road to accommodate heavy vehicles, construction of new access road from the BESS to connect to the existing access road within Lot 2 DP 864272, and construction of upgrade to the Mid Western Highway site entry to provide a BAL treatment at the access driveway crossover;
- Construction of concrete pad and installation of O&M building, battery enclosures, and inverter stations;
- Construction of underground 132 kV transmission cable and switch building to facilitate connection to the existing Transgrid 132 kV substation in the north-eastern portion of the site;
- Construction of ancillary works including stormwater management infrastructure, emergency night lighting, and security fencing;
- Water use for dust suppression, brought to site in water tankers; and
- Removal of temporary construction facilities, and rehabilitation of disturbed areas following completion of construction of the Project.

3.2.2 Construction Materials

The following materials will be transported to site to facilitate construction of the Project and ancillary facilities and infrastructure:

- BESS Enclosures;
- Inverters and Power Converters Stations (PCS);
- Concrete works (i.e. concrete pads) materials and equipment;
- Bulk earthworks materials and equipment;
- Piling;
- Cabling;
- Building structures (incl. temporary structures for construction crew and management);
- Internal roads;
- 33KV Switchgear;

- Main Control Room;
- Fence & Gates;
- Fire Safety System;
- 33/132kV Main Transformer; and
- 132kV Switchgear.

3.2.3 Construction Hours and Personnel

During construction, it is anticipated that approximately 20 full time equivalent (FTE) jobs will be required during the peak of site activity.

The following standard construction hours are proposed for the Project:

- Monday to Friday - 7 am to 6 pm;
- Saturday – 8 am to 1 pm; and
- Sunday and Public Holidays - No works to be undertaken.

No works are proposed to be undertaken outside of the standard construction hours. In the event this is required, Out of Hours (OOH) approval would be sought, and all works would be undertaken in accordance with the appropriate OOH protocols and approval processes.

3.2.4 BESS Components

The following specifications are provided for the proposed BESS below in **Table 6**, with an example of a SolBank BESS module shown in **Figure 7**.

Table 6: BESS Specifications

Specification	Detail
Type	SolBank Energy Storage with Lithium Iron Phosphate (LFP) battery chemistry
Number of enclosures	Up to 112 battery enclosures Each battery pack consists of 69 battery cells, each battery rack consists of 6 battery packs. Each battery enclosure contains 8 racks connected in parallel
Dimensions	20-foot-high cube container (6058mm x 2438mm x 2896mm each)
Weight	30,000 kg each
Inverters	19 PowerElectronics HEMK Inverters (8800 Kilovolt-amps (kVA))
Integrators	9 Power Electronics double inverters skids, one (1) single inverter skid (10 skids total)
Additional systems	Each SolBank enclosure is fitted with a thermal management system, fire protection system, and explosion protection system

Figure 7: SolBank BESS Module

3.2.5 Site Access

It is proposed that access to and from the Project site will be provided from the site's existing crossover from Mid Western Highway which will remain a left-in and left-out entry and exit (LILO). This access already services the existing 132kV TransGrid substation on Lot 521 DP 603541. To provide direct access to the BESS and ancillary facilities, it is proposed that an additional connection road be constructed from the existing internal road which is planned to be formalised to accommodate heavy vehicles associated with the construction of the BESS.

The heavy vehicle route to be utilised for the construction of the Project is detailed in **Section 2.4.1** of the TIA (SLR Consulting, 2024) contained in **Appendix I**.

3.2.6 Ancillary Infrastructure

3.2.6.1 Stormwater

Figure 8 illustrates an indicative strategy to manage stormwater at the Project, noting that the proposed design is conceptual only to provide context and further design specification will be required during the detailed design phase of the Project. The proposed stormwater strategy includes:

- Culverts or pipes under site roads/access tracks;
- Table drains to direct runoff around the proposed BESS to the contour banks established at the Lot, and to control runoff within the BESS footprint;
- Compacted or lined sediment sump at the downslope end of the BESS to contain runoff, solids and any potential leakage from infrastructure at the BESS facility within the developed area; and
- Modification of the central and southern access tracks within the BESS to accommodate the sediment sump.

3.2.6.2 Earthworks

Whilst extensive earthworks are not proposed, some land forming (including localised cut and fill areas) may be undertaken to achieve more consistent gradients beneath the BESS

enclosures as well as for trenching purposes. Primarily , irrigation channels and associated buffers will isolate areas of different levels negating the need for levelling. Ground disturbance, resulting from earthworks would be minimal and limited to:

- The installation of piles required to support the BESS enclosures, driven into the ground to a depth of approximately 2.5 m to 4 m (dependent on geological conditions);
- Concrete or steel pile foundations for the inverter stations, substation, and maintenance storage containers;
- Trenches up to 1.2 m deep for the installation of cables;
- Disturbance within the construction laydown area including works to flatten the surface and covered with gravel;
- Establishment of temporary staff amenities for construction;
- Construction of perimeter security fencing; and
- Minor vegetation clearance.

The ground disturbance from pile foundations is estimated to equate to less than 1% of the total site area. Additional ground disturbance would result from trenches for cabling and footings for any other infrastructure.

3.2.6.3 Temporary Construction Facilities

Temporary construction facilities including portable toilets and a portable site office would be required for the duration of the construction phase, or until the proposed permanent site buildings have been constructed. Toilet facilities will involve waterless toilets (or equivalent) that are emptied off-site.

3.2.6.4 Fencing and Lighting

The Project site would be secured by up to 2.1 metre-tall chainmesh security fencing and access gates which would remain during operation.

Lighting for the Project is limited to the installation of emergency flood lighting which will not be operated during construction as construction is limited to standard daylight hours as detailed in Section 3.2.3. Emergency flood lighting would remain during operation.

3.2.6.5 Landscaping

A Visual Management Plan (VMP) is proposed to be prepared prior to construction of the Project which will document a range of mitigation measures relevant to visual amenity (as discussed in **Section 6.5**), including the consideration of landscaping and plant screening around the facility asset protection zone (APZ) (as discussed in **Section 6.13.4**).

If required, species from the endemic Central Tableland Clay Apple Box Grassy Forest (PCT3366) will be planted around the existing stand of trees above the site and establishing new stands of trees below the site as recommended by the Landscape Character and Visual Impact Assessment (SLR Consulting, 2024) (LCVIA). Otherwise, colour-matching of visible infrastructure elements with natural elements is sufficient to appropriately screen the facility.

To facilitate the transportation of the transformer to the site, some minor pruning of a tree at the driveway entrance may be required, in consultation with a qualified arborist.

3.2.6.6 Water Use

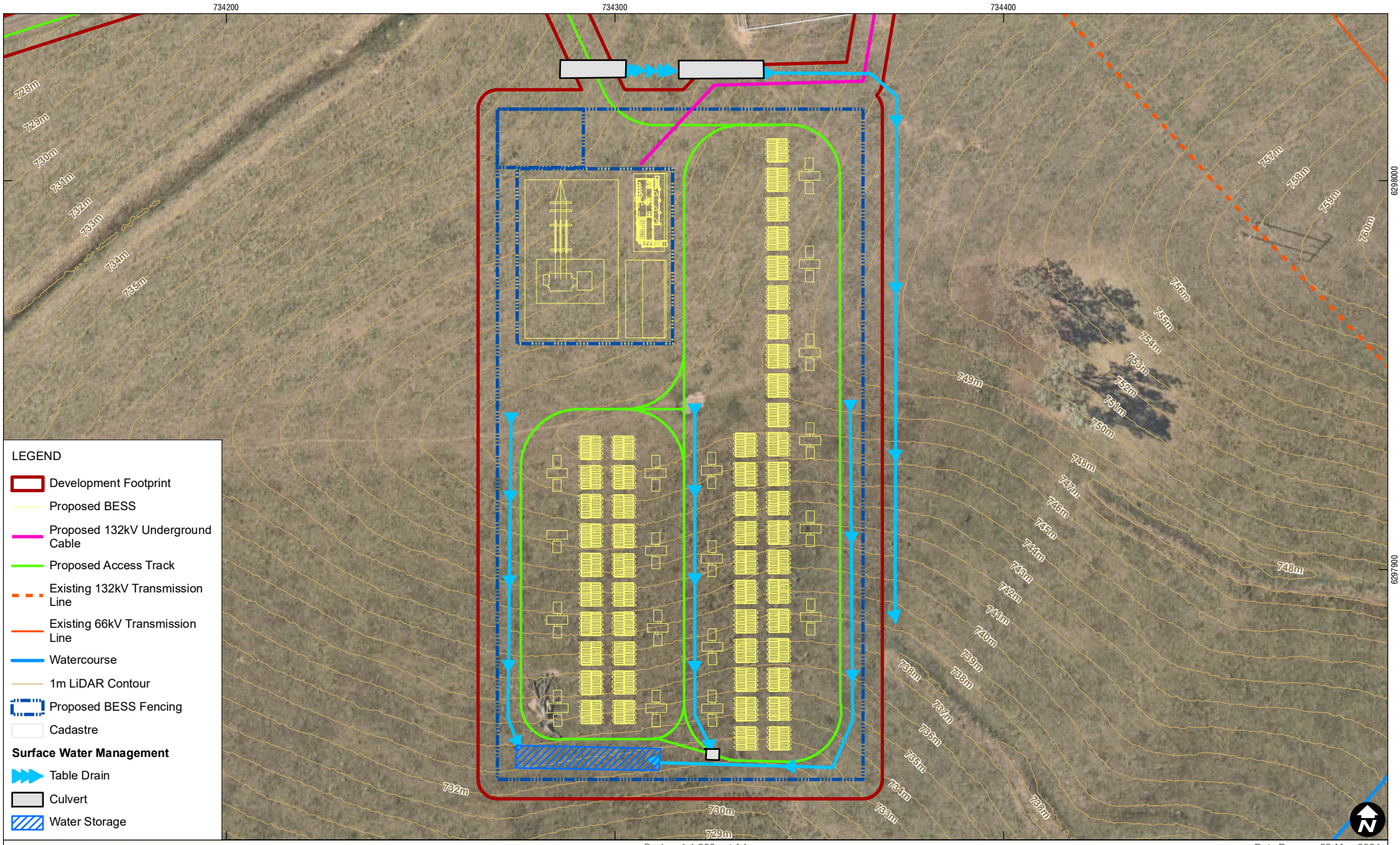
Water will be required during the construction phase for dust suppression, general construction, and maintenance activities. This water will be brought to site in water tankers.

Construction water requirements for the Project are estimated between 10,000 to 20,000 L per day. It is intended to source this water from the Bathurst Regional Council's bulk water supply which can be accessed through several water filling stations located in Hereford Street within the Bathurst township.

Wastewater during construction will be captured and appropriately removed from site/disposed in accordance with Council/water authority requirements. Potable water may be transported to site in bottles for use by the construction workforce. If utilised, toilet facilities will involve waterless toilets (or equivalent) that are emptied off-site.

During operation of the battery system, water will be utilised for potable water for site offices, cleaning of batteries and dust suppression on site access roads. Demands for non-potable water may be met by several methods which are under consideration, including small domestic scale water tanks collecting roof water or Supplementary water as required via water trucked to site and stored in a water tank. Operational water requirements for the Project have been estimated at 50 to 200 L per day. Toilet facilities, if required, will involve waterless toilets.

The proposal will include a static water tank for fire-fighting purposes. This water would only be used for firefighting and not for potable water supply nor for general non-potable site water use. The size and location of the tank will be confirmed during the detailed design stage, but will be a minimum of 20,000 L dedicated water supply for firefighting purposes.



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SLR

CONCEPTUAL SURFACE WATER MANAGEMENT SCHEME

FIGURE 8

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3.3 Operation

3.3.1 Operation Activities and Equipment

The operation of the Project would involve, but not be limited, to the following general activities:

- Maintenance and management of equipment, site buildings, and landscaping;
- General administrative activities;
- Receipt of equipment or goods; and
- Waste removal.

Minimal plant and equipment will be required for operation of the facility, primarily for staff access and maintenance vehicles.

3.3.2 Operational Hours and Personnel

The Project is proposed to operate 24 hours a day 7 days a week, with operation and maintenance by site staff undertaken during the following standard working hours as required:

- Monday to Friday 7 am to 6 pm; and
- Saturday – 8 am to 1 pm.

Emergency responses and maintenance activities may be required to be undertaken out of hours. During operation, it is anticipated that approximately one (1) FTE job will be required.

3.4 Decommissioning

The Project is proposed to be decommissioned and the infrastructure removed following the EOL of the BESS, with works required to return the site as close as possible to its original state and use. All decommissioning and restoration activities would be in accordance with permits, approvals and regulatory requirements at the time.

The standard construction hours and heavy vehicles, plant, and equipment required for the construction of the Project would also apply to the decommissioning phase.

3.5 Estimated Capital Investment Value

The Estimated Development Cost (EDC) of the Project is contained within the Estimate prepared by Hollis Partners Quantity Surveyors (2024) located in **Appendix Q.**

4.0 Statutory Context

This chapter describes the statutory context and the planning approval process for the Project as well as other relevant environmental and statutory planning requirements.

The statutory provisions of the following NSW and Commonwealth legislation, regulations and Environmental Planning Instruments (EPIs) are relevant to the Project and are therefore addressed in this Chapter and in **Appendix C**. They include:

- *Environment Protection and Biodiversity Conservation Act 1999*;
- *Environmental Planning and Assessment Act 1979* (EP&A Act) and Environmental Planning and Regulation 2021 (EP&A Regulation);
- *Biodiversity Conservation Act 2016*;
- *Heritage Act 1977*;
- *National Parks and Wildlife Act 1974*;
- *Roads Act 1993*;
- *Local Land Services Act 2013*;
- *Protection of the Environment Operations Act 1997*;
- State Environmental Planning Policy (Biodiversity and Conservation) 2021;
- State Environmental Planning Policy (Planning Systems) 2021;
- State Environmental Planning Policy (Resilience and Hazards) 2021;
- State Environmental Planning Policy (Transport and Infrastructure) 2021; and
- Bathurst Regional Local Environmental Plan 2014.

This section is to be read in conjunction with the full assessment of relevant legislation and the applicable provisions provided within the Statutory Compliance Table at **Appendix C**.

4.1 Power to Grant Approval

The EP&A Act and the EP&A Regulation form the statutory framework for planning approvals and environmental assessment in NSW. Implementation of the EP&A Act is the responsibility of the Minister for Planning and Public Spaces, State government agencies, and local government authorities. The requirement for development consent and various development controls are set out in environmental planning instruments (EPIs), including State Environmental Planning Policies (SEPPs) and local environmental plans (LEPs).

The relevant approval pathway, consent authority, and application requirements have been discussed in the following sections.

4.1.1 Approval Pathway

Part 4, Division 4.7 of the EP&A Act specifically relates to the assessment of SSD. The relevant instrument for the declaration of a project as SSD is the Planning Systems SEPP. In particular, clause 2.6(1b) of the Planning Systems SEPP states that development may be declared an SSD if it is specified within Schedule 1 or 2.

As per Schedule 1 clause 20(1) of the Planning Systems SEPP the Project is classified as SSD as it is defined as ‘electricity generating works and heat or co-generation’ and holds a capital investment value of more than $30 million. The Project is therefore assessed as SSD under the EP&A Act.

4.1.1.1 Consent Authority

The Minister for Planning and Public Spaces will be the consent authority for the Project in accordance with Section 4.5 of the EP&A Act. However, the Independent Planning Commission (IPC) (pursuant to clause 2.7 of the Planning Systems SEPP) is the consent authority for the following types of SSD:

a) *Development in respect of which the council of the area in which the development is to be carried out has duly made a submission by way of objection under the mandatory requirements for community participation in Schedule 1 to the Act,*

b) *Development in respect of which at least 50 persons (other than a council) have duly made submissions by way of objection under the mandatory requirements for community participation in Schedule 1 to the Act; and*

c) *Development the subject of a development application made by a person who has disclosed a reportable political donation under section 10.4 to the Act in connection with the development application.*

The requirement for the IPC to be the determining authority is to be confirmed following the completion of the EIS public exhibition.

4.1.2 State Significant Development Application

In accordance with Section 4.12 of the EP&A Act, a SSD application must be accompanied by an EIS. The EIS must be prepared in accordance with Schedule 2 of the EP&A Regulation. Schedule 2 of the EP&A Regulation provides the framework by which an application is made to obtain assessment requirements to inform the preparation of an EIS and the requirement for consultation with relevant public authorities. Schedule 2 also provides form and content which must be included within an EIS.

To inform the content of the EIS, a request for SEARs from the Secretary DPHI is required. The SEARS specify the issues that must be addressed in the EIS. The SEARs for the Project were issued by DPHI on 9 December 2022 and are summarised in **Appendix A,** with reference to compliance within the EIS and specialist studies.

4.1.3 Commonwealth Considerations

4.1.3.1 Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)

The Commonwealth EPBC Act aims to protect matters deemed to be of national environmental significance (MNES). A search of the Protected Matters Search Tool was undertaken on 31 March 2023 within a 10 km buffer of the Project area. The results of the search are provided in **Table 7**.

Table 7: Results of MNES Search

Matter of National Environmental Significance	Comment
World heritage properties	There are no World heritage properties listed within 10 km of the Project area.
National heritage places	There are no National heritage places listed within 10 km of the Project area.
Wetlands of national importance	There is four (4) Wetlands of national importance within 10 km of the Project area.

Matter of National Environmental Significance	Comment
Great Barrier Reef marine park	The Project is not located either within or adjacent to the Great Barrier Reef marine park.
Commonwealth marine park	The Project is not located either within or adjacent to the Commonwealth marine area.
Listed threatened ecological communities	There are two (2) listed threatened ecological communities (TECs) located within 10 km of the Project area.
Listed threatened species	There are 39 listed threatened species located within 10 km of the Project area.
Listed migratory species	There are 12 listed migratory species located within 10 km of the Project area.

A BDAR Waiver Report (SLR Consulting, 2023) has been prepared to inform the Project and submitted to DPHI for assessment prior to the submission of this EIS.

The BDAR Waiver prepared for the Project concluded that the Project site contains very limited or negligible biodiversity values, with the only notable feature of biodiversity value being a small patch of native trees, which through the application of avoidance measures during the design and siting of the BESS compound, will be retained in situ.

Following the submission of the BDAR Waiver Report, a BDAR Waiver was issued by the DPHI under clause 7.9(2) of the *Biodiversity Conservation Act 2016* (BC Act) on 11 April 2023. Additional details are provided in **Section 6.2** of the EIS and **Appendix G**.

There are unlikely to be significant impacts to MNES or Commonwealth land as a result of the Project and therefore does not require referral under the EPBC Act.

4.1.3.2 Native Title Act 1993

The *Native Title Act 1993* recognises the interests and rights Aboriginal people have to land and aims to provide recognition and protection of common law native title rights. A search of the Register of Native Title Claims showed no claim at the site, while a search of the Register of Native Title Claims returned one active claim within the Bathurst LGA under NC2018/002 for Warrabinga-Wiradjuri #7. The Project Area consists of freehold land which is exempt from native title claims.

4.2 Permissibility

The site occurs within the Bathurst LGA and therefore is subject to the *Bathurst Regional Local Environmental Plan 2014* (LEP). The site is located on land zoned 'RU1 – Primary Production' under the LEP. The Project is considered to meet the definition of 'electricity generating works' under the LEP, with these facilities defined by the LEP (in accordance with the Standard Instrument) as follows:

> ***electricity generating works*** *means a building or place used for the purpose of—*
>
> *(a) making or generating electricity, or*
>
> *(b) electricity storage.*

The Project involves construction, operation, and decommissioning of a BESS with a capacity of 100 Megawatts (MW) / 200 Megawatt Hours (MWh) and associated ancillary infrastructure, and is therefore considered to meet this definition. As the site is zoned 'RU1 – Primary Production' and development for the purpose of electricity generating works is captured under "any other development not specified in item 2 or 4", the development is considered permissible with consent under the LEP.

In addition to permissibility applied via the LEP, the Project may also be facilitated via the Transport and Infrastructure SEPP. Section 2.36 of the Transport and Infrastructure SEPP provides that development permitted with consent for the purposes of electricity generating works may be carried out by any person with consent on land in a prescribed rural, industrial, or special use zone.

The Project is permitted with consent under the Transport and Infrastructure SEPP and in accordance with the LEP.

4.3 State Considerations

4.3.1 Environmental Planning and Assessment Act 1979 and Regulation 2021

The EP&A Act and the EP&A Regulation form the statutory framework for planning approvals and environmental assessment in NSW. Implementation of the EP&A Act is the responsibility of the Minister for Planning and Public Spaces, State government agencies, and local government authorities. The requirement for development consent and various development controls are set out in environmental planning instruments (EPIs), including State Environmental Planning Policies (SEPPs) and local environmental plans (LEPs).

4.3.2 Other State Legislation

Provided in **Table 8** is a consideration of other NSW legislation which may have relevance to the Project, including approvals that are not required under Section 4.41 of the EP&A Act, or authorisations that cannot be refused under Section 4.42 of the EP&A Act, for SSD.

Table 8: Other State Legislation

NSW Legislation	Requirement
Coal Mine Subsidence Compensation Act 2017	The site is not mapped within a coal mine subsidence area.
Fisheries Management Act 1994	The Project does not impact on any aquatic habitats protected by this Act. A permit under section 201, 205, or 219 of this Act is not required for SSD.
Heritage Act 1977	The Project would not impact on any local or State heritage items. An approval under Part 4, or an excavation permit under section 139, of this Act is not required for SSD.
Mining Act 1992	The Project does not involve the extraction of mineral resources.
National Parks and Wildlife Act 1974	The ACHAR (Austral Archaeology, 2023, **Appendix H**) prepared for the Project concluded that there would be a direct impact and total loss of value to two identified Aboriginal sites identified during a test excavation program completed between 13 March 2023 and 17 March 2023, identified as Evans Plains AS1 (AHIMS #PENDING) and Evans Plains IF1 (AHIMS #PENDING) containing a total of five (5) artefacts. It is proposed that these artefacts are reburied in proximity to their original locations (outside of the development footprint) in consultation with Aboriginal stakeholders and protected for the duration of works associated with the construction and operation of the Project (refer mitigation measures in **Appendix E**). An Aboriginal Heritage Impact Permit (AHIP) under section 90 of this Act is not required for SSD.
Petroleum (Onshore) Act 1991	The Project does not involve the extraction of petroleum resources.
Protection of the Environment Operations Act 1997 (POEO)	Per Schedule 1, the Project does not involve the generation of electricity. The Project stores and releases electricity that has already

NSW Legislation	Requirement
	been generated. As such, Clause 17 does not apply to the Project, and an Environmental Protection Licence (EPL) is not required.
Roads Act 1993	The Project is required to be undertaken in accordance with this Act. An existing access to the Mid Western Highway is to be utilised by the Project with alteration to provide Project site access with a BAL treatment as per Austroads Guidelines prior to the commencement of construction and movement of heavy and light vehicles associated with the Project. Approval under s138 of the Roads Act 1993 is required in this instance as per the TIA (SLR Consulting, 2024) contained in **Appendix I.** Consent under section 138 of this Act cannot be refused if necessary for carrying out an SSD if development consent has been issued.
Rural Fires Act 1997	The site is not mapped within bushfire prone land.
Water Management Act 2000	The Project does not require any controlled activity approvals or aquifer interference approvals. It is noted that a water use approval under section 89, a water management work approval under section 90 or an activity approval (other than an aquifer interference approval) under section 91 of this Act is not required for SSD.
Biodiversity Conservation Act 2016 (BC Act)	Section 7.9 of the BC Act requires that an SSD application be accompanied by a BDAR unless the Project is not likely to have any significant impact of biodiversity values. The BDAR Waiver (SLR Consulting, 2023) prepared for the Project concluded that the Project site contains very limited or negligible biodiversity values, with the only notable feature of biodiversity value being a small patch of native trees, which through the application of avoidance measures during the design and siting of the BESS compound, will be retained in situ.
Contaminated Land Management Act 1997	A search of the NSW EPA POEO Public Register was made on 15 June 2023 indicating three (3) contaminated land sites located within the Bathurst LGA, two (2) being in the suburb of Bathurst located over 5 km to the east of the Project site, and one (2) being in the suburb of Yetholme. A search was also made on this date of the NSW EPA POEO Public Register indicating 34 POEO licences registered in the Bathurst LGA, with the closest licence (No. 20550) registered to 1088 Mid Western Highway, Evans Plains approximately 3.5 km to the south-west of the Project site. As no contaminated land sites or EPLs have been registered for the site, it is reasonable to consider the potential for contamination unlikely and the land suitable for the purpose of the Project, being electricity storage works. An appropriate unexpected finds protocols will be implemented during construction and decommissioning phases.
Local Land Services Act 2013 (LLS Act)	Confirmation of the cleared nature of the site has been established via aerial imagery dated 5 October 1989, and the Project site is therefore able to be classified as Category 1 – Exempt Land under the LLS Act 2013.

4.3.3 Environmental Planning Instruments (EPIs)

A full consideration of the relevant EPIs is outlined in **Appendix C**. A summary of the key EPIs is made below.

4.3.4 State Environmental Planning Policy (Transport and Infrastructure) 2021

The Transport and Infrastructure SEPP aims to facilitate the effective delivery of infrastructure across the State through increased regulatory certainty and improved efficiency and flexibility in the location of infrastructure and service facilities, whilst also providing for adequate stakeholder consultation.

Section 2.36 of the Transport and Infrastructure SEPP provides additional options to achieve permissibility for electricity generating works and has been discussed at Section 4.2 of this EIS. Permissibility is available via both the Transport and Infrastructure SEPP and the LEP 2014. As previously noted, the Project's approval pathway is via SSD.

Consultation with the relevant electricity supply authority is required under Section 2.48 due to the Project's connection to the electrical supply network. Any requirements are to be resolved with the relevant authority.

Noting the site's location with frontage to a Classified road being the Mid Western Highway, the provisions of Division 17 Subdivision 2 *Development in or adjacent to road corridors and road reservations* have been considered. The Project does not generate sufficient traffic to be considered traffic generating development under Section 2.122.

4.3.4.1 State Environmental Planning Policy (Planning Systems) 2021

The Planning Systems SEPP identifies development to which the SSD assessment and approval process under Division 4.7 of Part 4 of the EP&A Act applies. The Project is a development for the purpose of 'electricity generating works and heat or co-generation' that has a capital investment value of more than $30 million, accordingly as per clause 20(1) of Schedule 1 of the Planning Systems SEPP the project classified as SSD.

4.3.4.2 State Environmental Planning Policy (Resilience and Hazards) 2021

Hazard and Risk

Chapter 3 of the Resilience and Hazards SEPP establishes a comprehensive test by way of a preliminary screening assessment and preliminary hazard analysis (PHA) to determine the risk to people, property, and the environment. As the BESS is considered a 'potentially hazardous or potentially offensive development' under Part 3, a preliminary hazard analysis in accordance with the current circulars or guidelines published by DPHI must be prepared.

Consequently, a Preliminary hazard Assessment (PHA) has been completed to support the Project EIS with discussion provided at **Section 6.13** of this EIS.

Contamination

Chapter 4 of the Hazards SEPP aims to provide a state-wide planning approach to contaminated land remediation and to promote the remediation of contaminated land to reduce the risk of harm.

A search of the NSW EPA POEO Public Register was made on 15 June 2023 indicating three (3) contaminated land sites located within the Bathurst LGA, two (2) being in the suburb of Bathurst located over 5 km to the east of the Project site, and one (2) being in the suburb of Yetholme. A search was also made on this date of the NSW EPA POEO Public Register indicating 34 POEO licences registered in the Bathurst LGA, with the closest licence (No. 20550) registered to 1088 Mid Western Highway, Evans Plains approximately 3.5 km to the south-west of the Project site.

As no contaminated land sites or EPLs have been registered for the site, it is reasonable to consider the potential for contamination unlikely and the land suitable for the purpose of the Project, being electricity storage works. An appropriate unexpected finds protocols will be implemented during construction and decommissioning phases.

4.3.5 Local Environmental Plans and Policies

Bathurst Regional Local Environment Plan 2014 (LEP)

The site occurs within the Bathurst LGA and therefore is subject to the LEP.

The site is located on land zoned 'RU1 – Primary Production' under the LEP. The Project is considered to meet the definition of 'electricity generating works' which is permitted with consent under the LEP 2014 by virtue of being "any other development not specified in item 2 or 4".

The Project is considered to be consistent with the objectives of the LEP 2014 by providing social and economic benefits by supporting the establishment of renewable energy generation within the Bathurst region and by extension contribute to climate change action through emission reductions.

A full assessment of the relevant provisions of the Bathurst Regional LEP 2014 has been provided within the Statutory Compliance Table at **Appendix C**.

Bathurst Regional Development Control Plan (DCP) 2014

As the project is classed as SSD, it is not subject to the provisions of the DCP 2014.

4.4 Project Approvals

4.4.1 Overview

This section provides an overview of other approvals required to carry out the Project. Approvals required for the Project are identified in **Table 9.**

Table 9: Project Approvals

Legislation	Permit / Approval	AUTHORITY
EP&A Act	Development Approval	DPHI
Roads Act	Section 138 Approval	Council/TfNSW

5.0 Community and Stakeholder Engagement

This chapter provides a description of the consultation undertaken with the local community and key stakeholders.

5.1 Aboriginal Consultation

An ACHAR was prepared by Austral Archaeology (2023) (located in **Appendix H**) to inform the Project as detailed in **Section 6.3**. The consultation requirements defined within the ACHAR outline a four-stage consultation process which includes:

5.1.1 Stage 1

Stage 1 consisted of notification of the Project and registration of interest of relevant bodies, and Registered Aboriginal Parties (RAPs). In accordance with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (DECCW, 2010), Austral notified the following bodies (with a copy of these letters and searches located in Volume 2 of the ACHAR (Austral Archaeology, 2023) in Appendix H):

- Heritage NSW;
- The Bathurst Local Aboriginal Land Council (BLALC);
- The Central Tablelands Catchment Management Authority;
- Bathurst Regional Council; and
- The National Native Title Tribunal.

A search conducted by the Office of the Registrar under the *Aboriginal Land Rights Act 1983* listed no Aboriginal stakeholders for the land within the broader Project site. An advert was also placed in the Western Advocate to run on 25 of August 2022, requesting the registration of cultural knowledge holders relevant to the broader Project site.

Letters were then written to the relevant agencies on 22 August 2022 and a search was made of the Native Title Tribunal on the same day. As a result of the above consultation, the following groups registered as Aboriginal stakeholders with an interest in this Project:

- BLALC;
- Didge Ngunawal Clan;
- TMS Consulting;
- Yurwang Gundana Cultural Heritage Services; and
- Wiradjuri Council of Elders.

5.1.2 Stage 2

Stage 2 consisted of presentation of information about the Project, where all registered Aboriginal stakeholders noted above were provided with information outlining the proposed works, including information relating to proposed impacts as well as the Project's methodology on 12 October 2022. Copies of all correspondence relating to the provision of project information to registered Aboriginal stakeholders are located in Volume 2 of the ACHAR (Austral Archaeology, 2023) in **Appendix H**.

5.1.3 Stage 3

Stage 3 involved the gathering of information about cultural significance, by providing each Aboriginal stakeholder with a copy of the Project methodology on 12 October 2022 which outlined the proposed assessment process that would be used in the completion of the

Project. Aboriginal stakeholders were provided with 28 days to review and provide feedback on this methodology.

Of the five (5) registered stakeholders, two (2) replied in support of the methodology, and one replied acknowledging the email.

5.1.4 Stage 4

The final stage of the consultation process included the review of the draft ACHAR prepared by Austral Archaeology by the RAPs and was completed between 26 June to 24 July 2023. One response was received noting support for the draft ACHAR, with no other responses received.

A consultation update for this project was sent on Friday 19 January 2024, with no other responses received.

5.2 Community Consultation

Engagement and consultation associated with the Project has been conducted with both community and agency stakeholders.

Community stakeholders were notified of the proposed development and invited to engage via formal letter, delivered via post to surrounding residential properties as shown in **Figure 9**. A total of 393 addresses are included within the consultation catchment.

An initial letter requesting engagement on the Project was issued on 10 October 2022, with a subsequent letter containing a Project update and frequently asked question (FAQ) section was issued on 21 March 2023. A copy of the engagement letters is included at **Appendix R**.

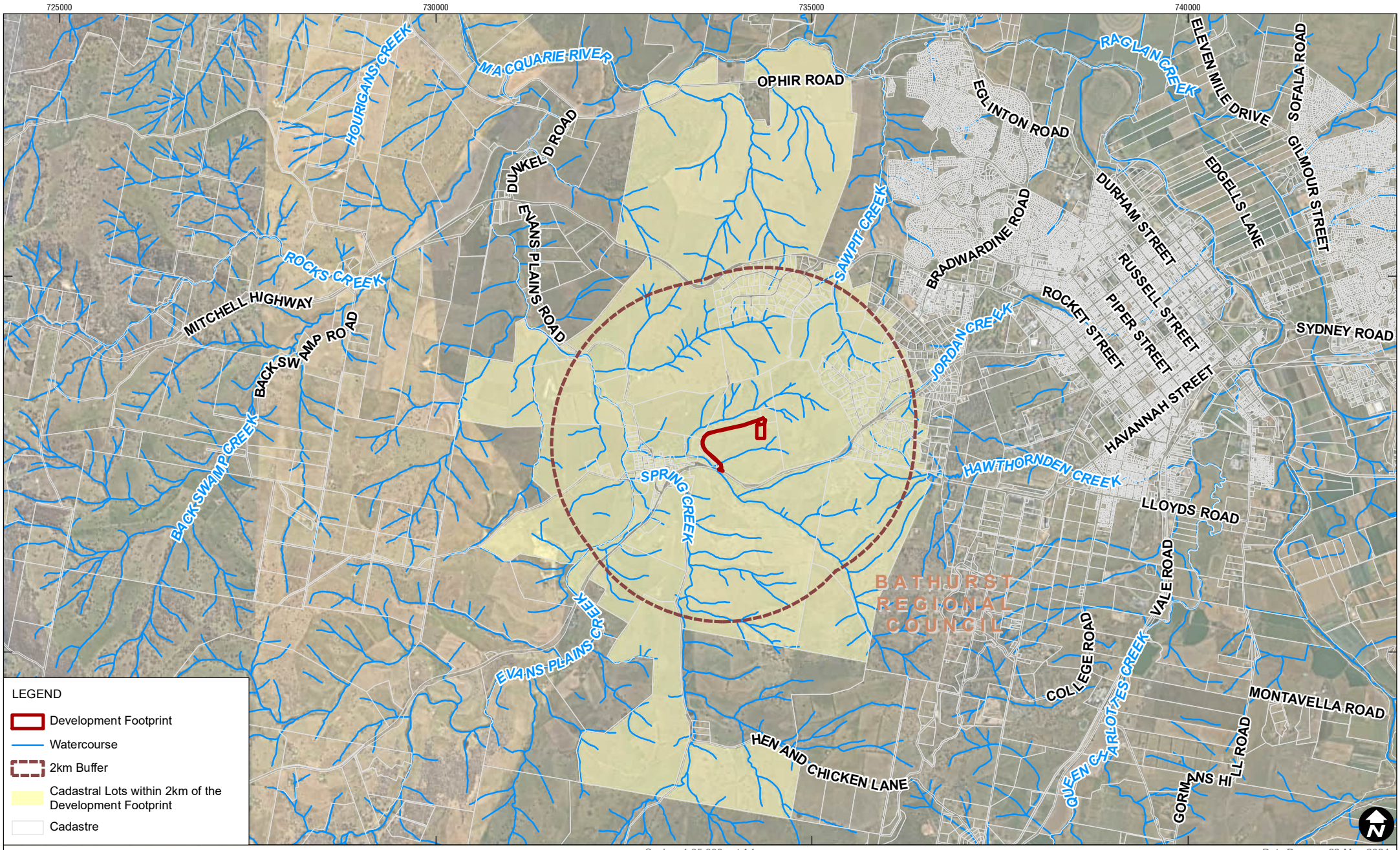
A Project website was also created with Project information, approximate approval timelines, and an FAQ section as well as avenues to contact the Project team for questions. The link to the website was included in the second letter issued 21 March 2023 to support community members in finding Project updates (https://panoramabattery.com.au/).

In response to the invitation to engage, four emails were received and four phone interviews were held to discuss the Project and address any issues or queries around the development. A summary of matters addressed is included in **Table 10**.

Community drop-in sessions were held on 4 and 5 December 2023 at the Bathurst City Bowling Club, with Recurrrent Energy representatives present. A total of 1,403 directly addressed letters were sent to residents within 3km of the project and along the transport route, inviting members of the public to attend the information sessions to:

- Introduce the project planning and development team;
- Update the community on the Panorama BESS development process, with the EIS nearing lodgement at the time of the sessions;
- Discuss the outcomes of the environmental assessment and concerns around project impacts;
- Gain community feedback on the proposed benefits sharing of the project; and
- Demonstrate commitment to open and ongoing consultation with the host community.

Pull-up banners with project information were displayed during the sessions and printed maps and copies of the Executive Summary of the EIS were available to facilitate discussions. Four people attended the sessions.



Scale: 1:65,000 at A4
Coordinate System: GDA 1994 MGA Zone 55

Date Drawn: 22-May-2024
Project Number: 660.30234.00000

Data Source: Basedata NSW SS, December 2021
Aerial imagery supplied by Nearmap (March, 2024)
Elevation data supplied by DCS Spatial Services (July, 2019)

SLR

COMMUNITY STAKEHOLDER CATCHMENT

FIGURE 9

H:\Projects-SLR\660-SrvWOL\660-WOL\660.30234.00000 Bathurst BESS SSD Approvals\06 SLR Data\01 CADGIS\GIS\SLR66030234_EIS_G14_StakeholderPlan_002.mxd

Table 10: Summary of Community Consultation

Method of Communication	Community Stakeholder (and nature of interaction)	Summary of Consultation
Resident mail out 10 October 2022	Mail out	An initial letter requesting engagement on the Project was sent to residents/owners/occupiers.
Email 19 October 2022	Owner/occupier Unknown address	Primary concerns raised around fire risk. Request for clarification on decommissioning phase.
Phone 20 October 2022	Owner/occupier McLennan Close	Primary concerns raised around noise and saleability of residence in the future.
Phone 21 October 2022 Email 29 March 2023	Owner/occupier Stewart Street, Evans Plains	Primary concerns raised around fire risk, visual amenity, light pollution, and erosion and sediment control during earthworks. Resident noted involvement in local community climate change group and noted approval for Project objective.
Email 23 October 2022	Owner/occupier Mid Western Highway, Evans Plains	Request for Project updates during SSD process.
Phone 24 October 2022	Owner/occupier McClennan Close, Robin Hill	Primary concerns raised around noise and saleability of residence in the future.
Onsite discussion 27 October 2022	Owner / occupier Mid Western Highway, Evans Plains	Discussed the site, its history and site alterations that had occurred in recent years. Potential of any surrounding residents having any objections about any proposals on the subject site.
Onsite meeting 27 October 2022	Owner / occupier Stewart Street, Evans Plains	Site visited and noted that the elevation of it was similar to that of the development site.
Phone 31 October 2022	Owner/occupier Robin Hill	Request for clarification on whether associated solar farm would also be proposed in the future.
Email 2 November 2022 Follow up on 9 November 2022	Owner/occupier Robin Hill	Primary concerns raised around noise and visual amenity. Request for clarification on decommissioning phase, and source of energy production to be stored by BESS.
21 March 2023	Mail out	A letter was sent to residents providing a project update and FAQ section on the Project.
Letter 15 November 2023	Mail out	Letters were sent to residents within 3km of the project and along the transport route, inviting members of the public to attend the information sessions.
Community consultation drop-in sessions 4 and 5 December 2023	4 local residents attended workshops	One neighbour was particularly supportive of the project (and renewable power in general). Informal engagement with members of the public who were in the bowling club during the sessions was also undertaken, some of whom lived locally to the project. There was a general sentiment that the project was not a cause of concern among the community.
Letter 29 January 2024	Owner/occupier Stewart Street	Project update, including consultation about construction noise exceedances and proposed mitigation.
Phone call 2 February 2024	Owner/occupier Stewart Street	Primary concerns related to dust (existing dust and potential for dust during construction).

Method of Communication	Community Stakeholder (and nature of interaction)	Summary of Consultation
Email 23 February 2024	Owner/occupier Stewart Street	An email detailing the proposed dust mitigation measures proposed during construction, and the potential for some vegetation screening on the property boundary was proposed.

5.3 Agency Consultation

As part of the SEARS, agencies have been consulted, and their responses are summarised in **Table 11** below. Further consultation undertaken since the receipt of the SEARs is also noted in **Table 11.**

Table 11: Summary of Agency Consultation

Agency	Summary of Agency Response
Bathurst Regional Council	Request for preliminary engagement issued via email on 15 November 2022. Following this initial consultation with Council, a request consideration of construction access and the need to consider alternate routes was made. On 2 November 2023 RE contacted Council to provide a project update and to schedule a meeting. A meeting was held with Council on 4 December 2023 to explain the project in detail and discuss the project approval timeframe. Council indicated general support of the project. Council did note that the community have previously raised concerns in relation to solar projects. The use of Evans Plains Road, including the unsealed section, was discussed with Council, including the low traffic volumes and speed, safe sight distances and the details of the TIA. TfNSW's comments were also discussed, as were other assessment issues including visual impact, noise, battery fire risk and heritage.
NSW Rural Fire Service	Requested the preparation of a Fire Safety Study in accordance with the DPIE Hazardous Industry Planning and Assessment Papers (HIPAPs).
NSW Fire and Rescue	Requested further consideration of fire safety and emergency response management.
DPE - Biodiversity, Conservation and Science Directorate (now part of Department of Climate Change, Energy, the Environment and Water)	Requested consideration of Biodiversity, Water and Soils, and Flooding.
Department of Primary Industries (DPI) – Agriculture	Requested consideration of post use rehabilitation, biosecurity (pests, weeds and diseases).
Transgrid	Noted procedural requirements for connection to Transgrid's network. Subsequently a connection enquiry under the National Electricity Rules was submitted on 23 August 2022. On 4th October 2022 Transgrid confirmed that it was the correct Network Service Provider for the connection to the network. Panorama BESS is now commencing design of connection services to complete the connect application."
DPE – Heritage NSW (now part of Department of Climate Change, Energy, the Environment and Water)	Noted the need to prepare an ACHAR as part of the future application.
DPE – Industrial Assessments (now part of DPHI)	Requested a Preliminary Hazard Analysis (PHA) prepared in accordance with the Hazardous Industry Planning Advisory Paper No. 6, 'Hazard Analysis' and Multi-level Risk Assessment.

Agency	Summary of Agency Response
DPE – Water (now part of Department of Climate Change, Energy, the Environment and Water)	Requested consideration of impacts to groundwater, surface water, water sharing plans, ground water dependent ecosystems and waterfront land.
DPE – Crown Lands (now part of DPHI)	No additional comments made.
Transport for NSW	Following initial consultation, TfNSW requested preparation of a TIA, which considered aspects including traffic volumes, characteristics and capacities, heavy vehicles routes, cumulative impacts, road safety and any required road network upgrades. A project and transport update was provided to TfNSW (Development West) on 22 November 2023 via email, including providing a copy of the TIA. Specifically, comments were requested from TfNSW on the proposed site access location and BAL treatment, as well as the light vehicle right-turn site entry, prior to finalisation of the EIS: • The Project site access location (left in turn from eastbound direction on Mid Western Highway) at the existing access driveway crossover is proposed to be designed with a BAL treatment as per Austroads Guidelines prior to the commencement of construction and movement of heavy and light vehicles associated with the Project; and • All light vehicles are proposed to travel on the Mid-Western Highway in the westbound direction and turn right into the site via the existing access driveway crossover, which will require light vehicles to cross the carriageway in close proximity to the beginning of an overtaking lane. The arrangement has been assessed as appropriate and safe given negligible delays due to low vehicular volumes (21 inbound light vehicles per day); safe intersection sight distances (SISD) are satisfactory; and turn warrant assessments indicate that no dedicated turn lanes are necessary. An initial response was received from TfNSW on 6 December 2023 seeking additional information, including turn warrants assessment and SISD check. SLR responded to note that these had been included in the TIA, providing section references for Transport's convenience. TfNSW responded on 20 December 2023 to advise that: • The SISD and methodology used are both acceptable. • The swept path is based on the largest vehicle identified in the TIA and this will be a condition of any consent . • Turn warrants appear to be applied incorrectly. A detailed response was provided to TfNSW on 21 December 2023 to resolve the concern regarding turn warrants, explaining that they are consistent and that the short construction duration of 14 months explains why the diagrams look different. Recurrent Energy and SLR offered to meet with TfNSW to discuss or provide more information if needed. A follow up email was sent to TfNSW on 18 January 2024 and 13 February 2024 to follow up any further comments. No further response has been received from TfNSW at this time.
DPI - Fisheries	No additional comments made.
Department of Regional NSW – Mining, Exploration & Geoscience (MEG) - Geological Survey of NSW (GSNSW)	No additional comments made.

5.4 Ongoing and Future Engagement

Ongoing consultation and engagement shall be undertaken through all future stages of the Project.

Ongoing consultation and engagement will be undertaken throughout the remainder of the planning approval process, primarily through written communication and website updates.

Formal notification of the Project will be undertaken by DPHI during the assessment period for the SSD, with the Proponent committed to responding to all relevant issues and queries arising during this period through DPHI's formal response to submissions process.

During construction, consultation and engagement shall be undertaken with relevant parties in accordance with **Section 3** of the CSEP and will include notification of the commencement of works and consultation on works with the potential for impact on nearby receivers. The Proponent and their contractors will continue to engage and work with all relevant agencies and authorities to meet all regulatory requirements and ensure compliance with conditions of consent.

As the Project progresses, refinement of this document and the tools located within the engagement strategy may be required to ensure the ongoing effectiveness of engagement measures proposed.

6.0 Assessment of Impacts

This chapter provides a detailed assessment of the key environmental issues and recommended mitigation measures for the Project, and addresses the requirements of the SEARs and outlines the mitigation measures proposed to address any potential impacts. The below discussion provides a summary of the specialist studies prepared, which are appended to the EIS.

The following key issues were identified in the EIS Scoping Study and in the SEARs for detailed assessment:

- Noise and vibration
- Biodiversity
- Aboriginal heritage
- Traffic and access
- Visual amenity
- Water quality
- Land quality
- Land Use Conflict
- Air quality
- Social
- Economic
- Waste management
- Hazard and risk
- European Heritage

6.1 Noise and Vibration

This section presents the findings of a Noise and Vibration Impact Assessment (SLR Consulting, 2024) (NVIA) prepared in response to the SEARs. The NVIA includes a detailed analysis of the existing environment and proposed construction and operation, and outlines the methodology and criteria utilised to form an assessment of the Project. This report assesses the potential construction and operational noise and vibration impacts associated with the Project. The NVIA is located at **Appendix F**.

6.1.1 Existing Environment

6.1.1.1 Sensitive Receivers

The nearest sensitive receivers are the residential dwelling newly constructed on Lot 2 DP 864272 (800 Mid Western Highway), several rural residences located to the south-west, residences to the east on Windemere Road, and residences to the north on Hartwood Avenue. The residence on Lot 2 DP 864272 also shares the existing site access and internal access road currently in utilised for the TransGrid substation on Lot 521 DP 603541. The TransGrid substation located adjacent to the Project site has been identified as an industrial receiver.

The nearest sensitive receivers are shown on **Figure 6** (in **Section 2.4.2**) and summarised in **Table 12,** with a detailed listing contained **Appendix B** of the NVIA (SLR Consulting, 2024) contained in **Appendix F**.

Table 12: Nearest Surrounding Sensitive Receivers

ID	Address	Receiver Type	Distance (m)	Direction
R1	800 Mid Western Highway, Evans Plains (residential receiver located on the broader Project site and current landowner residence)	Residential	490	West
R2	16 Stewart Street, Evans Plains	Residential	790	West
R3	24 Stewart Street, Evans Plains	Residential	950	West/South-West

ID	Address	Receiver Type	Distance (m)	Direction
R7	831 Mid Western Highway, Evans Plains	Residential	870	South West
R35	403 Evans Plains Road, Evans Plains	Residential	1340	West
R9-R11	McLennan Close, Robin Hill	Residential	1210	East/South-East
R12-R23	Windemere Road, Robin Hill	Residential	990	North-East
R24-R33	Hartwood Avenue, Robin Hill	Residential	1,480	North
	Transgrid Substation	Industrial	100	North/North-East

6.1.1.2 Noise Monitoring

Unattended Noise Monitoring

Unattended ambient noise monitoring was conducted Friday 28 October 2022 to Thursday 22 November 2022 at the locations listed below in **Table 13**. Information of the logger locations and graphs of each day's noise logging are presented in **Appendix C** of the NVIA (SLR Consulting, 2024) contained in **Appendix F**.

It should be noted that L_{A90} means the A-weighted sound pressure level that is exceeded for 90 per cent of the time interval considered, and L_{Aeq} means the equivalent continuous sound pressure level.

Table 13: Summary of Ambient and Background Noise Levels

Location ID	Address	Measured Noise Level (dBA)[1]					
		Rating Background Levels (L_{A90})[2]			Ambient Noise Levels (L_{Aeq})		
		Day	Evening	Night	Day	Evening	Night
L01	800 Mid Western Hwy, Evans Plains	35 (26)[3]	30 (28)[3]	30 (30)[3]	53	45	51
L02	44 Windemere Road, Robin Hill	35 (31)[3]	30 (28)[3]	30 (22)[3]	54	50	47
L03	270 Hartwood Avenue, Robin Hill	35 (30)[3]	30 (30)[3]	30 (27)[3]	60	58	51

Note 1: Noise Policy for Industry (NPfI) assessment periods – Daytime: 7:00 am to 6:00 pm Monday to Saturday, 8:00 am to 6:00 pm Sundays and Public Holidays; Evening: 6:00 pm to 10:00 pm; Night: 10:00 pm to 8:00 am Monday to Saturday, 10:00 pm to 8:00 am Sundays and Public Holidays

Note 2: The RBL noise level is representative of the "average minimum background sound level", or simply the background level.

Note 3: The NPfI minimum RBL value has been used due to the measured RBL (as shown in brackets) being below the NPfI minimum value.

Attended Noise Monitoring

Attended monitoring was also conducted at the three unattended locations detailed in **Table 13**, to observe the existing ambient noise environment in the area, as presented in **Table 14.**

Table 14: Summary of Attended Noise Monitoring Results

Noise Monitoring Location	Date/time	Sound pressure level (dB re 20 µPa), 15 minute measurement period			Typical ambient noise levels (noise level in dBA)
		L_{A90}	L_{Aeq}	L_{Amax}	
800 Mid Western Highway, Evans Plains	22/11/22 14:33	35	43	53	Cows: 37-48 dBA Wind: 37-41dBA Workers: 48-53dBA
44 Windemere Road, Robin Hill	22/11/22 14:02	40	46	53	Wind: 34-50dBA Birds: 45-53dBA
270 Hartwood Avenue, Robin Hill	22/11/22 15:40	39	46	52	Wind: 45-52dBA Birds: 43dBA

The unattended and attended ambient noise monitoring results are consistent with those of a semi-rural area as defined in the NPfI prepared by the NSW EPA (2017).

6.1.2 Construction Impact Assessment

The NSW Interim Construction Noise Guideline (ICNG) is used to assess and manage impacts from construction noise at residences and 'other sensitive' land uses in NSW. The ICNG contains procedures for determining project specific Noise Management Levels (NMLs) based on the existing background noise in the area. Representative 'worst-case' noise levels from construction of a project are predicted and then compared to the NMLs in a 15-minute assessment period to determine the likely impact. The NMLs are not mandatory limits, however, where construction noise levels are predicted or measured to be above the NMLs, feasible and reasonable work practices to minimise noise emissions are to be investigated.

Construction activities associated with the Project have been identified as follows:

- Site establishment;
- Enabling and earthworks to provide roadway access from the existing substation, a level area for the location of equipment, and trench(s) for underground cabling;
- Civil works and construction of the operations and maintenance building;
- Location of equipment on site; and
- Commissioning.

6.1.2.1 Construction Noise

Construction noise modelling was undertaken using SoundPlan v8.2 software, with the significant noise generating stages/scenarios of the Project for the purposes of modelling identified as follows:

- Scenario 1 - Site Establishment;
- Scenario 2 - Enabling and earthworks; and
- Scenario 3 - Civil works and build construction.

Construction equipment for the above scenarios and the associated equipment sound power levels (SWL) used in the modelling are detailed in **Appendix E** of the NVIA (SLR Consulting, 2024) contained in **Appendix F**. The assessment uses 'realistic worst-case' scenarios to determine the impacts from the noisiest 15-minute period that is likely to occur for each work scenario where all equipment in each scenario is working concurrently, as required by the

ICNG. In addition heavy vehicles were modelled on the access road with a speed of 10km/hr assumed, and given the time to travel on the access road from the Mid Western Highway to the site is more than 8 minutes a maximum of one movement for the 15 minute assessment period was assumed.

Construction works would be undertaken during standard construction hours as outlined in the ICNG, as follows:

- 7.00 am to 6.00 pm Monday to Friday;
- 8.00 am to 1.00 pm on Saturdays; and
- No work on Public Holidays or Sundays.

Construction noise from each of the construction scenarios above was modelled at the nearest residential receivers as shown in **Table 15** below.

Table 15: Predicted Daytime Construction Intrusive $L_{Aeq(15minute)}$ Noise Levels (dBA re 20 µPa)

Receiver [1]		LAeq Noise Level			
		Daytime Project Specific NML	Scenario 1 - Site establishment	Scenario 2 - Enabling and earthworks	Scenario 3 - Civil works and construction
R1*	800 Mid Western Highway, Evans Plains	45	44	**46**	**46**
R2	16 Stewart Street, Evans Plains	45	**48**	**48**	**48**
R3	24 Stewart Street, Evans Plains	45	37	38	38
R7	831 Mid Western Highway, Evans Plains	45	35	37	38
R35	403 Evans Plains Road, Evans Plains	45	30	32	32
R9-R11	McLennan Close, Robin Hill	45	< 10	< 10	< 10
R12-R23	Windemere Road, Robin Hill	45	31	34	35
R24-R33	Hartwood Avenue, Robin Hill	45	24	26	27
	Transgrid Substation	75	65	68	69

Notes
1. At receivers in Mc Lennan Close, Windemere Road and Hartwood Avenue the highest noise level for receivers in the area is presented.
2. *R1 is a host property.

The results above in **Table 15** conclude that there is a minor exceedance of 3 dBA predicted at R2 (16 Stewart Street) across all three scenarios, with the noise levels dominated by truck movement on the internal access road, and a minor exceedance of 1 dBA predicted at R1 (800 Mid Western Highway), also dominated by truck movement on the internal access road. At all other residential receivers noise levels are below 40 dBA, due to the large distances from the internal access road and Project site. Additionally, there is compliance with the NML at the Transgrid substation building.

It is noted that works would only occur during standard daytime construction hours, therefore comparison to other NMLs does not form part of this assessment.

Recommended construction noise mitigation and management measures are discussed in **Section 6.1.4**.

6.1.2.2 Construction Vibration

Minimum working distances for typical vibration intensive construction equipment in regard to both cosmetic damage and human comfort are provided in the Construction Noise and Vibration Guideline (CNVG) and are detailed in Table 14 of the NVIA (SLR Consulting, 2024) contained in **Appendix F**.

Based on the equipment and activities identified for the construction of the Project, potential sources of vibration are limited and would only occur during site preparation, establishment, and earthworks (Scenarios 1 and 2 as identified above in **Section 6.1.2.1**). Given the large distances to the closest sensitive receivers (> 100 m), vibration is unlikely to be perceptible and impacts are unlikely to occur. It is therefore anticipated that vibration generated by the construction works will comply with relevant requirements and not require any specific mitigation and management measures.

6.1.2.3 Construction Traffic

As detailed further in **Section 6.4** below, construction of the Project is expected to generate 20 return light vehicle trips and one return heavy vehicle trip per day, equalling approximately 42 vehicle movements (in and out of the Project site) per day via Mid Western Highway. Existing daily traffic volumes on the Mitchell Highway in the vicinity of the Project from recent traffic counts are 1561 vehicles during the day, and therefore the Project is not anticipated to increase road traffic noise during construction by more than 2 dBA. Differences in noise levels of less than approximately 2 dBA are generally imperceptible.

It is therefore anticipated that traffic noise generated by the construction works will comply with relevant requirements and not require any specific mitigation and management measures.

6.1.3 Operational Impact Assessment

The NPfI sets out the requirements for the assessment and management of operational noise from industry in NSW. The SoundPlan v8.2 computer model developed for construction activities has been used to predict operational noise. Predictions were based on the CONCAWE method. The potential impacts have been determined by comparing the predicted noise levels to the PNTLs in a 15-minute assessment period.

Operational activities associated with the Project have been identified as follows:

- Battery storage containers (112 units);
- MV twin skid compact units comprising two invertors and one low voltage to high voltage transformer (18 units);
- 33 kV to 132 kV transformer (one unit); and
- Control Room Heating, Ventilation, and Air Conditioning (HVAC) (one unit).

6.1.3.1 Operational Noise

Operational noise modelling was undertaken using SoundPlan v8.2 software, with sound power levels of noise producing equipment detailed in Table 16 of the NVIA (SLR Consulting, 2024) contained in **Appendix F**, noting all equipment for the purposes of modelling assumed to be in operation for the entire period, with 15-minute and period noise data identical.

The battery storage containers were modelled as small industrial buildings, with a noise source located on each outward facing side. The twin skid compact units comprising two inverters were each modelled as an industrial building with fan inlet noise sources on each side and one fan exhaust source located on one end, and one medium voltage transformer

modelled as an omni-directional point source. The high voltage transformers and associated cooling fans were modelled as omnidirectional point sources. During daytime operational hours, one light vehicle was modelled on the internal access road.

The battery enclosures and medium voltage power station inverters are also assumed to operate at 100% capacity (i.e. maximum fan speed) 24 hours each day. The transformers and associated fan cooling (where fitted) are assumed to operate at 100% capacity (i.e. maximum fan speed) 24 hours each day.

Operational noise was modelled at the nearest residential receivers as shown in **Table 16** below, with the inclusion of the noise mitigation measures. These predicted levels are compared to the Project noise trigger levels (PNTLs) to determine the potential for noise impacts.

Table 16: Industrial Noise Assessment

Receiver		PNTL LAeq(15minute) (dBA)			Predicted Noise Level[1] LAeq(15minute) (dBA)		Compliance
		Day (D)	Evening (E)	Night (N)	Standard (D/N)	Noise Enhancing (D/N)	
R1	800 Mid Western Highway, Evans Plains	40	35	35	30 / 28	35 / 33	Y
R2	16 Stewart Street, Evans Plains	40	35	35	31 / 16	32 / 21	Y
R3	24 Stewart Street, Evans Plains	40	35	35	21 / 18	26 / 23	Y
R7	831 Mid Western Highway, Evans Plains	40	35	35	21 / 20	26 /26	Y
R35	403 Evans Plains Road, Evans Plains	40	35	35	14/ 13	19 / 18	Y
R9-R11	McLennan Close, Robin Hill	40	35	35	<10	<10	Y
R12-R23	Windemere Road, Robin Hill	40	35	35	17 / 18	22 / 23	Y
R24-R33	Hartwood Avenue, Robin Hill	40	35	35	<10	10 / 11	Y
	Transgrid Substation	75	75	75	46 / 46	50 / 50	Y

Notes 1. The same noise levels are predicted for the evening and night-time period.

The results above in **Table 16** conclude that the highest noise levels during operation of the Project are predicted at 800 Mid Western Highway, Evans Plains during noise enhancing weather conditions (as described in Section 5.3 of the NVIA (SLR Consulting, 2024) contained in **Appendix F**). Noise levels are generally predicted to be approximately 5 dBA higher during noise enhancing conditions, however the predicted noise from the Project remains compliant with the PNTLs at all receivers during all periods and weather conditions during operation. Predicted $L_{Aeq,\ 15\ minute}$ noise levels are also compliant with the sleep disturbance screening level of 40 dBA.

Based on the results and findings, recommended safeguards and provisions for monitoring are provided below in **Section 6.1.4** which are designed to assist in maintaining compliance and minimise any residual impacts as far is commonly feasible, reasonable, and safe to do so.

6.1.3.2 Operational Traffic

Operational road traffic noise impacts from the Project are not anticipated (i.e. from additional vehicles on the public road network). The BESS facility will be on automatic control, and any periodic maintenance would be undertaken by staff on an as needed basis, and therefore additional traffic from the Project is expected to be of no significance.

For arterial and sub-arterial roads (e.g. Mid Western Highway), the Project will not generate a significant increase in vehicles when compared to that of the existing vehicle flows and mixes on the surrounding road network, and therefore the introduction of operational traffic required for the Project is unlikely to be perceptible.

6.1.4 Mitigation and Management Measures

6.1.4.1 Construction

Noise impacts may be apparent at the nearest receivers at certain times during construction of the Project and therefore all feasible and reasonable mitigation measures to minimise the impacts, particularly during noise intensive works, such as site preparation and earth works, are recommended to be implemented during the construction of the Project.

As the SEARs issued for the Project note that a draft noise management plan should be provided if the NVIA shows that construction noise is likely to exceed applicable criteria, a draft Noise and Vibration Management Plan (NVMP) has been prepared and is located within the NVIA in **Appendix G.**

The following measures summarised below in **Table 17** will be implemented to minimise the potential impacts from the works as per the draft NVMP.

Table 17: Standard Construction Recommended Mitigation and Management Measures

Measure
Project Planning
Less noise and vibration intensive construction techniques for rock breaking and concrete sawing will be used.
Works will be completed during standard daytime construction hours detailed in **Section 3.2.3**.
Truck routes to site will be in accordance with the approved Construction Traffic Management Plan (CTMP).
Scheduling
High-noise or vibration generating works will be carried out in continuous blocks no longer than three hours in length, with a minimum respite period of one hour between each block. 'Continuous' includes any period during which there is less than a one hour respite between ceasing and recommencing these works.
High-noise or vibration generating works conducted outside standard construction hours (where approved) will be limited to no more than two consecutive nights except where there is a Duration Respite (see below). For night-works these periods will be separated by no less than one week, and limited to six nights per month. Where possible, high-noise and vibration generating works will be completed before 11 pm.
Notification detailing work activities, dates and hours, impacts and mitigation measures, indication of work schedule over the night time period, any operational noise benefits from the works (where applicable) and contact telephone numbers will be undertaken in accordance with the CCS.
Site Layout
Where practicable, work compounds, parking areas, and equipment and material stockpiles will be positioned away from noise-sensitive locations and take advantage of existing screening from local topography.
Equipment that is noisy will be started away from sensitive receivers
Training

Measure
Training will be provided to all personnel on noise and vibration requirements for the project. Inductions and toolbox talks to be used to inform personnel of the location and sensitivity of surrounding receivers.
Plant and Equipment Source Mitigation
All construction plant and equipment used on Site must be, in addition to other requirements: a) regularly inspected and maintained in an efficient condition; b) operated in a proper and efficient manner.
Where practicable, tonal reversing alarms (beepers) will be replaced with non-tonal alarms (squawkers) on all equipment in use (subject to occupational health and safety requirements).
Noisy equipment will be sited behind structures that act as barriers, or at the greatest distance from the noise-sensitive area; or orienting the equipment so that noise emissions are directed away from any sensitive areas, to achieve the maximum attenuation of noise.
Noise generating equipment will be regularly checked and effectively maintained, including checking of hatches/enclosures regularly to ensure that seals are in good condition and doors close properly against seals.
Dropping materials from a height will be avoided.
Loading and unloading will be carried out away from noise sensitive areas, where practicable.
Trucks will not queue outside residential properties. Truck drivers will avoid compression braking as far as practicable.
Truck movements will be kept to a minimum, ie trucks are fully loaded on each trip.
Community Consultation
Notifications will be provided to the affected community where high impacts are anticipated or where out of hours works are required. Notification will be a minimum of 24 hours.
Where complaints are received, work practices will be reviewed and feasible and reasonable practices implemented to minimise any further impacts.
Monitoring
Noise and/or vibration monitoring will be conducted (as appropriate) in response to any complaints received to verify that levels are not substantially above the predicted levels.
Vibration
Vibratory compactors will not be used closer than 30 m from residential and educational buildings unless vibration monitoring confirms compliance with the vibration criteria.
Where there is a risk that vibration activities may cause damage to nearby structures and buildings or if these are located within the minimum working distance from the construction activity, a building condition inspection will be undertaken at least three weeks before the construction activity commences.
The Building Condition Inspection Reports will contain photographs of the inspected properties and include details of the inspectors' qualification and expertise, together with a list of any identified defects, where relevant. The reports will be submitted to the owner before the commencement of any vibration intensive activities.
A copy of the Building Condition Inspection Reports and CNVMP will be submitted to the Proponent at least 10 working days prior to commencement of piling, excavation by hammering or ripping, compaction, demolition operations, or any activity which may cause damage through vibration.

6.1.4.2 Operation

The BESS is deemed compliant with the NPfI for the daytime, evening, and night-time periods, and as such, no further recommendations for noise reducing mitigation or management measures during operation are recommended by the NVIA (SLR Consulting, 2024). Suitable safeguards and provisions for monitoring have been recommended below, to assist operational noise levels being maintained below the applicable PNTL.

Based on the scope of the Project, the following safeguards and provisions will be implemented:

- During detailed design/equipment procurement, BESS noise emission sources will be designed to achieve quantities and sound power levels equal to or lower than presented in the NVIA (SLR Consulting, 2024). If overall BESS noise emissions are expected to be higher, additional assessment will be considered; and
- Where new and improved BESS technology becomes available during the life of the Project, replacement of BESS equipment should aim to achieve sound power levels equal to or lower than presented in this report. If overall BESS noise emissions are expected to be higher, additional assessment will be considered.

6.1.5 Conclusion

The NVIA (SLR Consulting, 2024) prepared for the Project concluded that the predicted $L_{Aeq,\ 15\ minute}$ noise levels modelled for the construction of the Project have the potential to exceed the NMLs at certain times when the noisiest works are occurring. The worst-case impacts are, however, only likely to occur for relatively short times of the total Project duration and the works would be limited to standard daytime construction hours, with no evening or night-time works required.

Operational noise assessment identified that all predicted $L_{Aeq,\ 15\ minute}$ noise levels for operational activities for the Project are below the PNTLs at all identified sensitive receivers. Cumulative noise emissions from the BESS (including the substation) and the adjacent Transgrid substation were also considered, and cumulative $L_{Aeq,\ 15\ minute}$ noise levels during noise enhancing weather conditions (i.e. worst-case) are still expected to remain below the most stringent night time criteria of 35 dBA.

A number of best-practice mitigation and management measures will be applied for both the construction and operational phases of the Project where feasible and reasonable, to control and minimise the impacts during construction as far as practicable.

6.2 Biodiversity

This section presents the findings of a Biodiversity Development Assessment Report Waiver Report (SLR Consulting, 2023) (BDAR Waiver Report) prepared in response to the SEARs. The BDAR Waiver Report includes a detailed analysis of the existing environment and proposed construction and outlines the methodology and criteria utilised to form an assessment of the Project.

Following the submission of the BDAR Waiver Report, a BDAR Waiver was issued by the DPE (now DPHI), under clause 7.9(2) of the BC Act on 11 April 2023.

The BDAR Waiver and the associated determination is located in **Appendix G**.

6.2.1 Existing Environment

The Project site is not mapped by the Biodiversity Values Map and Threshold Tool as containing biodiversity values, and regional scale mapping indicates that there is no native vegetation within the Project site.

A licensed search of the BioNet Wildlife Atlas database for records of threatened species within 10 km of the Project site centre was completed on 24 October 2022 and returned 91 records consisting of 23 species. It was subsequently determined that most of the threatened species recorded are not likely to occur on the Project site due to geographic limitations, lack of suitable habitat, and the disturbed and modified nature and condition of the Project site. The majority of the threatened fauna species records are to the east of the

Project site towards Bathurst township, and these records represent mobile species with the ability to travel long distances.

The lack of tree canopy and native vegetation within the Project site provides limited habitat potential for threatened species and communities. Mobile species recorded nearby that may be of relevance to the Project site include the Dusky Woodswallow, Little Eagle, Varied Sittella, Grey-headed Flying-fox, Yellow-bellied Sheathtail-bat, and Large Bent-winged Bat. The low laying culverts across the broader site could be considered potential habitat for threatened microchiropteran bats ('microbats').

6.2.2 Construction Impact Assessment

A site inspection was undertaken by a qualified ecologist on 26 October 2022 to assess the site for biodiversity values. The majority of the Project site has been historically cleared for grazing and pasture and shows signs of a long history of disturbance, with vegetation in the Project site largely consisting of grassland composed of exotic pasture species with isolated stands of native eucalypt trees, occurring near the existing access to the broader site and as a small stand of paddock trees in the central-eastern parts of the broader site.

Plant Community Type (PCT) mapping was completed to identify vegetation across the broader Project site and surrounds as shown in **Figure 10** and **Figure 11** below.

The small copse of paddock trees in the central parts of the broader site is located east of the proposed BESS compound location and comprises a narrow band of trees growing amongst exotic pasture grass and has been classified as a degraded form of PCT 3366 - *Central Tableland Clay Apple Box Grassy Forest* (refer to **Figure 11**). The patch of PCT 3366 consists of five mature Yellow Box *Eucalyptus melliodora* trees surrounded by widespread exotic pasture with no native shrub layer or groundcover species. PCT 3366 is associated with the Threatened Ecological Community (TEC) *Tableland Basalt Forest in the Sydney Basin and South Eastern Highlands Bioregion*.

A small stand of trees also occurs near the existing site access from the Mid Western Highway and has been identified as a low condition form of PCT 4063 *Central and Southern Tableland River Oak Forest* (refer to **Figure 11**). Similarly, the patch of trees contains a native canopy layer, with no native species present in the shrub layer or groundcover. Although the canopy overlaps the existing site entrance, the proposed widening works to accommodate heavy vehicles during the construction period will not require the removal of any trees. PCT 4063 is not associated with any TECs.

An area of planted trees was identified within Lot 521 DP 603541 (TransGrid substation). The trees consist mainly of exotic pines (*Pinus* spp.) and some planted native Mugga Ironbark *Eucalyptus sideroxylon* and Blakely's Red Gum *E. blakelyi* with mown lawn.

No habitats or resources for threatened species are present within the Project site. The vegetation identified on the Project site is unlikely to provide important habitat connectivity or flight paths for any threatened species potentially using the site. No hollow-bearing trees or other resources of potential importance to native fauna are present on the Project site. Potential microbat habitat was detected in the culverts located in southern portion of the broader site (adjacent to the Mid Western Highway access). The culverts contained swallow mud nests identified during the site inspection; however there was no evidence of microbat usage and it is considered unlikely that the culverts represent suitable breeding habitat for any threatened species. As there is no proposed removal of the culverts or changes to the drainage lines, impacts on threated species associated with the demolition of human-made structures or habitat associated with water bodies are likely to be negligible.

Due to the slow speeds of vehicles travelling across the site during the construction period, impacts of vehicle strikes on threatened species of animal are considered negligible and equivalent to existing vehicle traffic conditions.

6.2.3 Operational Impact Assessment

No impacts on biodiversity values are anticipated during the operation phase of the Project.

6.2.4 Mitigation and Management Measures

The Project has been designed and sited to avoid the removal of any native vegetation on the broader site, with vegetation within the Project site containing only exotic pasture species. The current proposed layout and location of the Project has been amended through an iterative design process to avoid impacts to biodiversity values. In this regard, the original concept layout included placement of the proposed battery storage facility partly within an existing patch of native vegetation (identified as PCT 3366). The proposed location of the BESS compound was hence moved west to avoid the patch of PCT 3366, thereby avoiding any direct impacts on native vegetation (and on biodiversity values in general).

The same process was followed to realign the trenched 132 kV underground cable to avoid damage to the root systems of planted trees within Lot 521 DP 603541 (TransGrid substation).

The following mitigation and management measures are to be implemented during the construction phase:

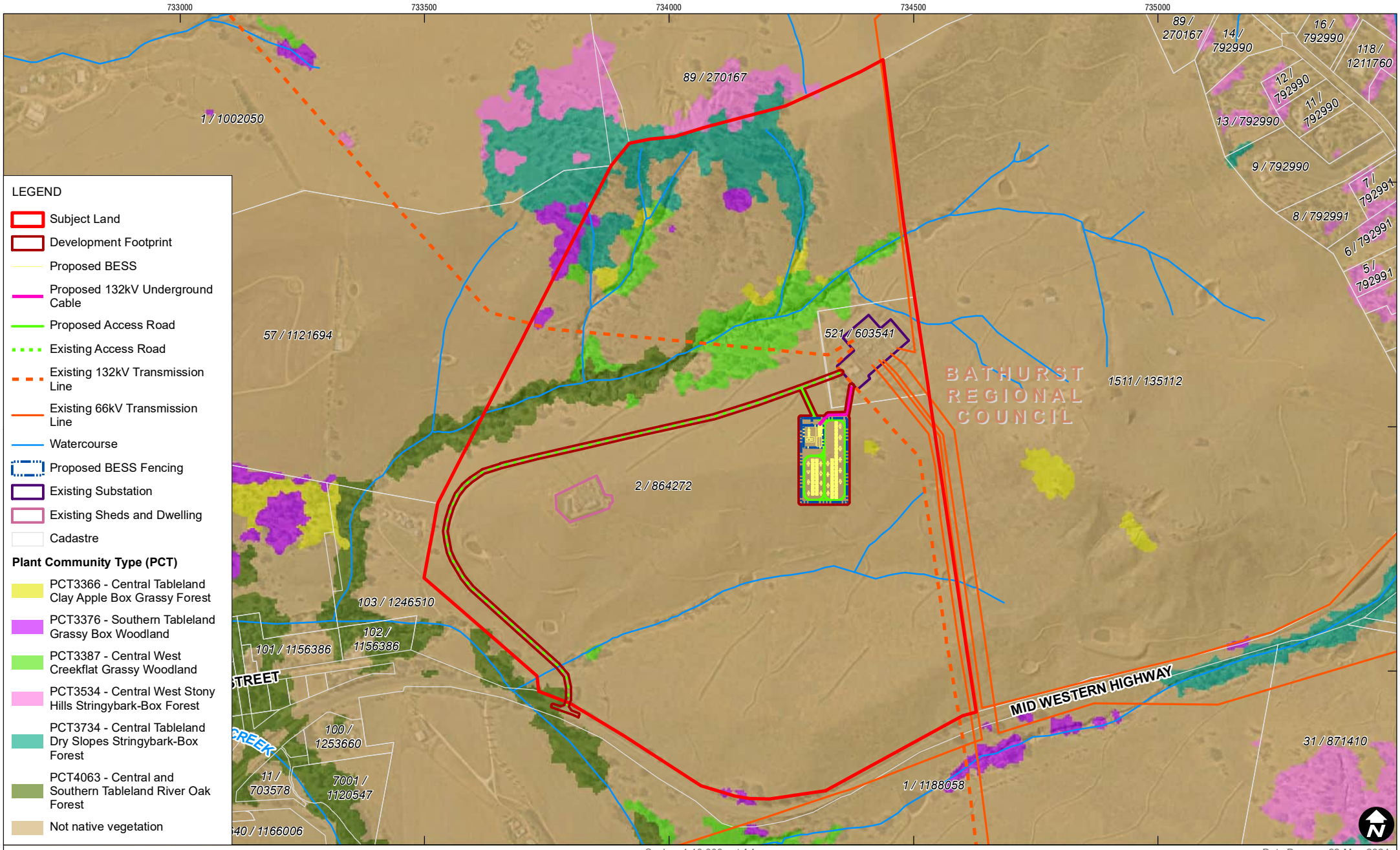
- To facilitate the transportation of the transformer to the site, some minor pruning of a tree at the driveway entrance may be required, in consultation with a qualified arborist;
- Tree protection - existing paddock trees and trees adjacent to the site entrance will be subject to standard tree protection measures for construction sites, consistent with AS 4970; and
- Erosion and sedimentation control – standard measures should be installed during construction, consistent with the Blue Book (Landcom, 2004).

No impacts on biodiversity values are anticipated during the operation phase of the development and accordingly, no mitigation measures are necessary or proposed for the operational phase.

6.2.5 Conclusion

The BDAR Waiver (SLR Consulting, 2023) prepared for the Project concluded that the Project site contains very limited or negligible biodiversity values, with the only notable feature of biodiversity value being a small patch of native trees, which through the application of avoidance measures during the design and siting of the BESS compound, will be retained *in situ*. The Project will require disturbance to areas of exotic pasture grass, which provide only negligible to marginal foraging habitat for some highly mobile threatened fauna species and the removal of this vegetation is not likely to result in a significant impact on any threatened species. The Project site does not contain any vegetated links or fauna movement corridors and the proposed development will not affect movement of threatened or migratory species through the landscape.

Consequently, the Project is unlikely to have a significant impact on the limited biodiversity values of the site. As noted, due to this context, a request to waive the requirements of the SEARs and the BC Act, to the extent that a BDAR is not required for the Project SSD application, was made to DPHI on 22 March 2023 and the waiver was issued 21 April 2023.



Scale: 1:10,000 at A4
Coordinate System: GDA 1994 MGA Zone 55

Date Drawn: 22-May-2024
Project Number: 660.30234.00000

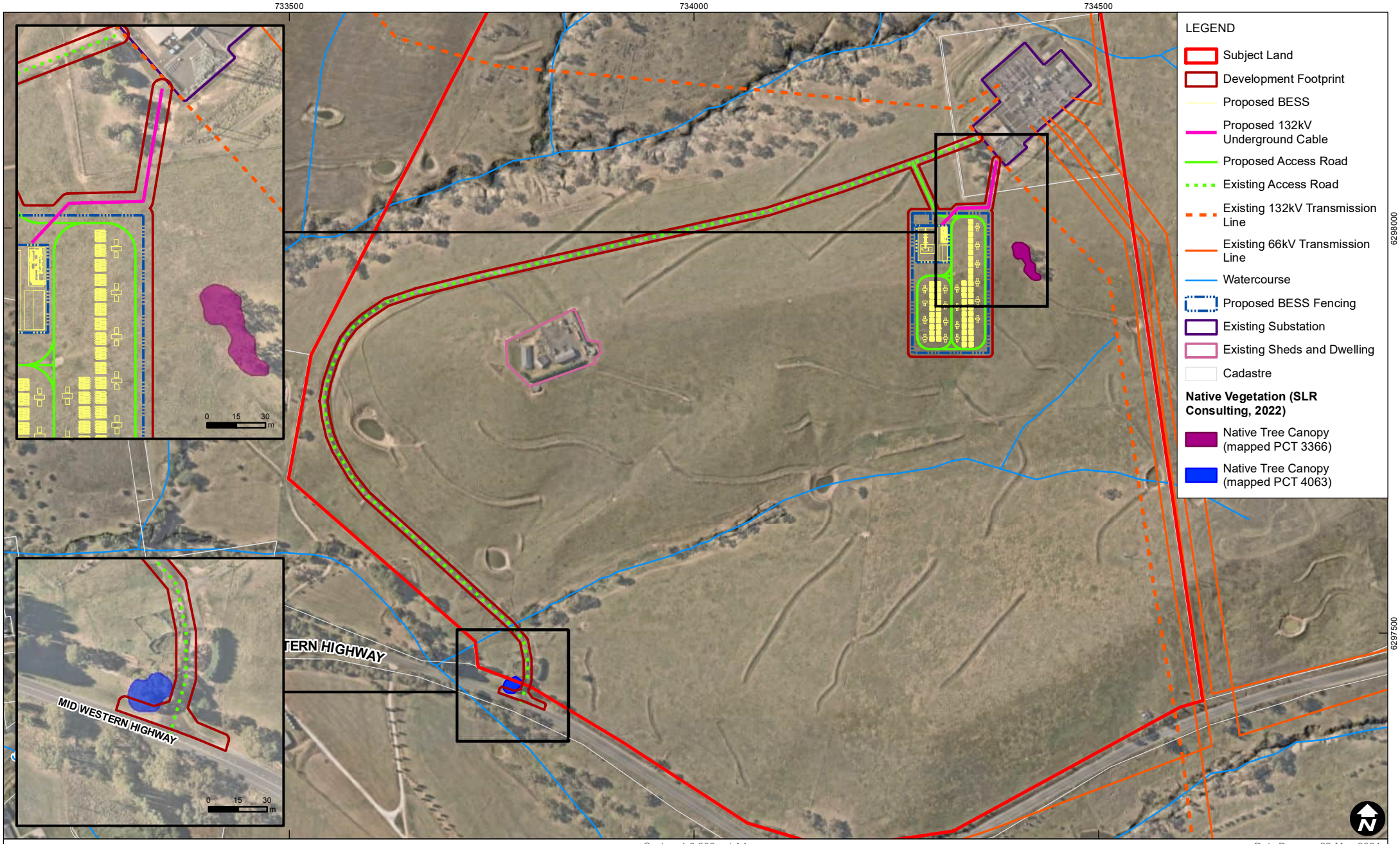
SLR

Data Source: Basedata NSW SS, December 2021
Aerial imagery supplied by Nearmap (March, 2024)
State Vegetation Type Map (SVTM) © State Government of NSW and Department of Planning and Environment 2022

REGIONAL MAPPED PCTs WITHIN THE BROADER PROJECT SITE AND SURROUNDS

FIGURE 10

H:\Projects-SLR\660-SrvWOL\660-WOL\660.30234.00000 Bathurst BESS SSD Approvals\06 SLR Data\01 CADGIS\GIS\SLR66030234_EIS_G8_PCTMapping_002.mxd



Scale: 1:6,000 at A4
Coordinate System: GDA 1994 MGA Zone 55

Date Drawn: 22-May-2024
Project Number: 660.30234.00000

Data Source: Basedata NSW SS, December 2021
Aerial imagery supplied by Nearmap (March, 2024)

SLR

NATIVE VEGETATION WITHIN THE BROADER PROJECT SITE

FIGURE 11

H:\Projects-SLR\660-SrvWOL\660-WOL\660.30234.00000 Bathurst BESS SSD Approvals\06 SLR Data\01 CADGIS\GIS\SLR66030234_EIS_G9_NativeVegDevSite_002.mxd

6.3 Aboriginal Heritage

This section presents the findings of an Aboriginal Cultural Heritage Assessment report (ACHAR) (Austral Archaeology, 2023) prepared in response to the SEARs. The ACHAR includes a detailed analysis of the existing environment and proposed construction impacts and outlines the methodology and criteria utilised to form an assessment of the Project.

The ACHAR is located in **Appendix H**.

6.3.1 Existing Environment

A search of the Heritage NSW AHIMS database was undertaken on 12 September 2022 which identified 94 previously recorded sites within a 7.5 km search buffer of the broader Project site boundary. The search results indicated that isolated artefacts were the predominant type of artefact with over 34% of known sites containing this feature. Artefacts and open camp sites were the next most common type found in the Bathurst region at over 18%. Most sites identified within the AHIMS search around the broader Project site boundary occurred on elevated flat areas such as ridges, crests, and hillocks or along creek lines.

No registered AHIMS sites were identified within the broader Project site boundary. The nearest AHIMS sites recorded to the broader Project site boundary are summarised below in **Table 18** and shown in **Figure 12**. Figure 4.1 of the ACHAR (Austral Archaeology, 2023) located in **Appendix H** shows all AHIMS sites recorded within a 7.5 km search buffer of the broader Project site boundary (being Lot 2 DP 864272).

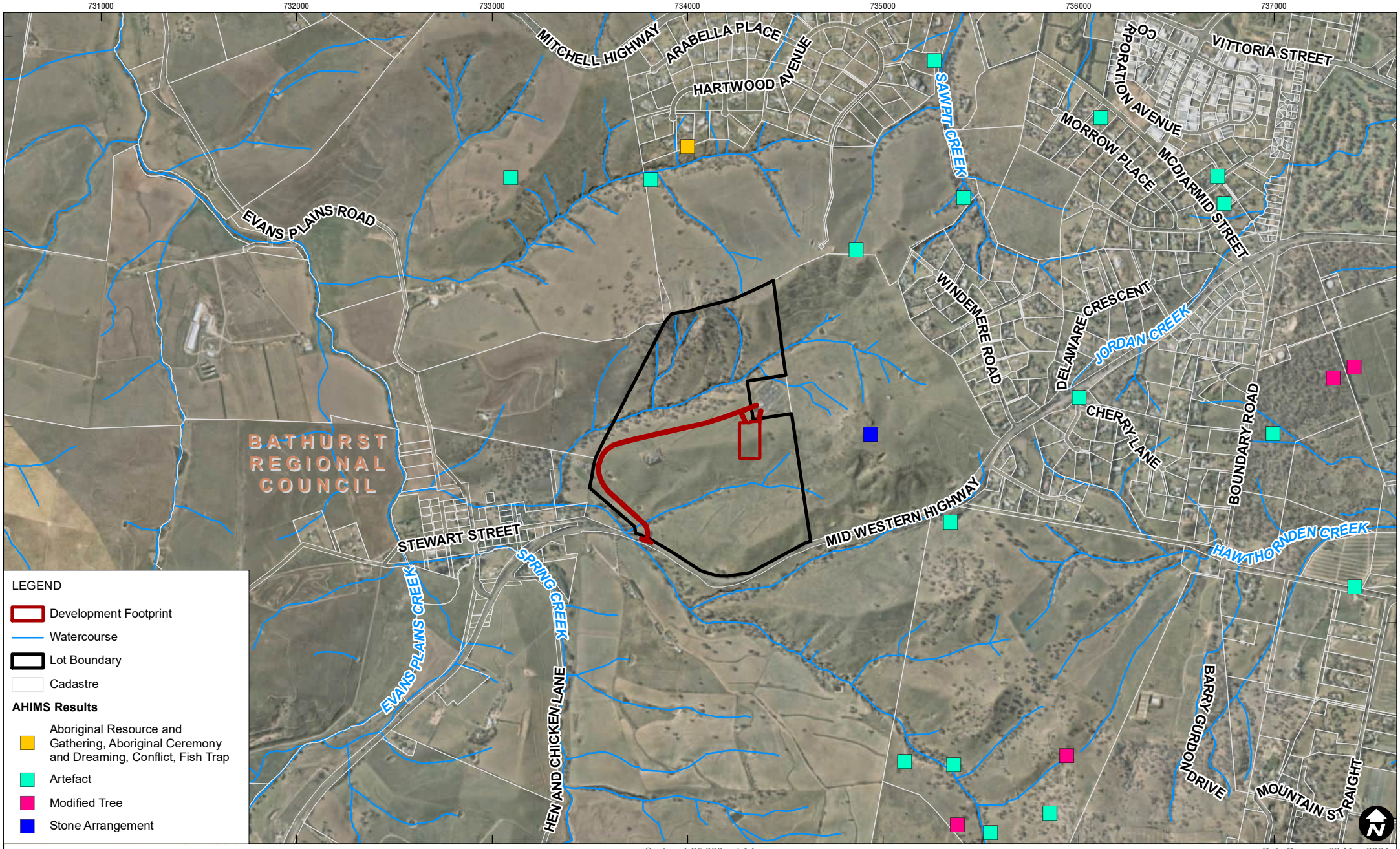
Table 18: Summary of AHIMS Sites Recorded within 500 metres of Broader Site Boundary

Name	AHIMS No.	Type	Location Landform	Cadastral Boundary
Mount Aspley	44-3-0043	Stone Arrangement	Hillock	Eastern boundary of Lot 2 DP 864272
MPW-GS1	44-3-0238	Open Site	Slope	South-eastern boundary of Lot 2 DP 864272
GH3	44-3-0103	Open Camp Site	Ridge	North-eastern boundary of Lot 2 DP 864272
SP-4	44-3-0093	Isolated Artefact	Ridge	Eastern boundary of Lot 2 DP 864272

The Project site exists within an open grazing field that appears to have undergone little disturbance to the natural landforms and as a result, the ridgeline within the centre of the study area was assessed as being high archaeological potential, and the associated slopes were assessed as having moderate to low archaeological potential, for the purposes of the site survey, as detailed below in **Section 6.3.1.1**.

6.3.1.1 Survey Methodology and Test Excavations

A site survey was conducted on 20 December 2022 by a qualified archaeologist with assistance from a representative from the Bathurst Local Aboriginal Land Council (BLALC) to identify and record Aboriginal archaeological sites visible on the ground surface and areas of potential archaeological deposits (PADs). During this survey, no surface Aboriginal cultural heritage objects were identified, however it was decided that test excavations were necessary to confirm the presence of Aboriginal material within the Project site given the presence of high, moderate, and low archaeological potential across the Project site. Figure 7.6 of the ACHAR (Austral Archaeology, 2023) located in **Appendix H** shows the survey tracks and archaeological potential mapping resulting from the site survey.



Scale: 1:25,000 at A4
Coordinate System: GDA 1994 MGA Zone 55

Date Drawn: 22-May-2024
Project Number: 660.30234.00000

Data Source: Basedata NSW SS, December 2021
Aerial imagery supplied by Nearmap (March, 2024)
Elevation data supplied by DCS Spatial Services (July, 2019)
Archaeological information supplied by Austral Archaeology

SLR

AHIMS SITES WITHIN CLOSE PROXIMITY TO THE PROJECT SITE BOUNDARY

FIGURE 12

H:\Projects-SLR\660-SrvWOL\660-WOL\660.30234.00000 Bathurst BESS SSD Approvals\06 SLR Data\01 CADGIS\GIS\SLR66030234_EIS_G11_AHIMSResults_002.mxd

A test excavation program was completed between 13 March 2023 and 17 March 2023, where all areas of archaeological potential were tested. The study area was split into three (3) 'Testing Areas' with six transects placed in areas associated with the proposed development footprint, with detailed descriptions of the Testing Areas given in Table 6.1 and the locations of the test pits shown in Figure 6.1 of the ACHAR (Austral Archaeology, 2023) located in **Appendix H.**

In summary, 51 test pits were proposed within the broader Project site across the Testing Areas, with 21 test pits in Testing Area 1, 20 test pits in Testing Area 2, and 10 test pits in Testing Area 3. However, based upon further assessment of the site, the original proposed test pit locations were readjusted to target areas more likely to have Aboriginal archaeological material present.

Following re-assessment of the number of test pits required, the following excavations were completed over the 5-day test excavation program:

- Testing Area 1 - consisted of 12 test pits distributed 10 and 20 m apart on three (3) transects labelled Transects A, C and E. Testing Area 1 was located on a gentle to mid-sloped landform on the northern side of the Project site;
- Testing Area 2 - consisted of 23 test pits and 1 m by 1 m expansion pit distributed 10 m apart along two (2) transects labelled Transects B and B1. Testing Area 2 was located on a crest landform situated in the centre of the study area; and
- Testing Area 3 - consisted of 10 test pits distributed 10 m apart along one transect labelled Transect D running east to west.

The excavation results revealed that Testing Area 3 represented low archaeological potential due to the lack of heritage identified in the associated transect (Transect D); and Testing Area 2 was originally assessed to be of high potential however, both transects tested in this area (Transects B and B1) revealed only one artefact. Based on the results of those testing areas, the number of test pits within Testing Area 1 (Transects A, C, and E) were reduced by 9 pits. Transect C, located at the bottom of the slope of Testing Area 1 revealed 3 artefacts within two (2) test pits, and Transect E located in the mid-slope, revealed one (1) artefact.

The test excavations revealed a total of five (5) artefacts across three (3) transects within the Project site. Between these 5 artefacts, 3 raw material types and 2 tool types were identified which varied in size and purpose and demonstrate evidence of a possible occupation site within the study area. Most artefacts were located within Transect C, which is located at the bottom of the northern slope within the Project site. The higher volume of artefacts in Transect C was determined to be most likely due to drainage and erosion, which have caused artefacts to move down the slope over time.

Based on the results from the test excavations as described above, the ridgeline and the area encompassing Transect C were reassessed as having moderate archaeological potential, and the remainder of the study area was reassessed as having low archaeological potential. Revised archaeological potential mapping is provided below in **Figure 13** and impacts to Aboriginal sites are provided in **Figure 14.**

The Aboriginal sites identified during the test excavation program and their significance are described in the table below in **Table 19**.

Table 19: Identified Aboriginal Sites

Site / AHIMS	Aboriginal Cultural Heritage Values
Evans Plains AS1 / 44-3-0282	Evans Plains AS1 (44-3-0282) is a low-density artefact scatter located on the mid- to low slope of Testing Area 1. The site is comprised of four artefacts, being one grindstone, one multi-platform core, one complete flake and one grinding top stone. As the site is located at the bottom of a slope adjacent to a drainage depression, it is probable that the site is not in situ. It is likely that these artefacts were once used on top of the ridge within the study area and have migrated down the slope over time. However, based on the varying artefact types within Evans Plains AS1 (AHIMS# 44-3-0282), the site has been assessed to have research and, social or spiritual significance.
Evans Plains IF1 / 44-3-0283	Evans Plains IF1 (AHIMS# 44-3-0283) is an isolated artefact find located upon the ridgeline within Testing Area 2. The site is comprised of one crystal quartz retouched blade. The location of Evans Plains IF1 within the ridgeline suggests that blade manufacturing may have been undertaken within this area; however, remnant evidence most likely has been displaced due to weathering. Due to the rarity of Evans Plains IF1 (AHIMS 44-3-0283), the site is assessed of having high research, social and spiritual significance.

6.3.1.2 Aboriginal Community Consultation

Consultation with Aboriginal stakeholders has been completed by Austral Archaeology in accordance with the Consultation Requirements (DECCW, 2010) as summarised below in **Table 20** below.

Table 20: Aboriginal Community Consultation

Stage	Component		
Stage 1	Letters to agencies	15/08/2022	N/A
	Registration of stakeholders	22/08/2022	5/09/2022
Stage 2	Project information	12/10/2022	N/A
Stage 3	Review of project methodology	12/10/2022	9/11/2022
Stage 4	Review of ACHAR by Aboriginal stakeholders	26/06/2023	24/07/2023

6.3.2 Construction Impact Assessment

The Project will involve ground-breaking works to install a 132 kV underground cable connecting a 33kV/132 kV switch building to the substation, stormwater management infrastructure, lighting, and security fencing, as well as the upgrade of existing road access to accommodate heavy vehicles.

The Project will directly impact both identified Aboriginal sites within the study area as detailed above in **Table 19.** Evans Plains AS1 (AHIMS #44-3-0282) will be directly impacted by the construction of the proposed internal access road to the BESS and the BESS itself, and Evans Plains IF1 (AHIMS #44-3-0283) will be directly impacted by the construction of the BESS, as shown in **Figure 14** below. Both Aboriginal sites will experience a direct and total loss of value as a result of the construction of the Project.

The ACHAR notes that Heritage NSW specifies the importance of considering cultural landscapes when determining and assessing Aboriginal cultural values. The principle behind this is that *'For Aboriginal people, the significance of individual features is derived from their inter-relatedness within the cultural landscape. This means features cannot be assessed in isolation and any assessment must consider the feature and its associations in a holistic manner*" (DECCW 2010c).

The study area is situated within areas of low and moderate archaeological potential. While the aesthetic and historic significance of the site is considered low, the archaeological significance of the study area is moderate. However, the southern side of the study area revealed no artefactual deposits, likely due to its location on a moderate slope, and is believed to contain no archaeological material.

During the development of the ACHAR and the completion of the archaeological test excavation program, Austral Archaeology has been able to confirm that the presence of tangible Aboriginal heritage within the study area is low, and no information regarding intangible heritage within the study area was identified, however, this will be confirmed by the registered stakeholders as part of the Stage 4 consultation described in **Table 20.**

The construction of the Project has been determined to have low cumulative impact on Aboriginal cultural material due to low artefact densities identified within the Project site. To further minimise harm on known and unknown sites within the Project site, a number of recommendations have been made below in **Section 6.3.4**.

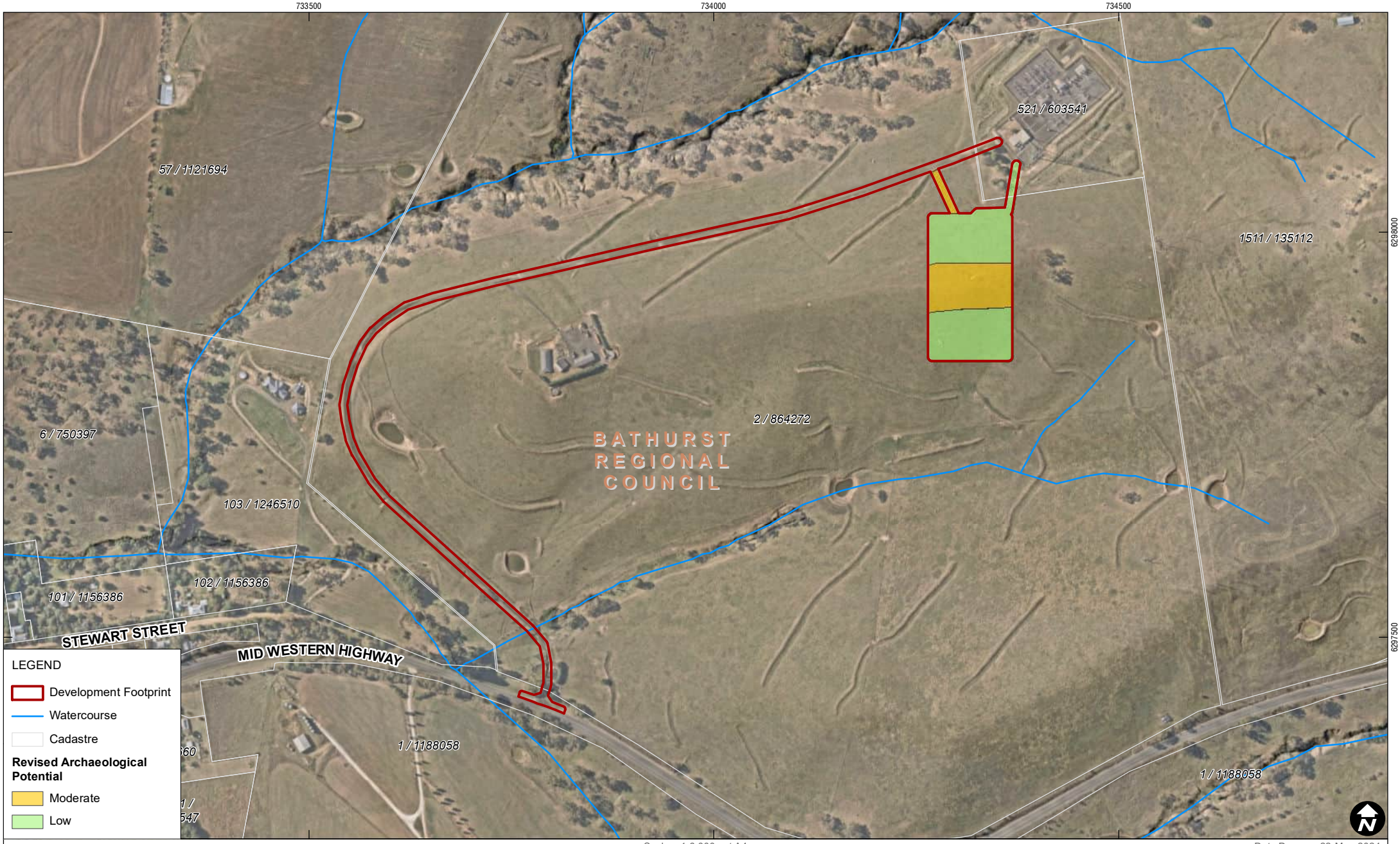
6.3.3 Operational Impact Assessment

No impacts on Aboriginal cultural values are anticipated during the operation phase of the Project.

6.3.4 Mitigation and Management Measures

The following recommendations have been developed after considering the archaeological context, environmental information, consultation with the local Aboriginal community, and the findings of the test excavation program and will be implemented during the construction and operation of the Project:

- In the event that unexpected finds occur during any activity within the study area, all works must in the vicinity must cease immediately. The find must be left in place and protected from any further harm. Depending on the nature of the find, the following processes must be followed:
    - If, while undertaking the activity, an Aboriginal object is identified, it is a legal requirement under Section 89A of the NPW Act to notify Heritage NSW as soon as possible; and/or
    - If human skeletal remains are encountered, all work must cease immediately, NSW Police must be contacted, and they will then notify the Coroner's Office. Following this, if the remains are believed to be of Aboriginal origin, Aboriginal stakeholders and Heritage NSW must be notified;
- Evans Plains AS1 (AHIMS #44-3-0282) and Evans Plains IF1 (AHIMS #44-3-0283) should be reburied in proximity to their original locations (outside of the construction impact) in consultation with Aboriginal stakeholders. The new site location should be added to site plans and registered as a new site on AHIMS. During construction this site should be demarcated for the duration of the works and listed as a no-go-zone;
- It is recommended that the Proponent continues to inform Aboriginal stakeholders about management of Aboriginal cultural heritage within the study area throughout the duration of the Project. The consultation outlined as part of the ACHAR (Austral Archaeology, 2023) is valid for 6 months and must be maintained by the Proponent for it to remain continuous, this can be done through a project update sent to Registered Aboriginal Parties. If a gap of more than 6 months occurs, then the consultation process will need to be re-started; and
- A copy of the ACHAR (Austral Archaeology, 2023) should be forwarded to all Aboriginal stakeholder groups who have registered an interest in the Project.



Scale: 1:6,000 at A4
Coordinate System: GDA 1994 MGA Zone 55

Date Drawn: 22-May-2024
Project Number: 660.30234.00000

Data Source: Basedata NSW SS, December 2021
Aerial imagery supplied by Nearmap (March, 2024)
Archaeological information supplied by Austral Archaeology

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REVISED ARCHAEOLOGICAL SENSITIVITY MAPPING

FIGURE 13

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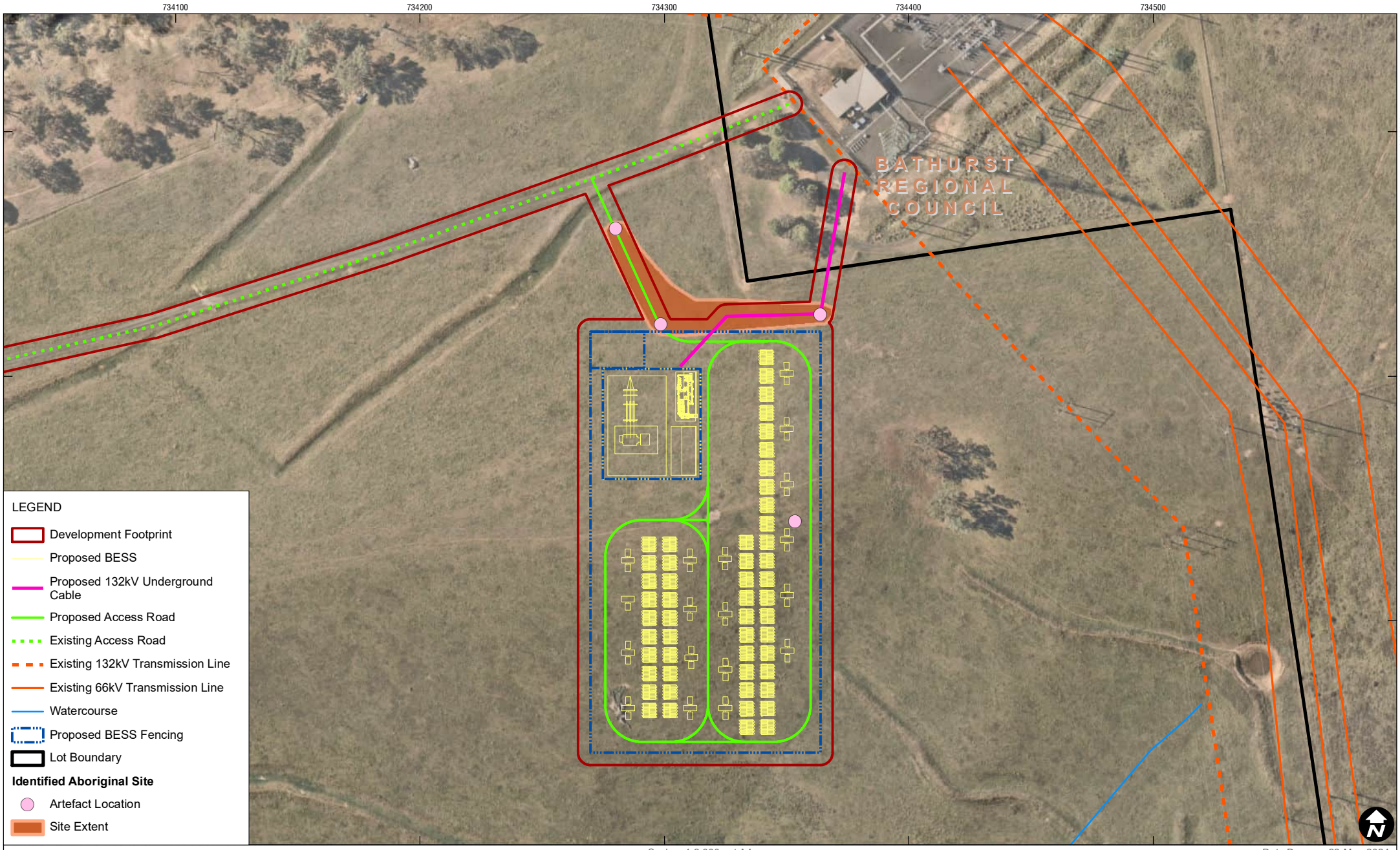

Scale: 1:2,000 at A4
Coordinate System: GDA 1994 MGA Zone 55

Date Drawn: 22-May-2024
Project Number: 660.30234.00000

Data Source: Basedata NSW SS, December 2021
Aerial imagery supplied by Nearmap (March, 2024)
Archaeological information supplied by Austral Archaeology

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IMPACTS OF THE PROJECT ON THE IDENTIFIED ABORIGINAL SITE

FIGURE 14

H:\Projects-SLR\660-SrvWOL\660-WOL\660.30234.00000 Bathurst BESS SSD Approvals\06 SLR Data\01 CADGIS\GIS\SLR66030234_EIS_G13_ArchIdentifiedSites_002.mxd

6.3.5 Conclusion

The ACHAR (Austral Archaeology, 2023) prepared for the Project concluded that there would be a direct impact and total loss of value to two identified Aboriginal sites identified during a test excavation program completed between 13 March 2023 and 17 March 2023, identified as Evans Plains AS1 (AHIMS #44-3-0282) and Evans Plains IF1 (AHIMS #44-3-0283), containing a total of five (5) artefacts. It is proposed that these are reburied in proximity to their original locations (outside of the construction impact) in consultation with Aboriginal stakeholders and protected for the duration of works associated with the construction and operation of the Project.

6.4 Traffic and Access

This section presents the findings of a Traffic Impact Assessment (SLR Consulting, 2043) (TIA) prepared in response to the SEARs. The TIA includes a detailed analysis of the existing environment and proposed operations and outlines the methodology and criteria utilised to form an assessment of the Project. The TIA is located at **Appendix I.**

6.4.1 Existing Environment

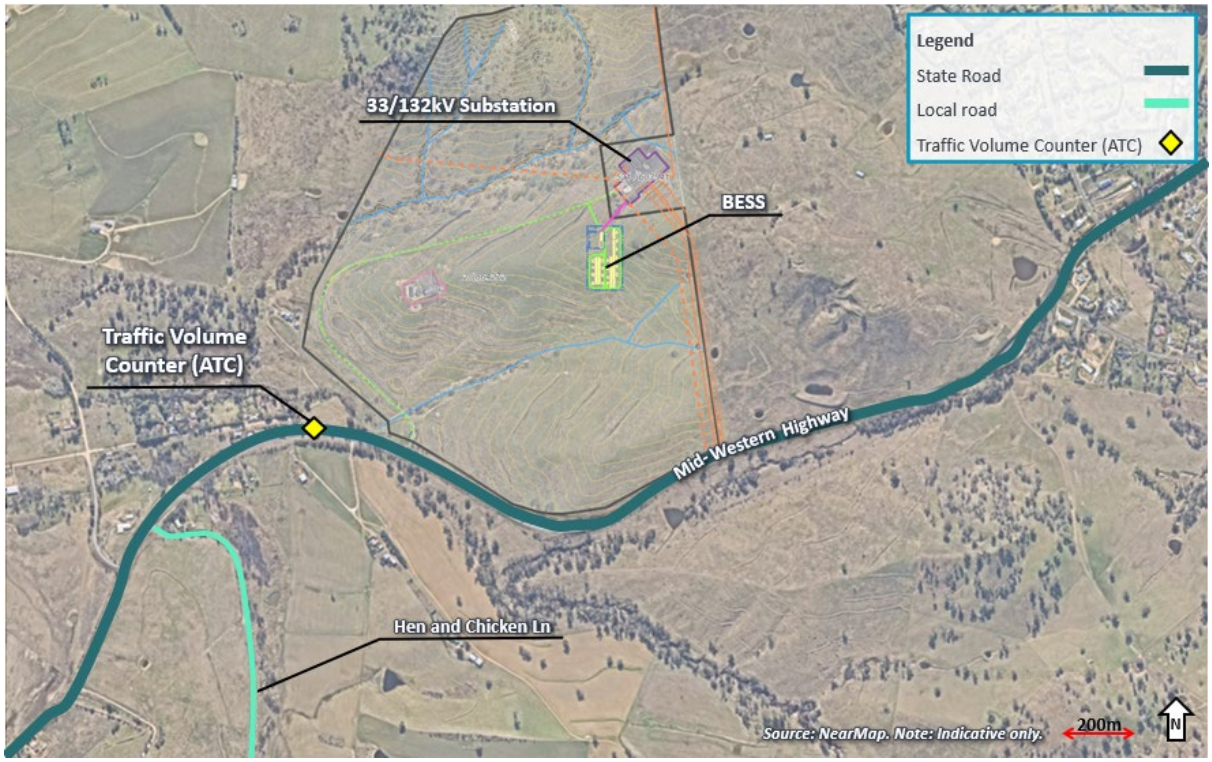
6.4.1.1 Road Network

Due to the rural nature of the Project site, the primary road utilised for access will be the Mid Western Highway which has a posted speed limit of 100 kilometres per hour (km/h). Average traffic counts for Mid Western Highway are provided in Table 4 of the TIA (SLR Consulting, 2024). The proposed heavy vehicle route will also include Mitchell Highway which has a posted speed limit of 100 km/h (State Road managed by Council) and Evans Plains Road (Local Road managed by Council) which has an unposted speed limit (default 50 km/h).

6.4.1.2 Traffic Surveys

To ascertain the existing traffic demands of the road network surrounding the site, automated tube count (ATC) surveys were completed between Monday 10 October 2022 and Monday 17 October 2022, with one tube installed approximately 80m west of the existing site access, as illustrated below in **Figure 15.**

Figure 15: Traffic Volume Counter (ATC) Location



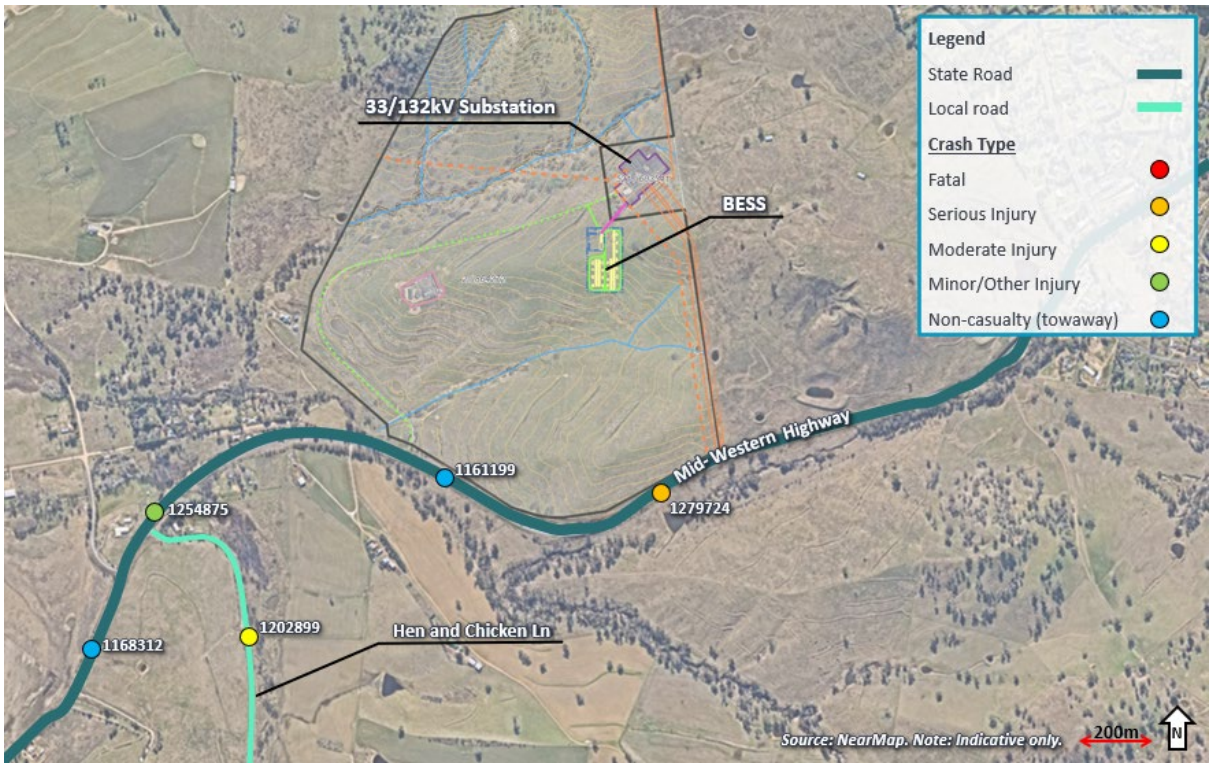
The following peak hours were identified as follows from the ATC data:

- Weekday AM peak: 7:00am – 8:00am;
- Weekday PM peak: 3:00pm – 4:00pm; and
- Weekend peak: 11:00am – 12:00pm.

6.4.1.3 Crash History

To highlight any safety deficiencies in the surrounding road network in proximity to the Project site, crash data was extracted from TfNSW Centre for Road Safety, with crashes reported for the latest five-year period (between 2017 - 2021). Crash locations are illustrated below in Figure 16**,** with details on severity, year of occurrence, and road user movement (RUM) code detailed in Table 5 of the TIA (SLR Consulting, 2024). A total of five crashes were recorded in the vicinity of the Project site, with the majority of the crashes occurring due to loss of vehicle control (particularly at bends) and not at the existing (and proposed) access location to the Project site. No fatal injuries were noted for the five recorded crashes.

Figure 16: Study Road Network Crash Data



6.4.2 Construction Impact Assessment

6.4.2.1 Traffic Generation

Traffic generated during the construction of the Project is associated with the transportation of the workforce and materials/equipment, hence TIA (SLR Consulting, 2024) has broken down the traffic generating elements of the construction phase of the Project into two classes, as follows:

- Construction heavy vehicle traffic; and
- Construction workforce (light vehicle traffic).

Heavy Vehicles

Table 21 below provides an overview of the construction heavy vehicle assumptions associated with material and fleet delivery demands to the site. As summarised in the table, it is anticipated that a maximum of 289 heavy vehicle return trips will occur during the construction of the Project (across 14 months).

Table 21: Construction Heavy Vehicle Traffic Generation

Element	Assumption	Vehicle Type
BESS Containers	165 return trips	AV (20m long)
Ancillary equipment (cable, substation equipment, etc.)	20 return trips	AV (20m long)
Ancillary equipment (switch room and O&M Building)	4 return trips	Low Loader (approx. 20m)
Aggregates/ Concrete	100 return trips	Truck and Dog (approx. 17m)

Element	Assumption	Vehicle Type
Transformer	2 return trips	10-axle Platform Trailer with one prime mover (approx. 31m).
Total	291 return trips in 14 months	

Light Vehicles

Table 22 below provides an overview of the construction light vehicle assumptions associated workforce attendance to the site. As summarised in the table, it is anticipated that 7,200 return trips associated with the workforce will occur during the construction of the proposed development (across 14 months).

Table 22: Construction Light Vehicle Traffic Generation

Element	Assumption
Workforce	20 persons maximum on-site
Roster	6 days on/ 1 day off
Construction Hours	Weekdays: 7am – 6pm Saturday: 8am – 1pm
Construction Duration	14 Months
Construction Deliveries	Linear progress across 14 months
Travel Arrangements	Workforce via private vehicle
Light Vehicle Occupancy	Conservatively, one driver and no passenger per vehicle
Total Staff Movements	7,200 return trips in total (over 14 months)
Staff Movements Per Day	20 light vehicle return trips per day
Workforce Distribution	100% to/from Bathurst (East)

Construction Phase Traffic Assumptions (Peak Period)

The proposed development is considered relatively small in capacity (200MWh) and development footprint in comparison with other BESS projects taking place in NSW, such as Orana BESS (1,600MWh).

Construction traffic is anticipated to peak in Month 6 and Month 7. During this two-month peak period, heavy vehicle movements could be as high as 8 inbound and 8 outbound vehicles per day. As stated earlier in this report, the workforce (worker numbers) is not expected to exceed 20 at any point during the construction.

Table 23 is a summary of anticipated typical/ average and peak traffic movements that will be generated during the construction period.

Table 23: Average and Peak Traffic Generation During Construction (One-Way)

Vehicle Type	Average Vehicle Movements		Peak Vehicle Movements	
	Daily (vpd)	Peak Hour (vph)	Daily (vpd)	Peak Hour (vph)
Light Vehicles	40.0	20.0	40.0	20.0
Heavy Vehicle	1.6 (SAY 2)	1	16.0	4.0
Total	**42.0**	**21.0**	**56.0**	**24.0**

6.4.2.2 Traffic Volumes

Peak hour development traffic volumes were calculated using the traffic volumes outlined above in Section 6.4.2.1. Construction traffic generation was considered in terms of light and heavy vehicle movements.

Construction traffic generation was assumed to progress linearly over the 14-month anticipated construction period with all materials arriving from the east via Bathurst. With this assumption, a daily construction traffic generation was determined by adopting a 6-day work week. For conservatism, a peak hour estimate was established by assuming that all construction vehicles were to arrive at the site within a 1-hour period instead of spreading out equally across the day (8-hours).

The traffic generated by the workforce (light vehicles) was determined by considering a maximum of 20 workers on site, all travelling privately in light vehicles. It is also assumed that all staff would travel via Bathurst.

Background traffic was determined from ATC data (refer to Section 6.4.1.2) along the Mid Western Highway in the vicinity of the Project site access. Peak hour traffic was determined from these surveys. Peak hour movements generated by the construction traffic, the anticipated work force, and the determined background traffic were collated and summed up in a desktop model which is provided in Appendix E of the TIA (SLR Consulting, 2024).

6.4.2.3 Travel Route

Heavy Vehicles

The BESS along with the other materials and the construction fleet will be transported to site via Bathurst. Other than the one-off transformer transportation, there will be no oversize and/or overmass (OSOM) vehicles required during the construction period because largest vehicle that will be utilised will be limited to the size of a standard 20m long articulated vehicle (AV). All heavy vehicles, other than those transporting the transformer, will take the routes to/from the development as depicted in **Figure 17.**

Figure 17: Proposed Heavy Vehicle Access Route

During their inbound journey all heavy vehicles will travel along Mitchell Highway and turn left onto Evans Plains Road using the dedicated left turn bay depicted in **Figure 18**. Heavy vehicles will then turn left off Evans Plains Road onto the Mid Western Highway and continue east to the site access where they will make a left in. On their return trip heavy vehicles will turn left out of the site onto the Mid Western Highway and continue east through Bathurst. These roads are all approved for AVs and 50-ton Gross Combination Mass (GCM) B-Doubles under the National Heavy Vehicle Regulator.

The inbound trip takes the Mitchell highway route via Evans Plains Road to prevent all heavy and light vehicles from making a right turn into site. The site access aligns with the beginning of an overtaking lane in the eastbound direction of the Mid Western Highway, as depicted in **Figure 18.** If heavy vehicles were to make a right turn into site at this location, they would have to cross over the eastbound lane in close proximity to the overtaking lane. This could pose a safety risk on two grounds:

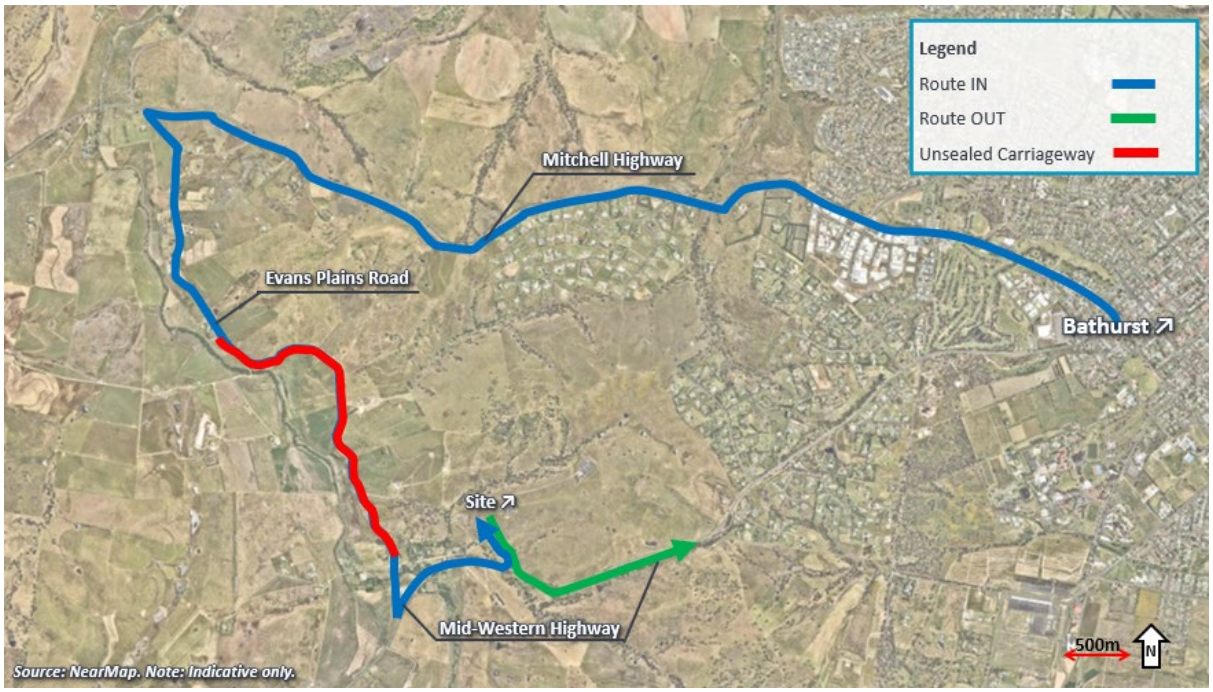
- As the overtaking lane presents an opportunity for the eastbound vehicles to begin accelerating prior to reaching the overtaking lane; and
- Due to the oncoming traffic in the eastbound direction, construction vehicles that are turning right into the site may have to come to a complete stop and this could represent a road safety issue given this is a 100km/h zone along a State Road.

Therefore, although not strictly required given it is permitted to cross a double barrier line to enter/ exit a property by the shortest route in NSW, it is recommended in the TIA that all heavy vehicles use the route via Mitchell Highway and Evans Plains Road as it allows the vehicles to turn left into site safely.

It is however important to note that a portion of Evans Plains Road is unsealed. The access intersections off Mitchell Highway and onto the Mid Western Highway are formalised and sealed, however a portion of Evans Plains Road is unsealed as depicted in **Figure 19.**

Figure 18: Left Turn Off Mitchell Highway

Figure 19: Unsealed Portion of Evans Plains Road



The TIA notes that it is not a common practice to direct heavy vehicles to an unsealed carriageway, however there are a number of factors which make this route safe and viable:

- Low construction traffic volumes: The development will generate 289 inbound heavy vehicle movements throughout the entire 14-month construction period which is in the order of 0.8 heavy vehicle inbound movements per day with no light vehicles utilising the unsealed carriageway;
- Low speed environment: Evans Plains Road serves as a low-speed road providing access to number of rural farming estates with low existing traffic volumes; and
- Allows heavy vehicles to make left turn into site: As discussed above, a right turn into the site in proximity to an overtaking lane could present higher safety risks. Travelling along Evans Plains Road will allow all heavy vehicles to turn left into site.

A detailed commentary on the suitability of the proposed route on the unsealed portion is included in the TIA at **Appendix I**.

Light Vehicles

It is assumed that all light vehicles will travel to the site from/via Bathurst. On their inbound journey all light vehicles will travel on the Mid-Western Highway in the westbound direction and turn right into the site via the existing access driveway crossover.

This right-turn movement will require light vehicles to cross the carriageway in close proximity to the beginning of an overtaking lane, however the arrangement is considered appropriate and safe given negligible delays due to low vehicular volumes (21 inbound light vehicles per day); safe intersection sight distances are satisfactory; and turn warrant assessments indicate that no dedicated turn lanes are necessary.

On their return trip, all light vehicles will turn left-out of the site onto the Mid Western Highway and continue east through Bathurst.

One-Off Transportation of the Transformer

Based on the discussions undertaken with the Applicant, it is understood that the transformer required for the proposed BESS facility will weigh approximately 100-110 tonnes. On this basis, it has been identified by SLR that one prime mover with a 10-axle platform trailer will be sufficient.

It is anticipated that the transformer will be imported to Port of Newcastle, Port Kembla or Port Botany. It is anticipated that the proposed transportation arrangements will require a vertical clearance of approximately 5380mm-5400mm. Prior to transportation, it is recommended that a simple OSOM material transportation assessment be prepared, which should consider all aspects of the preferred route in its entirety, such as bridge and tunnel clearances (from a vertical perspective) and carriageway widths such as tight turns (from a horizontal perspective).

The swept path assessments to illustrate that the existing road frontage (Mid Western Highway) and the driveway crossover are sufficiently wide to enable the transportation of the transformer into the site.

A detailed commentary is included in the TIA at **Appendix I**.

6.4.2.4 Sight Distances

A sight distance assessment was completed for the Project site access location in accordance with relevant Austroads Guidelines as detailed in Section 5.1 of the TIA (SLR Consulting, 2024). The eastern approach to the site along Mid Western Highway is located on a straight with no substantial horizontal bends or vertical curves that limit sight distance, and the western approach is situated on a minor horizontal bend, however, there are no substantial horizontal bends or vertical curves that limit sight distance.

Figure 20 below illustrates that both the western and eastern approaches have sufficient sight distances with no obstructions caused by vegetation, traffic signage, or bends and crests.

Figure 20: Access Location and Relevant Sight Distances

6.4.2.5 Turn Lane Warrants

A turn lane warrant assessment has been undertaken to establish the desirable form of the Project site access intersection in accordance with the industry research within the relevant Austroads Guideline as detailed in Section 5.2 of the TIA (SLR Consulting, 2024).

Due to the very low through and turning volumes at the Project site access location, turn lane warrant assessment determined that no major turn lane treatments are required. Consistent with the Austroads Guidelines, it is proposed that the provision of a BAL treatment is provided at the existing site access location. Additionally, right-turn into the site from Mid Western Highway travelling west should be banned for all heavy construction vehicles to ensure safety is maintained for road users.

Detailed outputs of the turn warrants assessment are included in Appendix F of the TIA (SLR Consulting, 2024) and swept path assessments are provided in Appendix H of the TIA (SLR Consulting, 2024) to demonstrate the existing access driveway crossover is able to accommodate the longest design vehicle that will be utilised during the construction period (20 m long AV).

6.4.2.6 Level of Service

For the purposes of the traffic assessment, it was assumed that the subject development would be completed and fully occupied by 2023. The following traffic assessment scenarios were adopted in the TIA (SLR Consulting, 2024):

- 2022 ‘Survey’: To establish operational conditions and baseline results at the time of the traffic surveys;
- 2023 ‘Background’: To establish the year of opening baseline operating conditions in the absence of the subject development at all intersections assessed; and
- 2023 ‘With Construction’: To quantify the incremental impact of construction traffic conditions.

The operational performance of the Project site access intersection has been analysed for each of these assessment scenarios during both the weekday AM and weekday PM, as well as Saturday mid-day peak hour periods using SIDRA Intersection 9.0 (SIDRA).

The SIDRA modelling indicates that Project site access intersection performs at Level of Service A (LOS A) for all scenarios with the maximum 95th percentile queue being 0.5 m. Therefore, it is anticipated that the construction traffic (heavy and light) will not have any significant impact on the wider road network. SIDRA analysis outputs are contained within Table 15 of the TIA (SLR Consulting, 2024).

6.4.3 Operational Impact Assessment

The Project is expected to operate for approximately 20 years following which the BESS will be decommissioned and the site will be rehabilitated to return the site to its original use at the end of its operational life. Decommissioning of the BESS would include disassembly and removal of associated infrastructure via heavy vehicle along the same heavy vehicle routes proposed for construction from the site.

The operation and decommissioning processes will have substantially less traffic generation than the construction period. As the construction scenario of any BESS development has the largest traffic impacts, compared to the impacts during the operation and decommissioning phases, no detailed assessments have been completed for the operational and decommissioning phases within the TIA (SLR Consulting, 2024), provided that all sufficient infrastructure is constructed during the construction phase.

Table 24 below includes a summary of the operational workforce assumptions associated with the Project.

Table 24: Operational Workforce

Element	Assumption
Workforce	5 persons maximum on-site
Roster	6 days on / 1 day off
Permanent Workforce	1 person(s)
Contractor Workforce	4 persons (conservative maximum)
Anticipated Fleet	Light vehicles, disposal trucks (Small & Medium Rigid)
Distribution	100% to/from Bathurst (East)

Note: Maximum operational workforce calculated by adopting a 'worst-case' scenario with all permanent and sub-contracted personnel being on-site at given time.

6.4.4 Mitigation and Management Measures

The TIA (SLR Consulting, 2024) prepared for the Project recommends the following mitigation measures:

- It is recommended that a simple OSOM material transportation assessment (A Route Study) for the one-off transportation of the transformer from the port of import to the development site, following the approval of the SSD application and the confirmation of the port of import and type/ quantity of the equipment. This report should consider all aspects of the preferred route in its entirety, such as bridge and tunnel clearances (from a vertical perspective) and carriageway widths such as tight turns (from a horizontal perspective).
- It is recommended that a Construction Traffic Management Plan (CTMP) or equivalent document be prepared to provide operational information such as heavy vehicle routes, contact details of the contractor, site speed limits, etc.
    - The CTMP should also include a Driver's Code of Conduct. This Driver's Code of Conduct should include but not be limited to the proposed approach/departures routes to/from the Project site and the possibility of black ice on the roads during the winter months;
    - The construction workforce are to be briefed on the Driver's Code of Conduct and the recommended route, which are to be included as part of the Project CTMP; and
- The Project site access location should be designed with a BAL treatment as per Austroads Guidelines prior to the commencement of construction and movement of heavy and light vehicles associated with the Project. No upgrades are considered necessary for the right-turn movement of light vehicles as part of the temporary construction traffic.

6.4.5 Conclusion

The TIA (SLR Consulting, 2024) prepared for the Project concluded that the Project would generate approximately 7,489 return trips during the construction period over 360 business days (14 months). The daily traffic generation will be in order of 21 return trips a day trips a day (20 light vehicle return trips and slightly less than one heavy vehicle return trip). Sight distances for the access crossover to the site along Mid Western Highway are acceptable

under Austroads Guidelines, and the TIA recommends that the access crossover location should be upgraded to a BAL treatment.

The heavy vehicle route directing heavy vehicles along Evans Plans Road is consistent with Austroads Guidelines and the TIA (SLR Consulting, 2024) confirms that the construction traffic volume modelled for the Project would be sufficiently low (21 return trips a day) that there will be no capacity constraints at the access crossover.

Recommendations have been made in relation to the heavy vehicle route access, which would form part of the CTMP. The TIA (SLR Consulting, 2024) recommends that the construction workforce is briefed on the recommended route with a Driver's Code of Conduct as part of the Project CTMP to be provided as a sub-plan to the Project Construction Environment Management Plan (CEMP) prior to the commencement of works.

6.5 Visual Amenity

This section presents the findings of a Landscape and Visual Impact Assessment (SLR Consulting, 2024) (LVIA) prepared in response to the SEARs. The LVIA includes a detailed analysis of the existing environment and proposed operations and outlines the methodology and criteria utilised to form an assessment of the Project. The LVIA is located in **Appendix J**.

6.5.1 Existing Environment

The Project site is located within low rolling hills with numerous undulations and small creek valleys on either side, located between two (2) distinct larger hills with a westerly aspect that reduce visibility to the northeast. The Project site located on the western side of an elevated ridge line adjacent to Robin Hill, with surrounding creek lines located to the periphery of the broader Project site including Evans Plains, Spring, Sawpit, and Jordan Creek. Vegetation within the broader Project site and Project site itself is detailed in **Section 6.3**, and access to the broader Project site and Project site itself is detailed in **Section 6.4.**

Photo 2 below illustrates the orientation and key viewing areas from within the Project site and the proposed location for the BESS.

Photo 2: View Orientation from within the Project Site

6.5.2 Assessment Methodology

The LVIA included a detailed desktop analysis supported by a detailed site investigation conducted in October 2022. The LVIA generally follows the following assessment techniques and guidelines:

- *'Guidelines for Landscape and Visual Impact Assessment, Third Edition'* (LI & IEMA, 2013) prepared by The Landscape Institute and the Institute for Environmental Management and Assessment (UK);

- *'Guidelines for landscape character and visual impact assessment'* (TfNSW, 2020) Environmental impact assessment practice note EIA-N04; and
- *'Technical Supplement - Landscape and Visual Impact Assessment; Large-scale Solar Energy Guideline'* (DPE, 2022).

The five (5) public vantage points (VP) identified within the LVIA for the purposes of assessment capture receptors that located along the main roads surrounding the Project site, which include vehicular uses (local residence, work related commuters, tourists, etc). In all locations, public receptor groups are primarily moving through the space. All image captures at each VP were obtained at a 1.5 m height to present the average human perspective from the selected VP.

The key public VP locations are listed in **Table 25** below with associated details including street address and GPS coordinate locations, and are shown in **Figure 21** and **Figure 22** below, being locations VP1-VP5.

Table 25: Key Public Receptor Viewpoint Locations

Viewpoint	Address	Coordinates
VP1	663 Hen and Chicken Lane, Bathurst NSW	33°27'3.75" S 149°30'35.34" E
VP2	89 Stewart St, Evan Plains NSW	33° 26' 17.322" S 149° 30' 1.764" E
VP3	1022 Mid Western Highway, Evans Plains NSW	33° 26' 54.774" S 149° 29' 52.488" E
VP4	663 Hen and Chicken Lane, Bathurst NSW	33° 27' 4.356" S 149° 30' 34.782" E
VP5	491 Evans Plains Road, Evans Plains NSW	33° 26' 20.25" S 149° 30' 24.126" E

All public VPs were selected based upon the following criterion:

- Visibility results determined in the zone of theoretically indicating visual impact for the Project;
- Site observations that demonstrated clear unencumbered vantage points of the Project site within public locations; and
- Relevance to the State and local planning principles, aims, objectives, and strategies where receptor points identified landscape and scenic vales that related to the protection of views and vistas.

Following selection of the VPs, a visibility model was run to ascertain the likelihood of the proposed infrastructure at the Project site being visible from these locations, referred to as the Zone of Theoretical Visibility (ZTV). The visibility analysis results are shown below in **Figure 21** and **Figure 22.**

Whilst all VP locations above represent public locations, private receptor locations were also identified, as summarised below in **Table 26**. Private receptor locations were captured in proximity to private residence usually within the front vehicle entrance or adjacent the property boundary. The location of the private receptors is demonstrated in **Figure 21,** and the locations of the Viewpoint Identification numbers (VID) of the images taken is shown in **Figure 22.** Access into private property was limited and only occurred from driveway locations and when permitted by property owners to do so, these locations are identified as public/private image capture locations in **Figure 22.**

Table 26: Private Receptor Locations

Closest Sensitive Receptor No.	VID	Address	Coordinates
R1*	**6***	800 Mid Western Hwy, Evans Plains	33° 25' 59.592"S 149° 30' 53.346"E
R2	**VID 7**	16 Stewart Street, Evans Plains	33° 26' 2.334" S 149° 30' 44.898" E
R36	**VID 9**	90 Stewart St, Evans Plains	33° 26' 23.988"S 149° 29' 33.372" E
R37	**VID 12**	447 Evans Plains Rd, Evans Plains	33° 25’ 54.336”S 149° 30’ 20.016”E
R2	**VID 13 & VID 14**	16 Stewart St, Evans Plains	33° 26' 10.614"S 149° 30' 41.88"E
R5	**VID 15 & VID 16**	27 Stewart St, Evans Plains	33° 26' 11.124"S 149° 30' 35.76"E
R38	**VID 19 & VID 20**	491 Evans Plains Rd, Evans Plains	33° 26' 21.768"S 149° 30' 20.46"E
R16	**VID 21**	27 Windemere Rd, Robin Hill	33° 25' 42.942" S 149° 32' 0.99" E
R39	**VID 25**	1022 Mid Western Hwy, Evans Plains	33° 27' 0.882"S 149° 29' 47.136"E
R6	**VID 31**	814 Hen and Chicken Ln, Evans Plains	33° 26' 20.328"S 149° 30' 28.338"E
R34	**VID 32**	337 Evans Plains Rd, Evans Plains	33° 25’ 32.298”S 149° 30’ 3.642”E
R40	**VID 33**	82 Marys Lane, Dunkeld	33° 24' 35.082"S 149° 28' 35.94"E

**800 Mid-Western Hwy, Evans Plains is a is a host landowner*

6.5.3 Public Receptor Impact Assessment

The summary of the assessment for the public VP locations were objectively assessed for their sensitivity of change and the likelihood for these points to be impacted by the Project.

Results of the impact assessment for the public VP locations are summarised below in **Table 27.**

Table 27: Visual Impact Ratings for Each Public VP

Vantage Points	Receptor Sensitivity	Magnitude of Change	Effect Significance (without mitigation)
VP1	Medium	Low	Minor-Moderate
VP2	Low	Low	Minor
VP3	High	Low	Moderate
VP4	Medium	Low	Minor-Moderate
VP5	High	Negligible	Minor-Moderate

Whilst the technical supplement guidelines above in **Table 27** rates rural roads as low viewpoint sensitivity, the relevant guidelines noted previously in **Section 6.5.2** also states that it is not determinative and the other inputs must be considered in arriving at the final rating. For Bathurst Regional Council, the other inputs include the Local Strategic Planning Statements (LSPS), LEP, Development Control Plan (DCP), Road Restraint Systems (RRS), and Roadside Vegetation Management Plan (RVMP) which apply a high sensitivity rating for rural roads that is reflective of the community values.

The summary of the visual impact ratings above demonstrates that the public VP locations that returned a high to low receptor sensitivity was due to being a “*regionally important*

location(s), scenic route(s)/gateway(s) with quality views important views of the site and surrounding areas where landscape is the specific focus."

The magnitude of change assessment results ranged from low (noticeable change) to negligible (barely perceptible change) due to "*minor memorable change to the landscape or view(s)"* and "*no memorable or rarely perceptible change to landscape character of key view(s)*."

Overall, the results of the assessment of visual impacts of the Project on the public VPs resulted in effect significance ratings of moderate and minor, primarily due to the higher rating assigned to receptor sensitivity and the scenic and landscape values identified in the State and local planning documents.

The Project site is located within an elevated position and is considered to be part of the ridgelines and hilltops. Within the Bathurst region these are anticipated to be protected for its scenic value, however due to the proposed infrastructure components having a compact form and low heights, this minimises the potential for visual impact within its surrounding landscape character.

However in all instances, any impact significance rating can be reduced by minimising the evident use of the development by integrating it within its surroundings through the proposed mitigation measures.

6.5.3.1 Technical Supplement Methodology

The summary of the assessment for the public VP locations were also assessed as per stages 3 (visual sensitivity) and 4 (visual impact) of the Technical Supplement (DPE, 2022). It should be noted that the guideline for visual magnitude rating was not utilised as it cannot be applied to the Project due its specific parameters for assessing solar arrays.

Results of the impact assessment for the public VP locations as per the Technical Supplement (DPE, 2022) are summarised below in **Table 28.**

Table 28: Visual Impact Ratings for Each Public VP as per Technical Supplement Methodology

Vantage Points	Viewpoint sensitivity	Scenic quality	Visual sensitivity	Visual magnitude	Visual Impact (no mitigation)	Post Mitigation Visual Impact
VP1	Moderate	High	High	Low	Moderate	Negligible / Very Low
VP2	Low	High	Moderate	Low	Low	Negligible / Very Low
VP3	Moderate	High	High	Low	Moderate	Negligible / Very Low
VP4	Low	High	Moderate	Low	Low	Negligible / Very Low
VP5	Moderate	High	High	Very low	Low	Negligible / Very Low

6.5.4 Private Receptor Impact Assessment

The summary of the assessment for the private receptor locations were objectively assessed for their sensitivity of change and the likelihood for these points to be impacted by the Project.

The likelihood of potential impacts to the private receptor locations varied considerably due to factors including the location and orientation of the private receptor, the established tree

canopy and screening vegetation, the Project site location and orientation, and the topography on and surrounding the Project site.

Distance of the receptor to the Project Site did not play a significant role due to the numerous unobstructed views and vista within the undulating terrain. This produced high to negligible sensitivity results as there were clear sightlines toward the Development Site.

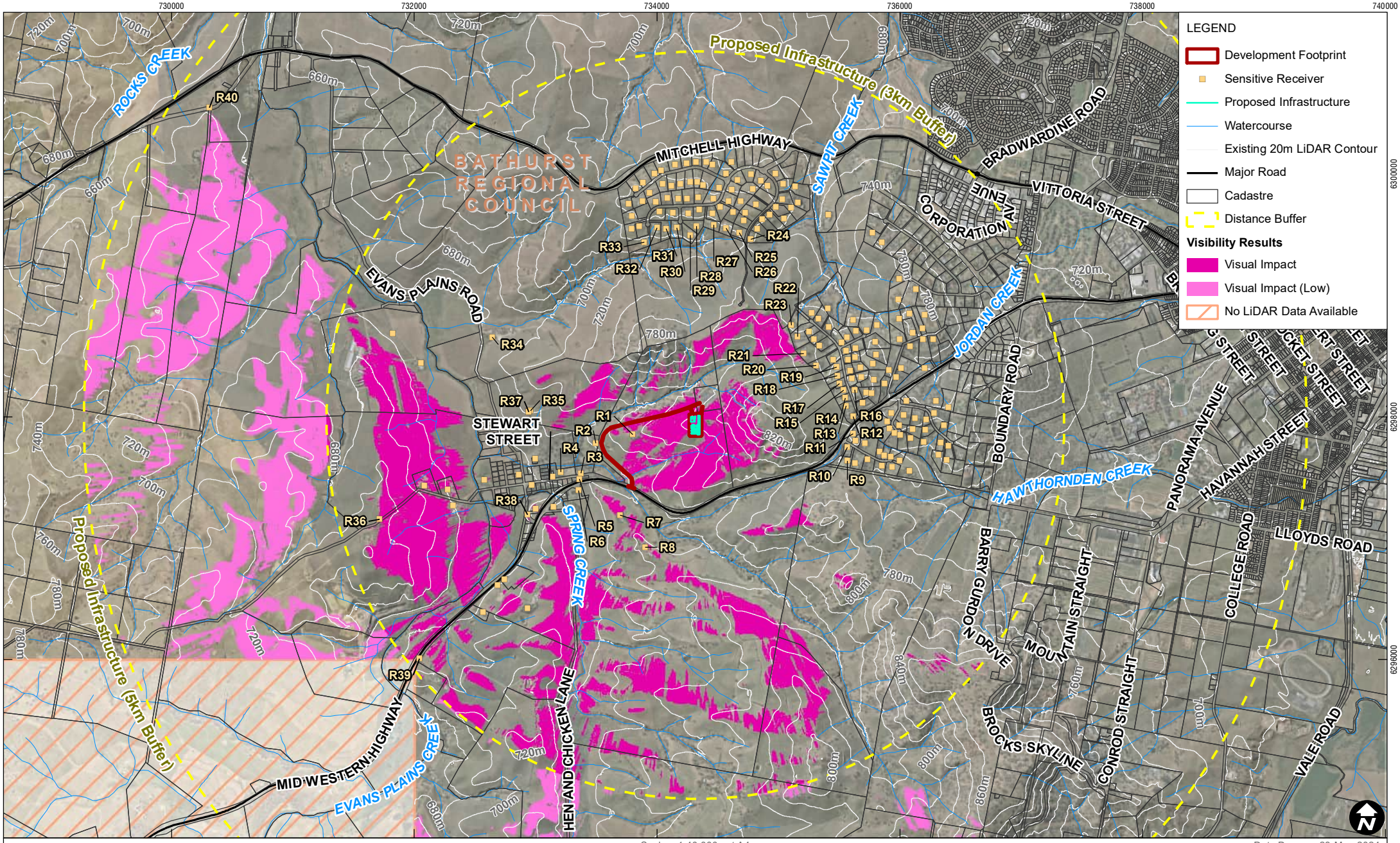
The magnitude rating were generally moderate to negligible. This was due to the scale and height of the proposed built form only presenting minimal evident use with its surrounding landscape context. However in all instances, any impact significance rating can be reduced by minimising the evident use of the development by integrating it within its surroundings through the proposed mitigation measures.

Results of the impact assessment for the private receptor locations are summarised below in **Table 29.**

Table 29: Visual Impact Ratings for Each Private Receptor Location

Closest Sensitive Receptor No.	Viewpoint ID	Address	Impact Significance Rating (No Mitigation)	Post Mitigation Impact Significance Rating
R1*	VID 6*	800 Mid Western Hwy, Evans Plains	Moderate	Negligible / Very Low
R2	VID 7	16 Stewart Street, Evans Plains	Minor- Negligible	Negligible / Very Low
R36	VID 9	90 Stewart St, Evans Plains	Moderate	Negligible / Very Low
R37	VID 12	447 Evans Plains Rd, Evans Plains	Minor- Negligible	Negligible / Very Low
R2	VID 13 & VID 14	16 Stewart St, Evans Plains	Minor	Negligible / Very Low
R5	VID 15 & VID 16	27 Stewart St, Evans Plains	Minor- Negligible	Negligible / Very Low
R38	VID 19 & VID 20	491 Evans Plains Rd, Evans Plains	Minor- Negligible	Negligible / Very Low
R16	VID 21	27 Windemere Rd, Robin Hill	Negligible	Negligible / Very Low
R39	VID 25	1022 Mid Western Hwy, Evans Plains	Minor- Negligible	Negligible / Very Low
R6	VID 31	814 Hen and Chicken Ln, Evans Plains	Minor	Negligible / Very Low
R34	VID 32	337 Evans Plains Rd, Evans Plains	Minor- Negligible	Negligible / Very Low
	VID 33	82 Marys Lane, Dunkeld	Minor- Negligible	Negligible / Very Low

**800 Mid-Western Hwy, Evans Plains is a is a host landowner*



Scale: 1:40,000 at A4
Coordinate System: GDA 1994 MGA Zone 55

Date Drawn: 28-May-2024
Project Number: 660.30234.00000

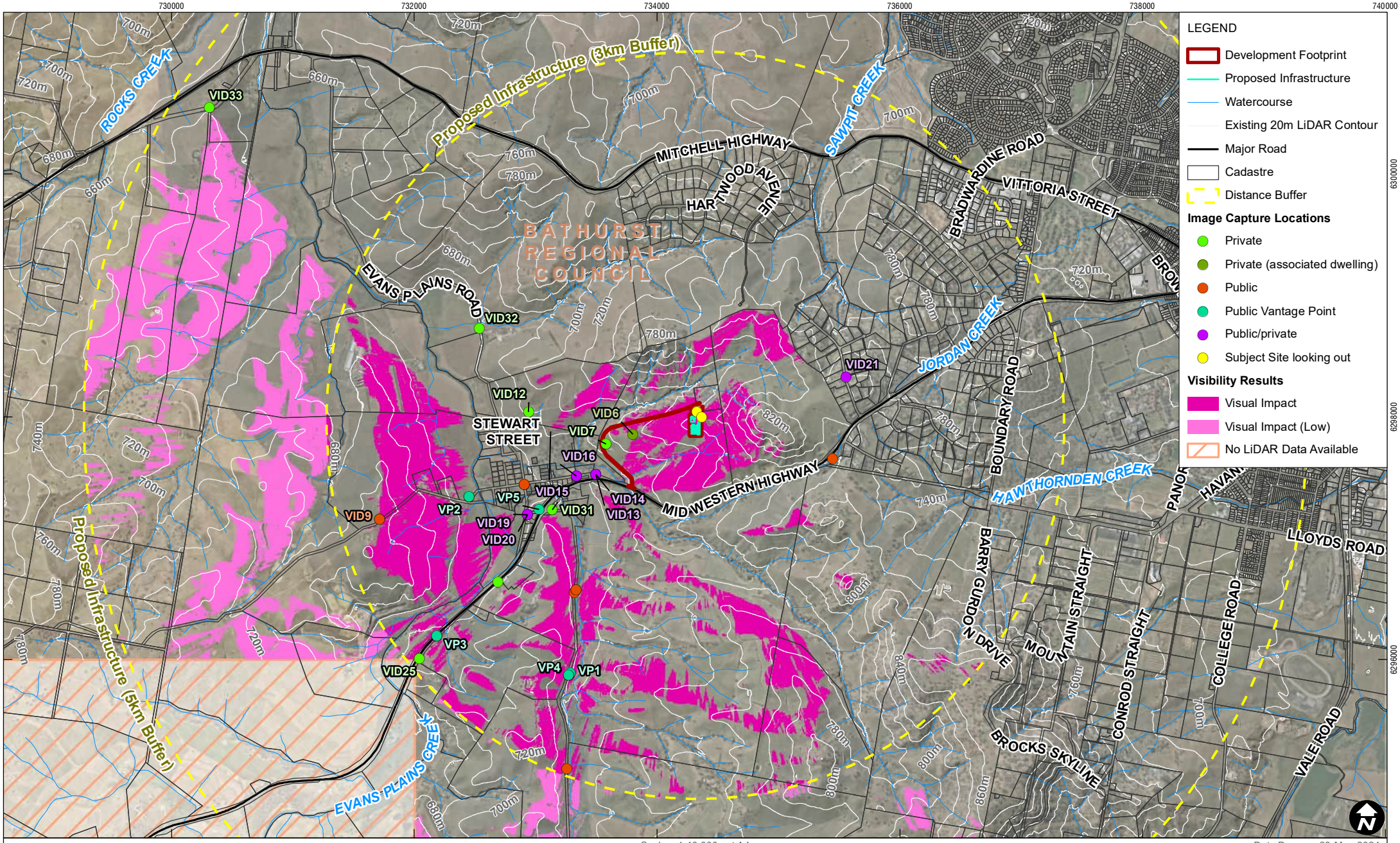
Data Source: Basedata NSW SS, December 2021
Aerial imagery supplied by Nearmap (March, 2024)
Elevation data supplied by DCS Spatial Services (July, 2019)

SLR

VISIBILITY RESULTS AND SENSITIVE RECEIVERS

FIGURE 21

H:\Projects-SLR\660-SrvWOL\660-WOL\660.30234.00000 Bathurst BESS SSD Approvals\06 SLR Data\01 CADGIS\GIS\SLR66030234_EIS_G15_VisibilityResults_004.mxd



Data Source: Basedata NSW SS, December 2021
Aerial imagery supplied by Nearmap (March, 2024)
Elevation data supplied by DCS Spatial Services (July, 2019)

SLR

VISIBILITY RESULTS AND VIEWPOINT LOCATIONS

FIGURE 22

H:\Projects-SLR\660-SrvWOL\660-WOL\660.30234.00000 Bathurst BESS SSD Approvals\06 SLR Data\01 CADGIS\GIS\SLR66030234_EIS_G17_VisibilityResults_andVPs_001.mxd

6.5.5 Mitigation and Management Measures

The following mitigations measures are options for the proposed development in considering the existing landscape character of the area and the importance the local community places on protecting and enhancing the region's landscapes, views, vistas, and open spaces to maintain the rural and scenic character of the landscape.

The LVIA (SLR Consulting, 2024) prepared for the Project recommends the following mitigation measures:

- A visual management plan (VMP) is proposed to be prepared prior to works which will document a range of mitigation measures. It is proposed to colour all visible infrastructure elements to blend with its surrounding context by colour-matching with natural elements. If required, further consideration of landscaping and screening will be applied;
- Reduce the presence of the infrastructure by reducing its visibility within an elevated location such as locating behind existing terrain by painting or cladding all visible infrastructure elements to blend with its surrounding context by colour-matching with natural elements;
- It is recommended to choose colours for all visible infrastructure elements that will allow the infrastructure to blend with its surrounding context by colour matching with natural elements;
- If required, utilise species from the endemic Central Tableland Clay Apple Box Grassy Forest (PCT3366), plant around the existing stand of trees above the site and establishing new stands of trees below the site (where practical to do so and at distances and spacing to meet APZ fire safety requirements in accordance with Appendix 4 of Planning for Bush Fire Protection 2019 (PBP 2019)) to create vegetative buffering that is in character with its surroundings.

6.5.6 Conclusion

The LVIA (SLR Consulting, 2024) prepared for the Project concluded that following the implementation of the prescribed mitigation measures identified, the development would blend into its surrounds and would result in an impact significance rating of '**Negligible or Very low'** to the identified public vantage points and private receptors.

In all instances, any impact significance rating can be reduced by minimising the evident use of the Project by integrating it within its surrounding context. The implementation of mitigation measures will ensure that the Project addresses the local and planning objectives in protecting and enhancing the rural scenic views and vistas that characterise Bathurst region, so that it blends in with its surrounding context.

6.6 Surface and Ground Water

This section presents the findings of a Surface and Groundwater Assessment (SLR Consulting, 2024) (SGWA) prepared in response to the SEARs. The SGWA includes a detailed analysis of the existing environment and proposed construction and operation, and outlines the methodology and criteria utilised to form an assessment of the Project. The SGWA is located at **Appendix K**.

6.6.1 Existing Environment

The broader Project site is located within the catchment of the Evans Plains Creek. Elevation across the broader Project site ranges between approximately 680 to 780 metres AHD, generally sloping east to west with a westerly aspect. The BESS facility is proposed to be constructed on a slope generally greater than 10%, less than 100 m southwest of the

existing Transgrid substation on Lot 521 DP 603541. Soil landscape mapping indicates that the Project lies entirely within the 'Bathurst' soil landscape. The site corresponds directly with the elevation and slope characteristics identified within this soil landscape typology. Soil salinity mapping suggests that salinity does not pose development implications for the Project, and there are no areas of ASS mapped within the broader Project site.

The closest Bureau of Meteorology (BOM) climate station to the Site that provides current mean monthly climate and rainfall data is the Bathurst Agricultural Station Site (site number 063005), located approximately 3.5 km from the Project site, with recording of climate data commencing in 1908. Rainfall for the Project site is based on BOM data from this station, with average annual rainfall at Bathurst Agricultural Station recorded as 639.7 millimetres (mm). Seasonal rainfall variance is apparent, with highest rainfall occurring during October to March.

Measurements from the station also indicate there can be considerable fluctuation in the depth of rainfall from year to year at Bathurst. Given the design life of the facility (20 to 30 years), short term impacts of climate change may be observed as increased rainfall, however given the location of the facility at an elevation above 650m AHD, there is a low probability of flood risk. The LEP identifies the Flood Planning Area (FPA) for the Bathurst township and the Project is not located on land that is mapped as being susceptible to flooding under the LEP.

6.6.1.1 Surface Water Assessment

The Project site's contributing catchment is located to the east of Evans Plains Creek which ultimately discharges into the Macquarie River. During rainfall events, runoff from the broader Project site drains to tributaries of Evans Plains Creek via overland flow, culverts, and channels/swales. The locations of water courses within and surrounding the Project site can be seen below in **Figure 23**. NSW Water Quality and River Flow Objectives suggest that the natural regime of flows from the Project site should be retained as far as practically compatible with other requirements, mimicking natural flow patterns as closely as possible.

Project activities that have the potential to affect water resources include runoff and erosion that may impact site soil and downstream water quality, however mitigation and management measures implemented during construction and operation will mitigate these risks. There is no existing water quality data available for the broader Project site. The water courses and site channels are highly ephemeral in nature and given the low impact of the proposal, it is intended that the inclusion of best practice water quality control measures will ensure impacts to water quality are managed.

The Project is proposed to include the construction of a concrete pad for the BESS and benching of the site to level the foundation for each Project component. The impervious nature of the concrete will increase run-off, however benching of the site will reduce overland flow velocities. Negligible effects on downstream surface water hydrology are anticipated due as a result of the construction and operation of the Project.

6.6.1.2 Ground Water Assessment

Groundwater is vital in sustaining Groundwater Dependent Ecosystems (GDEs), including aquatic and terrestrial ecosystems such as springs, wetlands, rivers, and forests. GDEs can include aquatic ecosystems which rely on the surface expression of groundwater, and terrestrial ecosystems which rely on the subsurface presence of groundwater. Due to the low risk of the Project to ecological values, a BDAR Waiver (SLR Consulting, 2024) (**Appendix G**) has been approved by DPHI on 11 April, discussion on impacts to GDEs is limited to the SGWA (SLR Consulting, 2024).

GDE mapping was reviewed using the SEED Database, with no known aquatic or terrestrial GDEs mapped within the broader Project boundary. The Project is not envisaged to impact

baseflow contributions to Evans Plains Creek and therefore does not threaten potential GDEs associated with the creek. The locations of aquatic and terrestrial GDEs can be seen below in **Figure 23.**

The Project site has no licensed groundwater bores, with a review of registered bores in the area conducted using the WaterNSW real time database and showing numerous private bores surrounding the site. The review highlighted that 15 registered bores are present within 2 km of the broader Project site, with each reported as privately owned, and available lithology data illustrates that a soil profile of varied thickness (0 to 10 m) overlies the granite of the Bathurst Batholith. Numerous water levels are reported for the bores ranging between 0.9 and 30.5 m depth, varying at different locations around the Project site. The bore nearest to the Project is located on the property immediately east and is not in the receiving environment of the Project. Several bores downslope of the Project are logged at depths of 10 m and below. Impacts to groundwater supply due to the shallow excavation works forecast for the Project are not anticipated.

6.6.2 Construction Impact Assessment

Ground disturbance due to site earthworks represents the greatest risk to surface water quality during construction, increasing erosion and mobilising sediments into receiving watercourses, which has the potential to increase turbidity and nutrient loads in downstream watercourses. The implementation of standard erosion and sediment control measures will result in the potential environmental impact being considered very low and manageable.

A site wide Erosion and Sediment Control Plan (ESCP) will be prepared as part of the CEMP for the Project. The ESCP will be prepared in accordance with *Managing Urban Stormwater: Soils and Construction* (Landcom, 2004), known as 'the Blue Book', and *Volume 2A Installation of Services* (DECC 2008a). Mitigation measures and site management practices will be included within the CEMP and OEMP as detailed in Sections 11 and 12 of the SGWA (SLR Consulting, 2024) and summarised in **Section 6.6.5** below.

Water will be required during the construction phase for dust suppression, general construction, and maintenance activities. This water will be brought to site in water tankers. Construction water requirements for the Project are estimated between 10,000 to 20,000 L per day. It is intended to source this water from the Council's bulk water supply which can be accessed through several water filling stations located in Hereford Street within the Bathurst township.

Wastewater during construction will be captured and appropriately removed from site/disposed in accordance with Council/water authority requirements. Potable water may be transported to site in bottles for use by the construction workforce.

6.6.3 Operational Impact Assessment

Concentrated runoff from the surface of battery enclosures has the potential to cause localised erosion, this will be mitigated by placement of erosion resistant surfaces or materials that slow runoff to allow infiltration. Dust generation is also possible from unsealed access roads on-site, which may contribute to sedimentation and increased turbidity in downstream waterbodies. Dust generation will be mitigated by lower traffic volumes during operation and reduced speed limits on site, as well as the formalisation of the existing internal access road from the site entrance to the BESS facility compound. A conceptual stormwater design is proposed within the SGWA (SLR Consulting, 2024) to address stormwater management on the site, however design specifications will be formally established during the detailed design phase of the Project.

Soil disturbance during operation of the BESS such as during maintenance works will be minimal and limited to low impact maintenance activities involving small, localised

disturbance areas on an infrequent basis. Water quality impacts from these minor disturbances are likely to have an insignificant impact on site water quality.

6.6.4 Decommissioning and Rehabilitation

At the conclusion of the useful life of the Project, infrastructure will be removed, and the site will be graded as close to pre-Project landform as possible, with some revegetation anticipated to be required during this phase. During this phase it is likely there may be disturbance of site soils, and the risk of soil erosion until an effective vegetative cover is established. Potential impacts of erosion are similar to the construction phase and include the potential loss of future land productivity if topsoil is eroded. An ESCP will be implemented to mitigate these impacts.

6.6.5 Mitigation and Management Measures

The SGWA (SLR Consulting, 2024) prepared for the Project recommends the following mitigation measures:

- Preparation of a CEMP during the detailed design phase of the Project that will outline the environmental measures, monitoring and reporting required to ensure satisfactory environmental performance and result in the potential environmental impact being considered very low and manageable. Minimum requirements for inclusion within the CEMP include:
    - Water quality monitoring quality in the event of a spill, unplanned discharge, or other incident during the construction phase will be carried out as described below for the OEMP;
    - An ESCP for construction activities that is consistent with the measures outlined in this EIS;
- Preparation of an OEMP during the detailed design phase of the Project that will outline the environmental measures, monitoring and reporting required to ensure satisfactory environmental performance. Minimum requirements for inclusion within the OEMP include:
    - Development of a suitable strategy for monitoring and reporting on water quality in the event of a spill, unplanned discharge, or other incident;
    - A procedure for erosion and sediment controls for ground disturbance activities;
    - Requirements for storage and use of hydrocarbons and chemicals, and a Spill Management Plan;
- Water monitoring to be undertaken in the event of a spill, unplanned site discharge or other incident that has potential to impact receiving water quality, should include the following response actions:
    - A water sample collected at the site of the spill, unplanned site discharge, or other incident and upstream and downstream of the site, and submitted for laboratory analysis. The analytes to assess determined by a suitably qualified third party specialist;
    - Photos of the incident captured and the incident documented; and
    - If necessary, a suitably qualified third party specialist engaged to investigate potential impacts and accordingly advise of recommended preventative or reparative measures as required.

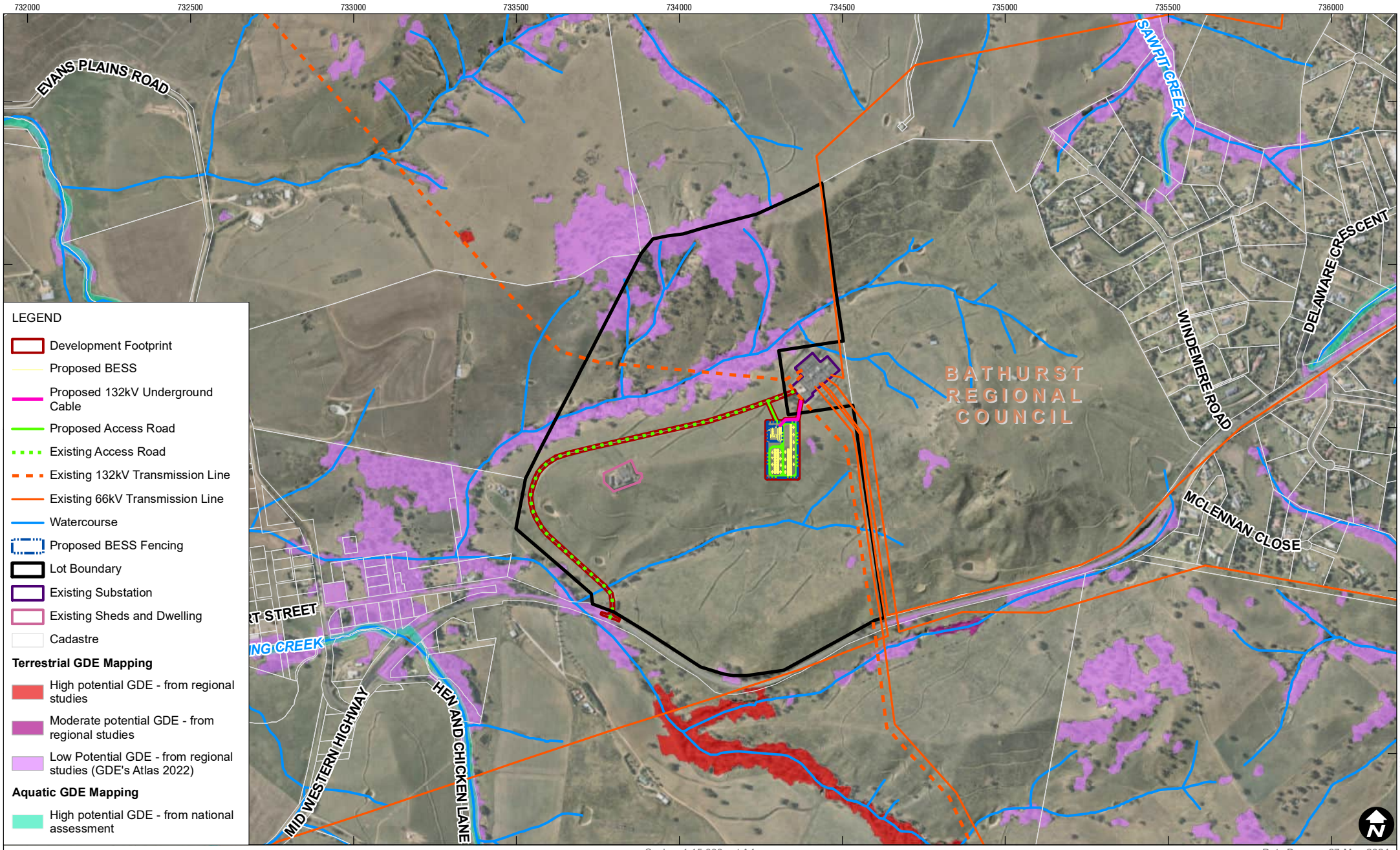
A summary of the general proposed mitigation measures for the Project are presented in **Table 30** below.

Table 30: Proposed Mitigation Measures

Potential Impact	Mitigation Measures
Erosion and sediment controls	• Limiting the area and time of disturbed areas. • Gentle grades, and a combination of progressive revegetation and surface cover across the site once disturbed. • Sediment sumps (including appropriate drainage). • Clean water diversions and sediment fencing. • Erosion Sediment Control Plan (ESCP).
Spillage of hydrocarbons, chemicals, and fuel	• Regular inspection of the battery systems, the substation and transformers which will identify any issues with leakages. • Storage of chemicals in accordance with Australian Standards. • Storage of hydrocarbon fuels within bunded storage areas. • Bunding of substations, transformers or other infrastructure that utilise oil. • Minimise usage of herbicides and avoid spraying when rain is forecast. • A Spill Management Plan, including emergency response and EPA notification procedures.
Monitoring, licensing, and reporting during construction and operation	• Documentation of incidents or accidents impacting water quality. • Water quality compliance with SEARs. • Construction Environmental Management Plan (CEMP). • Operational Environmental Management Plan (OEMP). • Regular inspection of the battery systems, the substation and transformers which will identify any issues with leakages. • A Spill Management Plan, including emergency response and EPA notification procedures.
Traffic, dust generation	• Speed limit of 40 km/hr on site. • Application of erosion-resistant material to road surfaces as required. • Dust suppression via water trucks as required
Closure and decommissioning	• A safe, stable, and non-polluting site. • Decommissioned and removed battery systems. • Restoring land use capability to its pre-existing use. • Ensure public safety in the community at all times. • ESCP. • Temporary ground cover and revegetation after removal of BESS.
Wastewater disposal	• Wastewater during construction will be captured and appropriately removed from site/disposed.
Water Quality	• Water quality compliance with SEARs. • CEMP including an ESCP for construction activities. • OEMP to identify requirements for water quality monitoring and reporting in the event of a spill, unplanned site discharge, or other incident. • Progressive rehabilitation of surfaces as installation and removal of batteries proceeds across the site.

6.6.6 Conclusion

The SGWA (SLR Consulting, 2024) prepared for the Project concluded that the development footprint of the Project site is unaffected by direct drainage lines, terrestrial or groundwater dependant ecosystems, and is extremely unlikely to be impacted by flooding. The Project is not expected to have a significant impact on surface or ground water resources, and the Project represents a moderate change in primary land use from grazing to a static BESS facility, which will lead to a minor increase in surface runoff which can be adequately mitigated by the measures proposed.



Scale: 1:15,000 at A4
Coordinate System: GDA 1994 MGA Zone 55

Date Drawn: 27-May-2024
Project Number: 660.30234.00000

Data Source: Basedata NSW SS, December 2021
Aerial imagery supplied by Nearmap (March, 2024)
Elevation data supplied by DCS Spatial Services (July, 2019)
GDEs - © State of NSW (Department of Planning and Environment – Water)

SLR

WATERCOURSES AND GROUNDWATER DEPENDENT ECOSYSTEMS (GDEs)

FIGURE 23

H:\Projects-SLR\660-SrvWOL\660-WOL\660.30234.00000 Bathurst BESS SSD Approvals\06 SLR Data\01 CADGIS\GIS\SLR66030234_EIS_G5_Constraints_WaterandSoils_002.mxd

6.7 Land Quality

This section presents the findings of a Soil and Agricultural Land Resource Assessment (SLR Consulting, 2024) (SALRA) prepared in response to the SEARs. The SALRA includes a detailed analysis of the existing environment and proposed construction and outlines the methodology and criteria utilised to form an assessment of the Project. The SALRA is located in **Appendix L**.

6.7.1 Existing Environment

There are no Crown Lands, Leases or Crown roads within or adjacent to the broader Project site. With reference to Geoscience NSW MinView Mapping, there are no existing mining, quarries, mineral or petroleum rights granted within the broader Project site. The current land use is cattle grazing improved grass pasture.

Two Australian Soil Classification soil units were mapped in the broader Project site, dominated by a Eutrophic Brown Dermosol (2 hectares (ha)) and an Anthroposol (1.5 ha), which were mapped using a combination of soil survey and laboratory analysis results. Soil types and sampling locations across the broader Project site are illustrated in **Figure 24.**

The Land and Soil Capability Assessment Scheme (OEH, 2012) ('LSC Scheme') assesses the inherent physical capacity of the land to sustain a range of land uses (and management practices) in the long term without leading to degradation of soil, land, air and water resources. Land is classified between an LSC class of 1 (best, highest capability land) and 8 (worst, lowest capability land). The majority of the broader Project site was classified as LSC Class 4, due to LSC Hazard Criteria 1 Slope Class and LSC Hazard Criteria 2 Wind Erosion Hazard. This class of soil is considered to have moderate agricultural capability with moderate to high limitations for high-impact land uses such as cropping. A portion of the broader Project site designated as an Anthroposol is found within the substation access track and is designated LSC Class 8 and is considered to have extremely low agricultural capability.

Agricultural enterprises within the broader Project site are suited to livestock grazing pastures with very occasional cultivation for pasture renovation, and is not considered highly productive agricultural land as defined in LSC Scheme. The broader Project site has the potential to generate $824 per annum from cattle grazing improved pastures, representing 0.002% of the Bathurst LGA agricultural production.

The likelihood of ASS occurring within the broader Project site is very low due to its location on the Central Tablelands, noting acid sulphate soils are typically found in coastal areas. None of the soil types mapped within the broader Project site have ASS potential. Given the elevation of the site is above 650 mAHD, it is unlikely to be impacted by flooding. A Biophysical Strategic Agricultural Land (BSAL) assessment verified the area as non-BSAL due to slopes greater than 10% and being less than 20 ha contiguous area.

Based on the assessment of soil type, limitations and agricultural capability rating, the entire broader Project site was found to is considered to have moderate to extremely low agricultural capability Table 31 according to definitions given in the LSC Scheme (OEH, 2012).

Table 31: Land and Soil Capability

LSC	Site	Dominant ASC	Limitation	Agricultural Capability Rating	Hectares	Coverage
4	B1, B2, B3	Dermosol	Slope & Wind Erosion Hazard	Moderate	2	57%
8	Access Track	Anthroposol	Rockiness	Extremely Low	1.5	43%
				Total	**3.5**	

6.7.2 Construction Impact Assessment

Soils within the broader Project site pose minimal risk for erosion during construction, operation, and decommissioning as supported by field inspection where no erosion was observed, even though slopes were in the range of 10 to 30%.

6.7.3 Operational Impact Assessment

Soil disturbance during operation of the BESS will be minimal and limited to low impact maintenance activities involving small, localised disturbance areas on an infrequent basis. These minor disturbances are unlikely to have any significant impact on land capability.

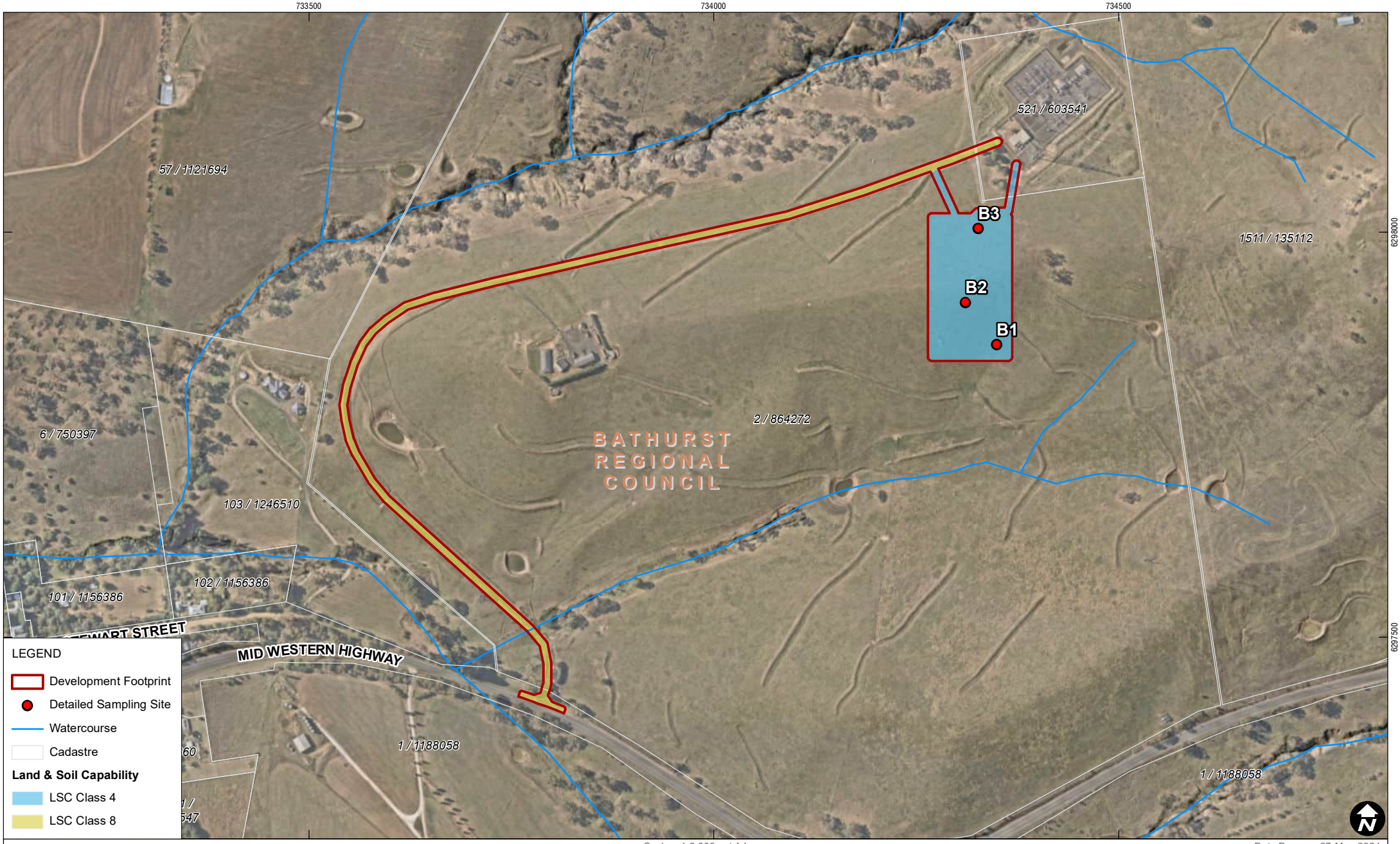
6.7.4 Mitigation and Management Measures

The SALRA (SLR Consulting, 2024) prepared for the Project recommends the same mitigation measures as proposed within the SGWA (SLR Consulting, 2024) and summarised in **Section 6.6.5**.

6.7.5 Conclusion

The SALRA (SLR Consulting, 2024) prepared for the Project concluded that the broader Project site is identifiable as LSC Class 4 (moderate capability land) and LSC Class 8 (extremely low capability land). No soils within the broader Project site are classified as BSAL, and the broader Project site is not considered highly productive agricultural land as defined in LSC Scheme (OEH 2012). The Eutrophic Brown Dermosol is classed non-dispersive to slightly dispersive and poses a minimal risk for erosion during construction, operation, and decommissioning.

The broader Project site has the potential to generate $824 per annum from cattle grazing improved pastures, representing 0.002% of the Bathurst LGA agricultural production. These factors indicate the change in land use to be suitable and present a low impact to its alternative use as agricultural production.



Scale: 1:6,000 at A4
Coordinate System: GDA 1994 MGA Zone 55

Date Drawn: 27-May-2024
Project Number: 660.30234.00000

Data Source: Basedata NSW SS, December 2021
Aerial imagery supplied by Nearmap (March, 2024)
Elevation data supplied by NSW Government Spatial Services - DFSI (BATHURST, 2kmx2km
1 metre Resolution Digital Elevation Model)

SLR

LAND SOIL CAPABILITY AND SAMPLING LOCATIONS

FIGURE 24

H:\Projects-SLR\660-SrvWOL\660-WOL\660.30234.00000 Bathurst BESS SSD Approvals\06 SLR Data\01 CADGIS\GIS\SLR66030234_EIS_G10_LandSoilCapabilityMap_002.mxd

6.8 Land Use Conflict

This section presents the findings of a Land Use Conflict Risk Assessment (SLR Consulting, 2024) (LUCRA) prepared in response to the SEARs. The LUCRA includes a detailed analysis of the existing environment and proposed construction and outlines the methodology and criteria utilised to form an assessment of the Project. The LUCRA is located in **Appendix M**.

6.8.1 Risk Assessment

The LUCRA identifies and evaluates potential land use conflicts associated with the Project based on the *Land Use Conflict Risk Assessment Guide* (DPI, 2011). The assessment evaluates the probability and consequence of potential land use conflicts and uses a matrix to estimate risk, probability, and consequence for each identified activity and potential conflict associated with the Project.

Table 6 in the LUCRA (SLR, 2024) located in **Appendix M** contains the full assessment including probability, consequence and subsequent risk ratings for all identified potential conflicts, as well as the corresponding management strategies, revised risk ratings, and performance targets. A summary of identified potential conflicts and their revised risk ratings is provided below in **Table 32.** For reference, risk rankings have been categorised in terms of their probability and consequence as follows:

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

Table 32: Revised Risk Ratings

Activity	Identified Potential Conflict	Initial Risk Ranking	Revised Risk Ranking
Visual Amenity	Visibility of construction activities from neighbouring properties and the road network	5	8
	Visibility of project infrastructure from residences and the road network	5	8
Agricultural land and productivity	Removal of agricultural land	11	2
	Reduced agricultural productivity of land project infrastructure during operations	7	2
Water quality	Impacts of construction activities on water quality	8	5
	Impacts of ongoing operation on water quality	4	2
Air quality	Dust generation during construction activities	12	8
	Dust generation during ongoing operation	12	8
Noise	Impacts of construction noise and vibration on residents	20	8
	Impacts of operational noise on residents	2	1
Safety	Exposure of residents to hazardous events or substances	22	6
	BESS explosion and/or thermal runaway reaction	22	10
Security	Change in land use resulting in increased activity on site during the projects construction period and potential theft or vandalism at neighbouring properties	13	9

Activity	Identified Potential Conflict	Initial Risk Ranking	Revised Risk Ranking
	Change in land use resulting in vandalism and theft of project infrastructure and construction materials	8	9
Traffic	Impacts of construction traffic (including heavy vehicles) on the function and efficiency of the road network	23	8
	Impact of operational traffic on the function and efficiency of the road network	1	1
Weeds and pest management	Introduction and increased distribution of weeds during construction as a result of increased vehicle and pedestrian movements	12	5
Livestock management	Livestock entering BESS area or construction roads	4	2
Waste	Increased waste production during construction	16	7

6.8.2 Conclusion

The LUCRA (SLR Consulting, 2024) prepared for the Project assessed the initial risk rankings of identified potential land use conflicts as seven (7) low risk, three (3) moderate risk, and three (3) high use conflicts. Initial high risk land use conflict relates to the potential for noise and traffic impacts associated with the construction phase as well as the potential safety implications, however following implementation of the mitigation measures proposed for the Project, all identified conflicts returned a low risk rating.

6.9 Air Quality

This section presents the findings of a desktop air quality assessment prepared in response to the SEARs. The desktop air quality assessment includes an analysis of the existing environment and proposed operations and outlines the methodology and criteria utilised to form an assessment of the Project.

6.9.1 Existing Environment

6.9.1.1 Air Quality

Given the rural character and setting of the Project, air quality in the locality is expected to be consistent with other rural environments across NSW. Existing sources of air pollution are expected to include emissions from vehicles (primarily along Mid Western Highway) and dust from agricultural operations.

Background air pollution at the broader Project site has been characterised through ambient monitoring completed across air quality monitoring stations (AQMS) within the NSW Air Quality Monitoring Network (AQMN) by DPHI (available at https://www.dpie.nsw.gov.au/air-quality/air-quality-data-services/data-download-facility). Data from the BOM monitoring site, which is located at the Bathurst Sewage Treatment Plant approximately 45 km west of the broader Project site, was utilised for the desktop air quality assessment.

The pollutants relevant to this desktop assessment retrieved from the Bathurst monitoring station include the following:

- Fine particles less than 2.5 micrometres in diameter (Particulate matter $(PM)_{2.5}$); and
- Fine particles less than 10 micrometres in diameter (PM_{10}).

The results from data retrieved for $PM_{2.5}$ and PM_{10} in six monthly intervals between 18 May 2021 and 19 May 2023 are summarised below in **Table 33** below.

Table 33: Bathurst Monitoring Station Air Quality Data

Pollutant	Average Period	Concentration (µg/m³)			
		30 June 2021	*31 December 2021*	*30 June 2021*	*31 December 2022*
$PM_{2.5}$	Monthly average	5.7	4.3	5.2	4.7
PM_{10}	Monthly average	7.9	10.6	7	12.2

The results of the fine particles from the Bathurst monitoring site indicate good air quality.

The air quality in the surrounds of the Project is influenced by the agricultural land uses within Bathurst LGA. A search was conducted of the Australian Government Department of Climate Changes, Energy, the Environment and Water (DCCEEW) National Pollutant Inventory (NPI) on 18 May 2023 which identified nine (9) registered facilities within the Bathurst LGA, with the closest three (3) to the broader Project site identified as follows:

- Bathurst Meter Station, approximately 7.4 km to the east of the broader Project site;
- Simplot Bathurst Plant, approximately 6.4 km to the east of the broader Project site; and
- Bathurst Sewage Treatment Plant, approximately 6.4 km to the east of the broader Project site.

6.9.1.2 Climate

The closest BOM climate station to the Site that provides current mean monthly climate and rainfall data is the Bathurst Agricultural Station Site (site number 063005), located approximately 3.5 km from the Project site, with recording of climate data commencing in 1908.

As shown in **Table 34** mean temperatures at the Site and surrounds range from 13.5 degrees Celsius (°C) to 28.2°C during summer (December to February), and from 0.6°C to 13°C during winter (July to August). Mean rainfall ranges from 41.3 millimetres (mm) in May to 68.4 mm in January.

Table 34: Climate Data from Bathurst Agricultural Station

	J	F	M	A	M	J	J	A	S	O	N	D
Mean Max Temp	28.2	27.3	24.6	20.3	15.8	12.3	11.4	13.0	16.5	20.1	23.4	26.5
Mean Min Temp	13.5	13.4	10.8	6.7	3.3	1.6	0.6	1.2	3.4	6.2	8.9	11.6
Mean Rainfall	68.4	57.6	54.0	41.8	41.3	44.1	48.2	50.1	47.1	59.3	63.3	65.2

Note: Red represents the highest value in the range, blue represents the lowest value in the range.

6.9.2 Construction Impact Assessment

During construction of the Project, it is expected that dust generation would result from bulk earthwork activities such as cutting, filling, and trenching. Additionally, fuel emissions are likely to result from light and heavy vehicles travelling to and from the Project site as detailed in **Section 6.4**.

6.9.3 Operational Impact Assessment

The impacts on local and regional air quality due to dust through the operational phase of the Project is expected to be negligible given the limited requirement for vehicles to attend site for maintenance and daily operation as detailed in **Section 6.4**.

6.9.4 Mitigation and Management Measures

The following mitigation measures are recommended to be incorporated into the CEMP to minimise dust generation during the construction and decommissioning phases of the Project:

- Exposed surfaces are to be minimised and effectively managed with dust and sediment suppression systems throughout construction to reduce the volume of potential dust emission sources;
- Staging of works to reduce area of exposed soil during bulk earthworks including trenching;
- Activities that generate dust will be avoided or modified during high wind periods; and
- Construction plant and equipment will be maintained in good working condition to limit impacts on air quality, including being fitted with pollution reduction devices where practicable and switched off when not in use.

6.9.5 Conclusion

The desktop air quality assessment prepared for the Project concluded that the air quality impacts during the construction, operational, and decommissioning phases are considered to be negligible with the implementation of the proposed mitigation measures.

6.10 Social

This section presents the findings of a Social Impact Assessment (SLR Consulting, 2024) (SIA) and Community and Stakeholder Engagement Plan (SLR Consulting, 2024) (CSEP) prepared in response to the SEARs. The SIA includes a detailed analysis of the existing environment and proposed construction and operation, and outlines the methodology and criteria utilised to form an assessment of the Project. The SIA and CSEP are located in **Appendix N and Appendix R**. The CSEP has been summarised in **Chapter 5.0** of this EIS.

6.10.1 Existing Environment

The Project is located in the far east extent of the suburb of Evans Plains, with a small population of only 168 people according to the 2021 ABS Census. Immediately to the east of the project location is Robin Hill, with a small population of 925 people according to the 2021 ABS Census. The City of Bathurst (urban centre and surrounding suburbs), which is located within the Bathurst Regional LGA and has a population of 36,230 people (Census 2021).

Key information on demographics and employment (by industry of employment) status is provided in **Table 35** for the Project social locality, Bathurst Regional LGA, and NSW.

Table 35: General Demographics

Characteristic	Social Locality	Bathurst Regional LGA	NSW
Median Age	37	38	39
Unemployment	4.4%	4.0%	4.9%
Industry of Employment (Top Responses)	Hospitals (except Psychiatric Hospitals) – 4.4% State Government Administration – 3.4% Other Social Assistance Services – 4.4%	Hospitals (except Psychiatric Hospitals) – 4.2% Other Social Assistance Workers – 4.0% State Government Administration – 3.3%	Hospitals (except Psychiatric Hospitals) – 4.2% Supermarkets and Grocery Stores – 2.5% Other Social Assistance Workers – 2.4%

Characteristic	Social Locality	Bathurst Regional LGA	NSW
Median weekly household income	$1,547.00	$1,585.00	$1,829

The Bathurst Regional LGA population is predicted to grow from 42,398 to 53,361 by 2036, which is approximately a 26% increase in population. This population increase will require variety of housing options, increased facilities and increased energy demands (Census 2021).

Key communities to experience social impacts and/or benefits of the Project have been identified as follows:

- Neighbouring residents;
- Neighbouring businesses and services;
- Local area workers;
- Visitors to the locality;
- Visitors from the broader region;
- Indigenous people; and
- Temporary construction workers in the area.

6.10.2 Impact Assessment

The SIA assesses the social impacts arising from the construction and operation of the Project, including measures to enhance social benefits and mitigate potentially negative impacts as per the principles set out in the *Social Impact Assessment Guideline for State Significant Projects* (The Guideline) (DPE, 2021) and aligns with requirements set out in the *Technical Supplement for Social Impact Assessment Guidelines for State Significant Developments* (DPE, 2021).

The assessment identifies the following key social factors relevant to the assessment of social impacts of the Project:

- **Way of life** - including how people live, how they get around, how they work, how they play, and how they interact each day;
- **Community** - including composition, cohesion, character, how the community functions, resilience, and people's sense of place;
- **Accessibility** - including how people access and use infrastructure, services and facilities, whether provided by a public, private, or not for-profit organisation;
- **Culture** - both Aboriginal and non-Aboriginal, including shared beliefs, customs, practices, obligations, values and stories, and connections to Country, land, waterways, places and buildings;
- **Health and wellbeing** - including physical and mental health especially for people vulnerable to social exclusion or substantial change, psychological stress resulting from financial or other pressures, access to open space and effects on public health;
- **Surroundings** - including ecosystem services such as shade, pollution control, erosion control, public safety and security, access to and use of the natural and built environment, and aesthetic value and amenity;
- **Livelihoods** - including people's capacity to sustain themselves through employment or business; and

- **Decision making systems -** Impacts on decision-making systems were identified as negligible as part of the SIA Scoping Stage and have therefore not been assessed in detail in this report.

Each impact identified for the Project has been assessed and assigned an overall risk that considers both the likelihood of the impact occurring and the consequences should the impact occur. The assessment also sets out recommended mitigation, management, and monitoring measures for each identified matter.

Table 36 below summarises the discussions on the potential social impacts of the Project across Tables 16 to 22 in the SIA (SLR Consulting, 2024), noting that impacts on decision-making systems were identified as negligible as part of the SIA Scoping Stage and have therefore not been assessed in detail in the SIA.

Table 36: Summary of Key Social Factor Impact Assessment

	Overall Impact	Likelihood	Duration	Consequence	Severity/ Sensitivity	Extent	Potential to Mitigate/ Enhance
Way of Life	**Construction:** High (likely moderate) – Negative **Operation:** High (likely moderate) – Positive	The short-term impacts have a high probability. The long-term positive impacts are almost certain.	Impacts would be short term. Positive outcomes would occur long term.	The consequence of change as a result of construction to way of life would be low – negative. As a result of operation, the consequence is moderate (positive).	Moderate sensitivity to impacts.	Construction impacts would likely impact workers, residents and visitors to Robin Hill and Bathurst. Provision of improved renewables and potential employment would impact residents of and workers living across the Bathurst Regional LGA and beyond.	Construction impacts would need to be proactively mitigated due to the communities directly affected.
Community	**Construction:** High (likely moderate) – Negative **Operation:** High (likely moderate) – Positive	Short term construction impacts with longer term positive impacts associated with renewable energy infrastructure and employment.	Operational benefits are long term.	The consequence of change as a result of construction to community would be low – negative. As a result of operation, the consequence is moderate (positive).	Moderate sensitivity to impacts.	Construction impacts would likely impact worker profile in the local area.	Construction impacts would need to be proactively mitigated due to the communities directly affected. During operation, there is a high ability for workers, local residents and visitors to adapt to new traffic arrangements around the site, due to their proposed quality and design.
Accessibility	**Construction:** Medium (possible minor) – Negative	Positive impacts of the proposed development are highly likely.	Operational benefits are long term.	The consequence of impacts during the construction phase are considered moderate. Upon completion the	Moderate sensitivity to impacts.	Construction impacts would likely primarily impact workers, visitors and local residents.	Construction impacts would need to be proactively mitigated.

	Overall Impact	Likelihood	Duration	Consequence	Severity/ Sensitivity	Extent	Potential to Mitigate/ Enhance
	Operation: High (likely major) – Positive			consequence of the development is considered minimal.			
Culture	**Construction:** Low (unlikely minor) – Negative **Operation:** Medium (likely minor) – Positive	Positive impacts of the proposed development are likely, and negative impacts are minor during construction.	Operational benefits are long term, construction impacts are temporary.	The consequence of impacts during the construction phase are considered moderate. Upon completion the consequence of the development is considered minimal.	Moderate sensitivity to impacts	Construction impacts would likely impact stakeholders within the area. Operational benefits have the potential to enhance connection to culture for visitors and local residents.	Construction impacts would need to be proactively mitigated.
Health and Wellbeing	**Construction:** Medium (possible moderate) – Negative **Operation:** High (likely major) – Positive.	Impacts of the proposed development on health and wellbeing during construction are likely. Positive impacts of the proposed development are highly likely during operation, both locally and to a district/regional extent.	Operational benefits are long term.	The consequences of negative impacts during construction will be moderate. The operational benefits will be significant.	Moderate sensitivity to impacts.	Construction impacts would likely impact residents and workers in the area.	Construction impacts would need to be proactively mitigated during construction.
Surrounds	**Construction:** Medium (likely minor) – Negative **Operation:** High (likely moderate) – Positive or Negative, dependant on the receiver	Positive impacts of the proposed development are highly likely as a result of the design and negative impacts will be mitigated during construction (e.g. staging plan to minimise disruption).	Operational benefits are long term, construction impacts are temporary.	The consequences of negative impacts during construction will be moderate. The operational benefits will be significant.	Moderate sensitivity to impacts.	Construction impacts would likely impact workers of surrounding businesses, residents and visitors in the area, improved surroundings and amenity would affect users of the site and workers and visitors	Construction impacts would need to be proactively mitigated.

	Overall Impact	Likelihood	Duration	Consequence	Severity/ Sensitivity	Extent	Potential to Mitigate/ Enhance
						from the broader area to the site.	
Livelihoods	**Construction:** Medium (likely minor) – Positive or negative **Operation:** Medium (likely minor) – Positive	Positive impacts of the proposed development on livelihoods are highly likely.	Operational benefits are long term, construction impacts are temporary.	Moderate consequence during construction.	Moderate sensitivity to impacts.	Construction impacts would likely mostly impact the construction sector and provide jobs within the area.	Benefits to livelihoods can be amplified by exploring opportunities to employ local residents during the construction and operational phases.

6.10.3 Mitigation and Management Measures

The SIA (SLR Consulting, 2024) prepared for the Project recommends the following mitigation measures:

Community Consultation Strategy

A Community Consultation Strategy (CCS) should be prepared prior to construction commencing to enable information exchange with the community and identify with them the Project specific mitigation and management strategies that will be in place to minimise the potential for negative impacts on the community in and around the construction site. The CCS will also detail processes and communication strategies to ensure that key stakeholders are advised and consulted about major changes and disruptions, and the process for providing feedback and further consultation during the Project.

Continued consultation with relevant stakeholders should be undertaken as per the CCS during operation of the Project.

Construction Environment Management Plan (CEMP)

The Project CEMP should include a complaints handling procedure for identifying and responding to community issues related to construction impacts. Mitigation measures developed by technical studies prepared for this EIS should also be incorporated into the CEMP, in addition to the following:

- A Visual Management Plan (VMP) should be prepared documenting actions to ensure infrastructure elements are colour-matched with natural elements and vegetative screening is maintained; and
- An Engineering Operation and Maintenance Management Plan should be prepared for the facility to include all measures aimed at managing hazards and risks, including specific targeted measures detailed in a Project Emergency Response Plan.

The CEMP should also provide protocols that will specifically ensure:

- Evans Plains Road is used by heavy vehicles for access to and from the site;
- Noise from construction vehicles and workers is kept to a minimum while arriving and leaving work, especially outside of agreed construction times; and
- Carpooling is encouraged where possible.

6.10.4 Conclusion

The SIA and CSEP (SLR Consulting, 2024) prepared for the Project assessed that the level of social impacts resulting from the Project range from low to high, with no major significant negative impacts identified that cannot be effectively mitigated.

The most significant social benefits of the Project relate to the provision of new renewable energy infrastructure, support for the continued and targeted growth of the national renewable energy generation capacity, and the positive impacts to livelihoods associated with increased employment opportunities with the Project expected to generate approximately 20 FTE construction jobs and one (1) FTE operational job. The overall long-term benefit of the Project is considered to be positive, and potential negative impacts can be mitigated through implementation of various technical reports prepared for the EIS. Overall, the Project is consistent with the strategic growth-focused aims and objectives and will support the development of the project and creation of employment generating land uses.

Mitigation measures to be implemented include the preparation of a CCS prior to construction commencing and a CEMP to manage potential adverse temporary impacts to the surroundings, health and wellbeing associated traffic impacts, dust, noise and/or vibration.

6.11 Economic

This section presents the findings of an Economic Impact Assessment (Gillespie Economics, 2024) (EIA) prepared in response to the SEARs. The report includes a detailed analysis of the existing environment and proposed construction and operation, and outlines the methodology and criteria utilised to form an assessment of the Project. The EIA is located in **Appendix O.**

6.11.1 Existing Environment

Based on the 2021 ABS Census, the regional economy of Bathurst Regional LGA had a population of 43,567 and a labour force of 21,317, with 863 people unemployed. Primary occupations of residents were Professionals (19.15), followed by Community and Personal Service Workers (15%), and Technicians and Trade Workers (14.2%). Economic data indicates the Health Care, Education and Training, and Forestry and Fishing sectors are significant employers in the region and exporting and importing industries are major contributors to gross regional product. An indicator of economic health of the region is the population which has been growing strongly (1.4% per annum from 2006 to 2021), which is only slightly less than the population growth rate for NSW (1.6% per annum from 2006 to 2021), and indicates a positive trend in the promotion of employment growth, demand for goods and services, and increase in economic viability.

6.11.2 Construction Impact Assessment

The Project will provide economic activity to the regional and NSW economy during both the construction and operational phases, with a nominal reduction in agricultural productive land use and a corresponding increase in economic activity generated through the operation of the BESS. This level of impact to agricultural production is considered negligible (as discussed in **Section 6.7**), and increased economic activity will take the form of increased expenditure in the region on non-labour inputs (purchases), direct employment of local labour or migration of labour, and expenditure of wages in the local economy.

Economic activity provided by the construction of the Project is associated with the civil engineering, construction and non-residential building sectors, and expenditure will be made on a range of products and services.

Over the period of construction (approximately 14 to 15 months), average annual construction employment is estimated at 20 full-time equivalents with 50% sourced from the region. Expenditure on the Project is projected to provide multiplied impacts due to the stimulation provided by the investment into the local economy. These figures consider the leakage which occurs when some of the workforce is sourced from outside the local region, and subsequently a lower level of consumption induced impact is experienced. The impacts are larger for the NSW economy because there is less leakage of direct and indirect expenditure out of the NSW economy compared to the regional economy and hence greater production induced and consumption induced flow-on effects.

The methodology used for assessment of potential economic impacts is an ‘Input/Output’ analysis which uses four indicators to measure impacts, these being: gross regional output; value-added (gross value - costs of inputs imported), income; the wages paid to employees and income for self-employed and business owners and employment; and the number of people employed (including self-employed, full-time, and part-time).

The total average annual impacts of the construction phase of the Project to the regional and state economy for across the approximate 14 to 15 month construction period are summarised below in **Table 37.**

Table 37: Average Annual Economic Impacts of the Project Construction

Economic Factor	Regional Economic Value	NSW Economic Value
Annual direct and indirect output	$18M	$30M
Annual direct and indirect value-added	$7M	$13M
Annual direct and indirect household income	$4M	$8M
Direct and Indirect jobs	51	93

6.11.3 Operational Impact Assessment

Operational employment is estimated to be one (1) and assumed to reside within the region. Capital intensive developments tend to have a high level of linkage with other sectors in an economy thus contributing relatively high rates of flow-on employment while at the same time only having a lower level of direct employment.

The total average annual economic impacts of the operational phase of the Project to the regional and state economy are summarised below in **Table 38.**

Table 38: Average Annual Economic Impacts of the Project Operation

Economic Factor	Regional Economic Value	NSW Economic Value
Annual direct and indirect output	$2.7M	$3.7M
Annual direct and indirect value-added	$1.1M	$1.6M
Annual direct and indirect household income	$0.3M	$0.7M
Direct and Indirect jobs	4	7

6.11.4 Mitigation and Management Measures

The construction and operation of the Project will have net positive impacts on the level of economic activity in the regional economy, however at the same time it would create a demand for a suitably qualified construction workforce in the region. The Proponent proposes to work in partnership with the Bathurst Regional Council and the local community to help maximise the projected economic regional benefits whist minimising any impacts.

In this respect, a range of general economic mitigation and management measures are proposed to include:

- Employment of regional residents where they have the required skills and experience and can demonstrate a cultural fit with the organisation;
- Participating, as appropriate, in business group meetings, events or programs in the regional community;
- Locally sourcing non-labour inputs to production where local producers can be cost and quality competitive; and
- Provision of community grants through various initiatives and programs within the local community, including the education, arts, sporting, and culture sectors.

6.11.5 Conclusion

The EIA (Gillespie Economics, 2024) prepared for the Project concluded that the Project will provide economic activity to the regional and NSW economy during both the construction and operational phases, and will contribute to a minor contraction in regional agricultural activity within the development footprint.

6.12 Waste Management

This section presents the findings of a desktop waste management assessment prepared in response to the SEARs. The desktop waste management assessment includes an analysis of the existing environment and proposed operations and outlines the methodology and criteria utilised to form an assessment of the Project.

6.12.1 Existing Environment

6.12.1.1 Assessment Methodology

To estimate the waste types generated and identify potential impacts and mitigation measures, the following methodology was utilised:

- Review of the relevant legislation and regulatory framework related to waste management;
- Identification of potential waste generating activities during site preparation, construction, operational and decommissioning phases;
- Identification of likely classification of waste types under relevant legislation and guidelines;
- Description and management methods of the key identified waste streams; and
- Identification of lawful disposal or recycling facilities.

6.12.1.2 Recycling and Disposal Sites

The waste types estimated in this waste assessment are indicative and have been identified to provide potential waste management options. The general waste and recycling from the construction and operational phases of the project will be disposed of at sites lawfully able to accept them. The quantities and types of waste generated by the proposed project will be within the capacity of the waste management facilities in the closest proximity to the site and other identified facilities.

Separated recyclable materials such as cardboard, containers and food organics, will be collected by contractors and taken to facilities specifically designed to either consolidate them for transportation to reprocessing facilities, or to sort them for transportation to such facilities. Non-recyclable wastes will be taken to transfer stations, or direct to landfills or to alternative waste processing facilities for disposal or treatment respectively.

Waste facilities licensed to accept general solid waste (putrescible and non-putrescible) for the Project site are listed below:

Waste Facilities (licensed to accept general solid waste (putrescible and non-putrescible))

- Bathurst Waste Management Centre - General solid waste (putrescible), dry material, garden organics, cover material, clean fill, road bases and road construction materials, e-waste, Oil - Motor & Grease, Paint & Solvents, metals; and
- Bathurst Recycling - Bricks, ceramics, concrete.

Other Potential Waste Facilities

- Blaney Waste Disposal Facility - General solid waste(putrescible), General solid waste(non-putrescible);
- Cowra Material Recycling Facility - General solid waste (putrescible), General solid waste(non-putrescible); and
- Glenlogan Road Material Recycling & Landfill Site - Liquid Waste, Restricted solid waste, Hazardous Wastes, drilling mud and/or muddy waters from drilling and pot holing operations, General solid waste (putrescible), General solid waste (non-putrescible), Waste tyres.

A review of the waste facilities in the nearby region, including waste streams accepted, shows that there is sufficient capacity to accept and process most waste streams from this Project.

Recyclables such as paper and cardboard, containers (including plastics, glass, cans) will be collected by a licensed waste contractor for off-site recycling. The most appropriate recycling facility will be determined by an appointed waste contractor during the construction stages of this project. All waste and recyclables will be delivered to sites lawfully able to accept them.

Arrangements for collection contractors and selection of waste facilities would be specified in the later stages of the project and details included in the Project CEMP.

6.12.2 Construction Waste Management

6.12.2.1 Early Works and Construction

Construction activities have the potential to generate waste through excess construction materials, waste generation from construction offices and excess spoil from excavation and foundation works. The construction activities for the Project would be undertaken according to a Project CEMP developed by the Construction Contractor that addresses waste management and reduction practices.

6.12.2.2 Waste Streams

During the construction of the Project, the following broad waste streams are expected:

- Excavation waste;
- Vegetation from site preparation;
- Construction waste;
- Plant maintenance waste;
- Packaging waste;
- Work compound (on-site employees) waste; and
- Wastewater (from plant maintenance and construction activities).

A summary of likely key waste types from excavation and construction activities, along with their waste classifications and proposed management methods are provided in **Table 39** below.

An initial desktop waste classification has been undertaken following the Waste Classification Guidelines (NSW EPA, 2014).

Table 39: Potential Early Works and Construction Waste Types, Pre-Classifications, and Management Methods

Waste Types and Activities	NSW EPA Waste Pre-Classification	Avoidance and Reuse	Storage and Collection	Disposal
Soil from earthworks spoil to prepare the access road, construction laydown areas	General solid (non-putrescible) waste	Onsite reuse of topsoil for landscaping of the site	Separate materials requiring offsite recovery	
Grasses, roots, and associated topsoil (green waste)	General solid (non-putrescible) waste	Onsite reuse of topsoil for landscaping of the site	Stored in bins of other contained area	Waste that cannot be recycled on site will be sent for recovery.
Construction waste - heavy from concrete, and mechanical and electrical plant and equipment	General solid (non-putrescible) waste	Recycled offsite and used for road base, fill sand or new bricks	Separate materials requiring offsite recovery Stockpile waste for reuse on site.	Dispose waste that cannot be reused on site at a licensed facility Recyclable materials will be reused onsite or sent to licensed facility for recycling
Construction waste – light from timber, packaging, plastic, and plasterboard.	General solid (non-putrescible) waste	Pallets to be returned to the supplier, if possible. Appropriate procurement processes to avoid ordering and delivery of excess materials and supplies	Offsite timber recycling, chip for landscaping, sell for firewood Treated: reused for formwork, bridging, blocking, propping or second-hand supplier Untreated: reused for floorboards, fencing, furniture, mulched second-hand supplier. Remainder to landscape supplies. Reused for similar projects Separate materials requiring offsite recovery	Dispose waste that cannot be reused on site at a licensed facility Recyclable materials will be reused onsite or sent to licensed facility for recycling
Waste oils, fuels, lubricants, and chemicals	Hazardous waste	Conduct refuels and maintenance activities away from receptors, signage/labelling, on-site spill kits, adhere to site Spill Management Plan	Dangerous Goods Containers, waste drums, other appropriate storage	Transport to comply with the transport of Dangerous Goods Code, spill kits consistent with Australian Standards.
Paper, cardboard, and co-mingled recycling	General solid waste (non-putrescible)	Procurement of products delivered in reusable or returnable containers	Separation and storage of recyclables in designated bins in waste storage area	Collected by licensed contractor and taken to offsite licensed material recovery facility
Generated waste	General solid waste (putrescible)	-	Store in closed bins for transport to disposal	Collected by a licensed contractor and disposed of at landfill

Waste Types and Activities	NSW EPA Waste Pre-Classification	Avoidance and Reuse	Storage and Collection	Disposal
Sewage and greywater from washdown activities and staff amenities	Liquid waste	Wastewater treatment plant	Portable amenities or on-site amenities	Transported off-site or direct to treatment plant

6.12.2.3 Waste Types and Quantities

Waste generated during the site preparation and construction phases are not expected to be in large quantities. Construction of the Project will require heavy vehicles, plant, and equipment for the transportation of components and installation of the components on the site. The Project is likely to require earth-moving equipment for civil and road works, cable trenching equipment, forklifts, and cranes subject to detailed design to install the BESS and complete ancillary works.

The majority of the waste generated through the construction activities of the Project is expected to be derived from site preparation, earthworks, connection of services, and office installation. Additionally minor quantities of waste are expected to be generated from building materials such as concrete, timber, aggregate, scrap metals and packaging. Waste generated through the construction would be managed as per **Table 39**.

6.12.3 Operational Waste Management

6.12.3.1 Overview of Waste Generation during Operations

Waste Types and Quantities

During the operational phase of the Project, operational waste streams are expected to be generated by site workers, as well as materials generated during maintenance of the site, including the following:

- Spent Lithium Iron Phosphate (LFP) batteries;
- General waste (e.g., mixed food scraps, soiled paper and cardboard, non-reusable timber/wood pallets, non-recyclable plastics etc);
- Co-mingled recyclable waste (e.g., aluminium & steel cans, recyclable plastics, glass bottles, scrap metals etc);
- Source-separated organic waste (mainly food waste);
- Source separated paper and cardboard;
- Waste oils and grease (generated from maintenance activities);
- Chemical waste (minor quantities of residual chemicals used in site maintenance activities including paints etc); and
- Sewage/wastewater generated during site operations.

Operations at the project site would involve the activities, waste types and their avoidance, storage, collection, and disposal described in **Table 40** below.

Table 40: Potential Operational Waste Types and their Management

Waste Stream	Activity	EPA Classification	Avoidance and Reuse	Storage and collection	Disposal
General waste including non-recyclable plastics	Office activities	General solid (non-putrescible) waste	-	Store in closed bins for transport to disposal	Collected by a licensed contractor and disposed of at landfill
Comingled containers	Office activities, food and beverage	General solid (non-putrescible) waste	Procurement of products delivered in reusable or returnable containers Food and beverage container return system (deposit on containers)	Placed in bins in designated waste storage area	NSW container deposit scheme 'Return and Earn', container recycling collected by a licensed contractor and disposed of at offsite licensed material recovery facility
Food waste	Food waste such as food scraps generated by staff.	General solid (putrescible) waste	Optimised serving sizes.	Separation of food scraps, storage in labelled bins. Food waste bins to always have closed lids. Daily collection to avoid odour and vermin.	Food waste collected by licensed contractor on site and composted offsite in licensed facility, no waste sent to landfill
Cardboard	Maintenance parts packaging, office activities	General solid (non-putrescible) waste	-	Separation and storage of corrugated cardboard in designated bins in waste storage area Appropriate compaction to maximise the space in the bins	Cardboard recycling collected by licensed contractor and taken to offsite licensed material recovery facility
Office paper	Office activities	General solid (non-putrescible) waste	Reduce printing on site Procurement of recycled paper	Separation and storage of paper in designated bins in waste storage area	Paper recycling collected by licensed contractor and taken offsite to licensed facility
Plastic film and wrapping	Plastic film and wrapping from maintenance parts packaging	General solid (non-putrescible) waste	Implement procurement management measures to minimise ordering products wrapped in plastic film	Separation and storage of plastics in designated bins in waste storage area	Plastic recycling collected by licensed contractor and taken to offsite licensed facility

Waste Stream	Activity	EPA Classification	Avoidance and Reuse	Storage and collection	Disposal
LFP Batteries (LiFePO4)	Spent LFP batteries during the BESS operation	Hazardous waste	-	Storage of batteries in appropriate sealed containers for collection	Waste transported to licensed recycling facility by licensed contractor. Batteries returned to manufacturer.

Operational Waste Estimates – Onsite Staff

Waste generation rates during the operational phase of the Project are dependent on the number of fulltime equivalent employees, the nature of site maintenance activities, and other site-specific factors. Estimates of anticipated waste generation for the broader streams at the proposed plant have been based on generic rates presented in the Waste Flows in the Victorian Commercial and Industrial Sector Report (SRU and Sustainability Victoria, 2013). These estimates have been based on typical waste generation rates per permanent equivalent fulltime employee (EFTE) using the generic rates below:

- General waste generation rate (assuming source separation of organic waste) – 450 kg/EFTE/year;
- Recyclable waste generation rate – 800 kg/EFTE/year; and
- Organic waste generation rate – 250 kg/EFTE/year.

Quantities for the other waste streams would be determined during operation of the project and would be managed according to a waste management plan developed as part of the OEMP.

Based on the project information of 333 operating days per year and assumption of one operational staff on site, the estimated quantities for onsite staff wastes anticipated during operation of the Project is as follows:

- General Waste (assuming source-separation of organics) – approximately 2 kg/day;
- Co-mingled recyclable waste – approximately 3 kg/day;
- Source-separated organics – approximately 1 kg/day; and
- Source separated paper and cardboard – minor quantities.

Operational Waste Estimates – LFP Batteries

The Project during its operational phase will utilise 4,992 battery packs contained in 112 SolBank units (each unit containing 48 battery packs). Based on the manufacturer's specifications and similar projects, the typical lifespan of LFP battery is estimated to be 15-20 years. BESS components may require maintenance of replacement during its operation.

LFP batteries should be collected and recycled of by a licensed waste contractor to a facility lawfully permitted to accept this type of waste. Alternatively, the battery supplier should be consulted on whether batteries could be returned and repurposed.

LFP batteries and other BESS components management methods would be specified in the Waste And Resources Environmental Management Plan (WREMP) , which will be prepared as part of the Project OEMP.

6.12.4 Decommissioning Waste Management

Waste types and quantities generated during the decommissioning phase of the Project would be managed similarly to construction phase, and in accordance with the waste hierarchy to avoid, reduce, re-use, recycle, and recover materials where possible, through effective design and planning.

The decommissioning phase is anticipated to generate waste such as LFP batteries and associated infrastructure (cabling, inverters, transformers, and other components). The majority of materials are anticipated to be reused or recycled in a facility lawfully licensed to accept these waste types. Any waste that cannot be reused or recycled, would be collected by a licenced contractor and disposed of in an appropriate lawfully licensed facility to accept it.

An updated investigation of opportunities and feasibility of recycling of batteries would also be undertaken. As far as practical the batteries within the BESS would be recycled at approved battery recycling facilities, or subject to confirmation, could be returned to the original equipment manufacturer for refurbishment and recycling. Where spent batteries are unable to be recycled, they would be disposed of at a suitably licensed facility.

6.12.5 Mitigation and Management Measures

Waste and resource use both have the potential to impact resource efficiency for the Project and generate greenhouse gas emissions. These waste streams include liquid and solid waste generated by:

- Excavation and earthworks;
- Water used for dust suppression;
- Wastewater, stormwater and sewage;
- Maintenance of construction plant and machinery;
- Office activities; and
- Decommissioning.

Table 41 provides a summary of the potential impacts from waste generated during construction and operation and the associated mitigation measures.

A WREMP and OEMP would be prepared before main construction works and operation of the development commenced.

The plans would collate measures to manage waste and avoid, mitigate, and manage impacts to human health and the environment. The plans would define processes to track waste quantities, roles and procedures for the handling of waste at the project site, and processes for the continual improvement of project waste management.

The plans would collate measures to manage resource consumption and waste generation and would be developed in consultation with the relevant authorities including the NSW EPA. The measures contained in the waste management plan would reflect the waste management hierarchy.

Table 41: Impact and Mitigation Measures

Potential impact/Issue	Phase	Management and Mitigation Measures
Reuse and recycling	Construction, Operation, Decommission	• Reuse of waste streams including sand, soil, concrete and fittings.

Potential impact/Issue	Phase	Management and Mitigation Measures
		• Recycling of waste streams including plasterboard, plastics and timber. • Contract terms with suppliers that specify recyclable content and returnable packaging. • Co-operation in stewardship programs for compatible waste streams including pallets expansion of the current collection with additional waste streams such as plastic film derived from packaging.
Waste recovery	Construction, Operation, Decommission	Measures to recover and treat waste will include recovery of compatible waste including oils, solvents, plasterboard, plastics, timber, food and co-mingled containers.
Waste Storage and Disposal	Construction, Operation, Decommission	A central waste area would be established during construction, at which waste and recyclables would be stored. Some materials would be stored in stockpiles while others would be stored in bins. Stockpiles and bins would be appropriately labelled, managed and monitored. Waste and recyclables would be collected by a licensed contractor for offsite recycling. Residual waste that cannot be avoided, reduced, reused, recycle, recovered or treated will be collected by a licensed contractor for disposal at a licensed facility.
Waste misclassification resulting in missed opportunities to maximise resource recovery and recycling	Construction, Operation, Decommission	All waste would be assessed, classified, managed and disposed of if reuse is not possible, in accordance with NSW EPA's *Waste Classification Guidelines 2014* and the POEO Act.
Waste spilled while bins are being moved	Construction, Operation, Decommission	Use appropriate bins with close-fitting lids, regular maintenance, and cleaning of bins, moving bins outside of peak hours wherever possible, proper and safe movement of bins.
Odour issues related to general and food waste stored on site	Operation	• Use of appropriate bins with close-fitting lids, bins washed and maintained, avoid overfilling of bins, regular collection of bins, waste storage area located away from public areas and kept clean and tidy. • Waste and recycling storage areas would be designed to be in line with relevant NSW guidelines.
Attraction of vermin and pest in the central waste storage area to general waste bins	Construction, Operation	• Use of appropriate bins with close-fitting lids, bins washed and maintained, avoid overfilling of bins, regular collection of bins, waste storage area kept clean and tidy. • Implementation of Vermin Management Plan if required.
Fire hazard	Construction, Operation, Decommission	Bins kept in secure area or cage.. Fire extinguisher and other protection measures provided.
Vandalism	Construction, Operation	Bins kept in secure area or cage. Compactors secured with only authorise people allowed access.
Generation of asbestos waste or other hazardous waste	Construction, Operation	Hazardous wastes or asbestos identified during construction and operation will be managed lawfully.
Land, surface, and groundwater contamination, transportation, and disposal of solid wastes	Construction, Operation, Decommission	A WREMP contained in the OEMP would include methods for managing wastes.
Noise impacts associated with waste	Construction, Operation, Decommission	• Provision of adequate storage onsite to minimise traffic movements.

Potential impact/Issue	Phase	Management and Mitigation Measures
collection, movement, and transport		• Scheduling waste and residues collection at approved hours.
Visual amenity impacts resulting from waste storage and movements at the project site (e.g., bins storage, collection, and transport)	Construction, Operation	Ensuring dedicated waste management areas that would be enclosed within the site boundary
Offsite air, land, and water pollution due to windblown wastes following inappropriate storage, handling, and transportation of waste, including human health exposure risk	Construction, Operation, Decommission	Waste would be separately collected and transported by licenced waste contractors and disposed of at appropriately licensed disposal or recycling facilities

6.12.6 Conclusion

The desktop assessment prepared for the Project concluded that the Project is anticipated to produce acceptable quantities of waste during the site preparation, construction, operation, and decommissioning phases. Waste generated during all phases of the Project would be appropriately managed in accordance with relevant NSW waste management guidelines and regulations.

6.13 Hazard and Risk

This section presents the findings of a Hazard and Risk Assessment (SLR Consulting, 2024) (HRA) prepared in response to the SEARs. The HRA includes a detailed analysis of the existing environment and proposed operation and construction and outlines the methodology and criteria utilised to form an assessment of the Project. The HRA is located in **Appendix P.**

6.13.1 Existing Environment

The nearest sensitive receivers are as identified in **Figure 6** of this EIS and are summarised in **Table 12.**

6.13.2 Preliminary Risk Screening

Preliminary risk screening of the proposed development Project is required under the Resilience and Hazard SEPP to determine the need for a preliminary hazard assessment (PHA). The preliminary screening assesses the storage of specific dangerous goods classes that have the potential for significant, off-site effects. Specifically, the assessment involves the identification of classes and quantities of all dangerous goods to be used, stored, or produced on site with respect to storage depot locations as well as transported to and from the site.

As detailed further in Chapter 3 of the HRA (SLR Consulting, 2024), the Project would not require toxic chemicals or processes to be involved in the construction of any Project component. Dangerous goods present on-site during the construction phase are expected to consist of:

- Fuel for use by construction plant and equipment, which will be stored on-site; and

- Tiny amounts of clinical waste stored safely by medical or first aid staff at the Project first aid station, to be disposed of at the nearest district hospital or another suitable facility as required.

Regulated substances expected to be stored on-site (for maintenance, repair, emergency, etc, purposes) during construction include fire extinguishers, machine oils and lubricants, hydraulic fluid, and spare (emergency) fuel, which will be stored in a properly maintained (and code-compliant) storage area with suitable signage, details of personal protective equipment (PPE) requirements if relevant, etc.

Maintenance of the Project site will require vegetation throughout to be kept low, both for occupational health and safety reasons and fire safety. In relation to such maintenance, if any herbicides are used, the Project is committed to only using general use, over the counter herbicides as opposed to restricted use herbicides sometimes used in intensive commercial operations where such herbicides require a special restricted use license. Similarly, if a growth regulator is used in order to slow down vegetation growth, only commonly used products will be chosen such as those regularly used on highway roadsides, golf courses, etc.

The transformers that form part of the BESS facility contain transformer oil for insulation and cooling, however toxic Polychlorinated biphenyl (PCBs) are no longer used as a cooling fluid; instead, non-toxic mineral or biodegradable oils are used.

No hazardous chemicals will be produced during operation of the facility, and the decommissioning phase of the Project will mirror the Construction phase in terms of materials and equipment activities.

The dangerous goods that will require transportation and storage at the Project site are detailed in Tables 2 and 3 of the HRA (SLR Consulting, 2024). The final quantity and transportation parameters of the materials listed in will be confirmed during detailed design however as currently foreseen, they do not exceed the relevant storage (or transport) thresholds.

The storage and handling of dangerous goods to be used or stored at the facility and transported to/from the facility is not considered potentially hazardous with regards to the screening thresholds contained in the Resilience SEPP. Further detailed analysis via a PHA is therefore not required.

The Project's BESS units are battery powerpacks consisting of lithium ion batteries. Lithium ion batteries are classed as Class 9 Miscellaneous Dangerous Substances and articles, which are excluded from the Resilience and Hazard SEPP screening process. However, the hazards associated with these batteries mandate that a PHA is required to further assess the hazards and risks associated with the lithium ion batteries.

6.13.3 Preliminary Hazard Analysis

Where the Resilience and Hazard SEPP identifies a development as potentially hazardous and/or offensive, developments are required to undertake a PHA to determine the level of risk to people, property and the environment at the proposed location and in the presence of controls, and therefore a PHA has been completed in accordance with *Hazardous Industry Planning Advisory Paper No.6 - Guidelines for Hazard Analysis* (DOP, 2011). Detailed methodology for the PHA is contained within Section 4.1 of the HRA (SLR Consulting, 2024).

Potentially hazardous events or scenarios were evaluated to establish if further comprehensive qualitative analysis was required. Details of hazardous events, causes, consequences, and controls are detailed in Table 4 of the HRA (SLR Consulting, 2024), with a summary as follows:

- Bushfire;
- BESS unit explosion and/or thermal runaway reaction;
- Fire starting onsite;
- Exposure of equipment to high voltage;
- Vehicle collision onsite;
- Transformer oil leakage;
- Security breach;
- Damage due to lightning strike;
- Flooding; and
- Exposure to electromagnetic fields (EMF).

Risk levels that are acceptable (less than high) in accordance with the risk matrix below in **Table 42** are noted as being adequately addressed via standard engineering design approaches, adherence to the relevant design codes, etc. and do not require further examination in the PHA. Risk levels that are deemed high or greater are noted as requiring further detailed management and mitigation measures.

Table 42: Risk Matrix

Likelihood	Consequence				
	Low	Minor	Medium	Major	Catastrophic
Almost certain	Medium	High	**Very High**	**Extreme**	**Extreme**
Likely	Medium	Medium	High	**Very High**	**Extreme**
Possible	Low	Medium	Medium	High	**Very High**
Unlikely	Low	Low	Medium	Medium	High
Rare	Low	Low	Low	Medium	Medium

The following potential hazards could not be eliminated through first review as resulting in a risk level of high and required further examination:

- Hazards associated with bushfire;
- Hazards associated with lithium ion batteries in the BESS, specifically overheating and fire; and
- Hazards associated with exposure to electromagnetic fields (EMF).

6.13.3.1 Bushfire Risk and Management Assessment

A key input in the assessment of bushfire risk is to determine the Bushfire Attack Level (BAL) of the Project site as per Australian Standard AS3959:2018 *Construction of Buildings in Bushfire-Prone Areas* (AS3959:2018). The five steps involved in assessing a site-specific BAL as per AS3959:2018 are as follows:

- Step 1 – Fire Danger Index (FDI);
- Step 2 – Surrounding Vegetation Classification;
- Step 3 – Site to Vegetation Distance;
- Step 4 - Ground Slope Under Surrounding Vegetation; and
- Step 5 – Compute the Project Specific BAL.

Detailed results of the Project site BAL are contained within Chapter 5 of the HRA (SLR Consulting, 2024) and are summarised as follows:

- The FDI for the Panorama BESS site was determined to be 80, and the surrounding vegetation classification was assessed to be within the 'Open/Sparse Woodland and Grassland' category; and
- Distance of site to vegetation ranges from 22 to 29 m sloping from flat (0°) at 22 m to down slope (10°) at 29 m, which is excluded from consideration as low threat vegetation under the AS3959:2018 if under 100 m.

Therefore, the bushfire risk assessment concluded:

- The resulting BAL for the Project site is BAL-12.5 (worst-case in all directions) which is the lowest BAL requiring specific construction action for bushfire management as per AS3959:2018; and
- The maximum radiant heat flux at the nearest site boundary is 9.9 kW/m^2.

The PHA for bushfire risk concludes that bushfire risk issues can be adequately mitigated, and accordingly, the BESS facility will be adequately protected from the threat of a bushfire event.

On the basis of the Risk Matrix shown in Figure 5 of the HRA (SLR Consulting, 2024), the residual risk associated with bushfire fire hazard is assessed to be **low**, and hence adequately mitigated.

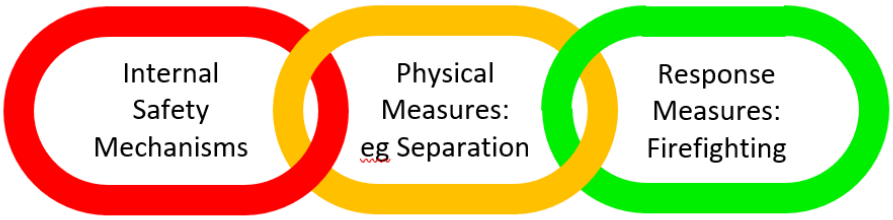
6.13.3.2 BESS Risk and Management Assessment

BESS-related fire hazards arise from the following two broad areas:

- Risks associated with non-battery fire events such as wiring issues, electrical safety system failures, and mechanical interference: and
- Thermal runaway caused by manufacturer defects or mechanical damage, over charge or discharge, etc. that result in heat and flame.

A key input in the assessment of BESS risk is to examine the three key links in managing internal fire-related risks within a BESS facility, as illustrated in the Fire Response Chain shown in **Figure 25** below.

Figure 25: Key Strategic Links in Managing BESS Fire-Related Risks – the Fire Response Chain



Link 1 – Internal Safety Mechanisms

An examination of the internal safety mechanisms of the Victorian Big Battery (VBB) fire that occurred in July 2021 as a case study was completed as an assessment for Link 1. The VBB fire event proceeded in accordance with its fire protection design and pre-incident planning and it presented no unusual, unexpected, or surprising characteristics (i.e. explosions) or resulted in any injuries to site personnel, the general public, or

emergency responders. The fire was isolated to the units directly involved and had minimal environmental impact, and it did not adversely impact the electrical grid and had appreciably short mission interruption.

It is understood that monitoring and supervision procedures during commissioning and unit-to-unit wall/roof vent fire mitigation measures have been addressed in the latest SolBank BESS unit design to address Link 1.

Link 2 – Physical Measures

To complete the Link 2 assessment, literature search of worst-case BESS fire simulations was completed which indicate the following approximate minimum separation distances:

- 6 m - minimum distance from either the front, end or side walls of any BESS battery pack to the associated enclosure fence perimeter (based on the 4.7 kW/m^2 criterion);
- 3 m - minimum distance between adjacent BESS battery pack side walls (based on the 12.6 kW/m^2 criterion); and
- 4 m - minimum distance between adjacent BESS battery pack front and end walls (based on the 12.6 kW/m^2 criterion).

The proposed SolBank BESS units have been subject to fire testing under UL 9540A ANSI/CAN/UL *Standard for Test Method for Evaluating Thermal Runaway Fire Propagation in Battery Energy Storage System* (UL 9540A). On the basis of the UL9540A certified unit-to-unit separation distances noted above, the space allocated for the 112 SolBank BESS Units (~9,000 m^2) should be more than sufficient to accommodate the capacity proposed for the site.

Link 3 – Response Measures

Firefighting measures under Link 3 have been addresses as a separately identified hazard in Section 6.13.3.1 above.

The PHA for BESS risk concludes that BESS-related fire risk issues can be adequately mitigated, and accordingly, the BESS facility will not itself pose an additional fire hazard that has the potential to increase the extent or severity of a bushfire event on surrounding property, people, and the environment. Additionally, the proposed BESS capacity can be comfortably accommodated within the site space provided.

On the basis of the risk matrix above **Table 42**, the residual risk associated with bushfire fire hazard is assessed to be **low**, and hence adequately mitigated.

6.13.3.3 EMF Risk and Management Assessment

The Project's electrical equipment will comply with relevant Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) and International Commission on Non-Ionizing Radiation Protection (ICNIRPP) standards for exposure to electromagnetic radiation.

The magnetic fields produced by all of the equipment within the proposed BESS facility should be comfortably below the exposure limits detailed Table 10 of the HRA (SLR Consulting, 2024) even at close distances from the relevant equipment and certainly at background levels at the nearest relevant perimeter fence of the Project.

The only measurable EMFs present outside the border of the Project site would almost entirely be from the existing transmission lines which run along the north-eastern boundary of the broader Project site.

During the Project construction phase, construction staff may be intermittently exposed to EMFs when working near selected equipment (e.g. inverters) once testing of the BESS facility begins. Potential EMF impacts are possible, in particular for sensitive workers (e.g.

workers with implanted medical devices), however these impacts are likely to be short term and negligible and will be managed according to the Project's Occupational Health and Safety Management Plan.

There is potential for the occurrence of electric shock to anyone entering any of the Project's electrical cabinets such as combiner boxes, disconnect switches, inverters, or transformers.

The PHA for EMF risk concludes that EMF fire risk issues can be adequately mitigated, for both the public and site workers.

On the basis of the risk matrix above **Table 42**, the residual risk associated with EMF risk is assessed to be **low**, and hence adequately mitigated.

6.13.4 Mitigation and Management Measures

6.13.4.1 Bushfire

Asset Protection Zone

The recommended Asset Protection Zone (APZ) for the proposed BESS facility is illustrated in Figure 10 of the HRA (SLR Consulting, 2024). The recommended APZ creates a total separation from the nearest piece of equipment on the site to the nearest vegetation of the following: 22 m to the east (upslope vegetation), 25 m to the north and south (gentle down slope vegetation), and 29 m to the west (slightly greater downslope vegetation).

The APZ is located wholly within the broader Project site, is situated on flat cleared ground, and will provide adequate total site access for firefighting personnel and equipment. A management regime will be established following construction to ensure the ongoing integrity of the APZ.

Construction Standards and Design

The Project should comply with the relevant construction requirements of AS3959:2018 as a BAL-12.5 development.

Access

Ensure that the following Rural Fire Service (RFS) requirements as detailed in Section 5.8 of the HRA (SLR Consulting, 2024) are met:

- BESS site firefighting access roads should be two-wheel drive, all-weather roads and appropriately sign-posted.
- Road widths accessing the site and within the site must be sufficient to accommodate firefighting vehicles. Perimeter roads are to be provided with a minimum clear width of 8 m. Non-perimeter roads are to be provided with a minimum clear width of 5.5 m.
- An unobstructed clearance height of 4 m should be maintained above all access roads including clearance from building construction, archways, gateways, overhanging structures and vegetation overhanging roads.
- In relation to vehicle turning circle requirements, any curved carriageways should be constructed using the minimum swept path dimensions shown in Table A3.2 of the above RFS 2019 Planning Guideline.
- Dead ends that are longer than 200 m must be provided with a turning head area that avoids multipoint turns. "No parking" signs are to be erected within the turning head. Example turning heads and minimum dimensions are provided in Figure A.3 of the above RFS 2019 Planning Guideline.

- Passing bays should be provided every 200 m. Where required, passing bays shall be 20 m in length and provide a minimum trafficable width at the passing point of 6 m.
- Maximum grades for sealed roads should not exceed 15° with an average grade of not more than 10°.

Where practical and feasible, a “back-up” secondary access road to a facility is recommended for consideration. The Proponent has committed to the road carrying capacity, turning circles, etc, to be designed for fully loaded firefighting vehicles of up to 23 tonnes and where practical and feasible, a ‘back-up’ secondary access road to a facility is recommended for consideration.

Water Supply

Ensure that the following water tank requirements as detailed in Section 5.9 of the HRA (SLR Consulting, 2024) are met:

- Is clearly identified by directional signage at all access points to the facility.
- Must be readily accessible by firefighting appliances.
- Should be located as close as possible to the BESS facility security perimeter.
- Shall have a volume as specified in AS 2304:2011.
- Shall be constructed of concrete or metal; all connecting above-ground water service pipes and taps being metal.
- Will be located in an area such that medium rigid vehicles (eg a 15-tonne fire appliance) have clear access within 4 m of the tank and with sufficient parking adjacent for other emergency service vehicles.
- If serviced by a rural fire brigade, is provided with IPA-rated rural fire brigade tank fittings including a 65 mm Storz outlet valve and relevant coupling. Ball valves and pipes should be adequately sized for water flow and shall be constructed of metal. The supply pipes from the tank to the ball valve should have the same bore size to ensure flow volume.
- Underground tanks should have an access hole of 200 mm to allow tankers to refill direct from the tank.
- Raised tanks have their stands constructed from non-combustible material or bush fire-resisting timber (see *Appendix F* AS 3959).

The Proponent has committed to the following:

- Ensuring that the above water tank requirements are met.
- Providing a minimum 20,000 L dedicated water supply for firefighting purposes.

Landscape Management

The critical areas for landscape management at the site are the APZ, and the vegetation immediately surrounding the Project site. A Bushfire Management Plan (BMP) for the facility should be prepared as per the following recommendations outlined in Section 5.12 of the HRA (SLR Consulting, 2024):

- Contain a provision preventing any vegetation from taking hold within the proposed APZ zone around the site, thereby reducing the bushfire hazard risk and maintaining adequate access to firefighting personnel and equipment.

- Contain a provision pertaining to the management of the vegetation surrounding the site, specifically limiting the height of pasture species surrounding the site to less than 1 m.

The BMP for the facility should include measures for the management of bushfire risk initiators across the construction, operation, and decommissioning phases of the Project inclusive of storage of fuels/chemicals, lightning strikes, ground cover within the Project site, and ignition of electrical equipment.

6.13.4.2 EMF

The detailed design of the facility will be developed in accordance with Energy Networks Association (ENA) *ENA Policy Statement on Electric and Magnetic Fields* adopted by the ESAA Board in 1991 and reconfirmed by the ENA EMF Committee, March 2006; and Nutall, K., Flanagan, P. and Melik, G., *Prudent Avoidance Guidelines for Power Frequency Magnetic Fields*, 23rd Annual Conference of the Australasian Radiation Protection Society, 1998.

The integrity of all Project site security fencing will also be maintained through the lifetime of the Project to ensure adequate exposure separation for all members of the public.

Electrical Shock and Arc Flash

An Engineering Operation and Maintenance Management Plan should be prepared for the facility to include all measures aimed at managing hazards and risks, including specific targeted measures detailed in the Project Emergency Response Plan:

- Adequate warning signs throughout the facility, based on the level of danger posed by the relevant voltages and current involved, especially focussed on first responders in an emergency situation, e.g. firefighters attending the site, hazmat attendees, etc;
- Instructions available to all authorised personnel (including firefighters, etc) regarding the level of personal protective clothing required to be worn, respiratory protection required, minimum evacuation zone distances, etc;
- Instructions covering safe shut-down and isolation procedures for all equipment to be readily available for emergency service personnel as well as on-site staff;
- Security fencing around individual equipment items as required (based on risk principles) and the entire site itself, properly maintained throughout the life of the Project, all with adequate hazard warning signs; and
- A safety protocol for the site which prevents untrained individuals from inspecting, testing, or repairing any aspect of the facility's electrical equipment and systems.

6.13.5 Conclusion

The HRA (SLR Consulting, 2024) prepared for the Project concluded that the residual risks associated with all identified hazards as part of the PHA being bushfire, BESS fire, and EMF are assessed to be low, and hence adequately mitigated with the implementation of recommended management measures.

6.14 European Heritage

This section presents the findings of a desktop historic (European) heritage assessment prepared in response to the SEARs. The desktop historic (European) heritage assessment includes an analysis of the existing environment and proposed operations and outlines the methodology and criteria utilised to form an assessment of the Project.

6.14.1 Existing Environment

The following databases were searched on 18 May 2023 to identify heritage-listed items within or in close proximity to the Project site:

- Commonwealth Heritage List;
- State Heritage Register; and
- Bathurst LEP.

The Project is not located in proximity to any local heritage item, with the nearest identified local heritage items being Item I131 ‘Glenroy (former convent)’ and Item C2 ‘Evans Plains Conservation Area’ which are located approximately 70 metres to the west of the broader lot and approximately 120 m to the west of proposed works associated with the formalisation of the existing access road on Lot 2 DP 864272. As a result of the distance, small scale of works and with the implementation of appropriate mitigation measures, no impacts are anticipated to this local heritage item.

No State listed heritage items or places are located in the vicinity of the Project site.

6.14.2 Construction Impact Assessment

Given the lack of any known items of listed European heritage within proximity to the Project site, potential impacts during the construction phase are considered negligible.

6.14.3 Operational Impact Assessment

Given the lack of any known items of listed European heritage within proximity to the Project site, potential impacts during the operational phase are considered negligible.

6.14.4 Mitigation and Management Measures

In order to mitigate against potential harm to unknown European heritage or archaeological values within the project site, the following mitigation measures are recommended:

If European archaeological relics are found during the works, all works in the immediate vicinity are to cease immediately and Heritage NSW should be notified. A qualified archaeologist is to be contacted to assess the situation and consult with Heritage NSW regarding the most appropriate course of action; and

Should the Project be altered significantly from the proposed design, then a reassessment of the heritage/archaeological impact may be required.

6.14.5 Conclusion

The desktop European heritage assessment prepared for the Project concluded that the historic heritage impacts during the construction, operational, and decommissioning phases are considered to be negligible with the implementation of the proposed mitigation measures.

6.15 Cumulative Impact Assessment

The *Cumulative Impact Assessment (CIA) Guidelines for State Significant Projects* (DPIE, 2021) require consideration of a Project together with the impacts of other relevant future and existing projects in order to determine the potential cumulative impact. The CIA (DPIE, 2021) indicates the following future projects should be considered in the cumulative impact assessment:

- Changes to existing projects (expansion, modification, closure);
- Approved projects (approved but construction has not commenced);
- Projects under assessment (application for the project has been exhibited and is currently under assessment); and
- Related development (development that is required for the Project but subject to separate assessment).

A search of the NSW Major Projects Portal and Planning Panel Portal and TfNSW Major Projects Hub on 6 February 2023 found that the Project may have interactions the following projects in the vicinity of the Project site.

6.15.1 General Potential Cumulative Impact Assessment

The construction of the Project has been determined to have low cumulative impact on Aboriginal cultural material due to low artefact densities identified within the Project site (refer to **Section 6.3.2**), and therefore no cumulative impacts to Aboriginal cultural heritage are anticipated in regards to surrounding projects.

Additionally, the two Transgrid transformers and associated cooling fans were included in the noise modelling completed for the Project (refer top Section 5.4.1 of the NVIA (SLR Consulting, 2024) located in **Appendix F**). Operational emissions of BESS with the addition of the Transgrid substation was assessed as compliant with the *Noise Policy for Industry* (NPfI) (EPA,2017) requirements.

6.15.2 Bathurst Second Circuit (SSD-9681)

The Bathurst Second Circuit is located at Mount Panorama along Mid Western Highway to the immediate south-east of the broader Project lot. The application proposes the construction of a second motor racing circuit, spectator zone, flexible event space, automotive facilities (including a driver experience centre) and provisions for a future hotel.

The Request for SEARs for the SSD was lodged on 16 October 2018 and SEARs were issued for the project on 8 November 2019. No further progress has been made on the application.

The construction and seasonal operation of the Bathurst Second Circuit would introduce heavy and light vehicle traffic to the local road network which may interact with the traffic introduced by the Project during construction if the application progresses concurrently with the Project. Additionally, noise and vibration associated with operation of the Bathurst Second Circuit may introduce cumulative seasonal noise impacts during the limited main events and number of smaller events that take place at the existing circuit.

6.15.3 Glanmire Solar Farm (SSD-21208499)

The Glanmire Solar Farm is located at 4823 Great Western Highway, Glanmire which is approximately 16.8 kilometres (km) east of the broader Project lot. The application proposes the development of a 60 megawatt (MW) solar farm, associated infrastructure and battery storage.

The Request for SEARs for the SSD was lodged on 4 June 2021 and SEARs were issued for the project on 23 September 2021. An EIS for the application was lodged with DPHI on 26 October 2022 and a Request for a Response to Submissions was prepared for applicant consideration on 20 December 2022.

The construction of the Glanmire Solar Farm would introduce heavy and light vehicle traffic to the local and regional road network which may interact with the traffic introduced by the Project during construction if the application progresses concurrently with the Project.

6.15.4 Bathurst Integrated Medical Centre (SSD-30394840)

The Bathurst Integrated Medical Centre is located at 250 Howick Street and George Street, Bathurst which is approximately 5.6 km north-east of the broader Project lot. The application proposes the construction and use of an integrated medical facility providing hospital, medical centre and education uses and ancillary multilevel carpark to service the medical facility and other surrounding uses within the Bathurst Town Centre.

The Request for SEARs for the SSD was lodged on 13 October 2021 and SEARs were issued for the project on 26 October 2021. No further progress has been made on the application.

The construction and operation of the Bathurst Integrated Medical Centre would introduce heavy and light vehicle traffic to the local road network which may interact with the traffic introduced by the Project during construction if the application progresses concurrently with the Project.

6.15.5 St Stannislaus College Major Upgrade and Refurbishment (PPSWES-171)

The St Stannislaus College Major Upgrade and Refurbishment project is located at 220 Bentinck Street, Bathurst which is approximately 4.5 km east of the broader Project lot. The application proposes the partial demolition, and alterations and additions to the existing educational facility.

The referral to the Western Regional Planning Panel was made on 1 March 2023, and is currently under assessment.

The construction of the St Stannislaus College Major Upgrade and Refurbishment project would introduce heavy and light vehicle traffic to the local road network which may interact with the traffic introduced by the Project during construction if the application progresses concurrently with the Project.

7.0 Justification

This section provides a justification and evaluation of the Project and conclusion to the EIS. It includes discussion of the design of the Project, taking into consideration the economic, environmental, and social impacts and opportunities of the development. This section outlines consistency of the project with its strategic context and it's compliance with relevant statutory requirements.

7.1 Design of the Project

A number of sites were considered during the site selection process for the Project, with regard made to the following:

- Appropriate zoning of land to facilitate development consent for a BESS;
- Availability of existing access to the site via an establish road network;
- Proximity to the existing TransGrid substation, to minimise impacts of easements;
- Selection of a construction location that would avoid and/or minimise impacts to high quality native vegetation and protected fauna;
- An area that would not result in, or be subject to, potential flood impacts; and
- Minimising impacts to surrounding privately or publicly owned land and residential dwellings due to noise and visual amenity concerns.

At this location, 19 sensitive receivers were identified within a 1-kilometre (km) buffer around the site, all of which are residential dwellings, with no commercial or education land uses identified. The Operational noise assessment identified compliance with the Project noise trigger levels (PNTL) at all identified sensitive receivers. The Project was sited to avoid the removal of any native vegetation, and the current proposed layout and location of the BESS facility has been amended during the EIS preparation process through an iterative design process to avoid impacts to biodiversity values.

In this regard, the original concept layout included placement of the BESS facility partly within an existing patch of native vegetation, and was subsequently moved west to avoid the patch of native vegetation, thereby avoiding any direct impacts to biodiversity values on the broader Project site. The same process was followed to realign the trenched 132 kV underground cable to avoid damage to the root systems of planted trees within Lot 521 DP 603541 (TransGrid substation).

7.2 Consistency with Strategic Context

As the Project would include the construction and operation of a BESS to further develop the renewable energy power supply network of NSW, the Project would directly contribute to increasing the capacity and resilience of the State and further the State's efforts to reach net-zero emissions by 2050.

The Project would contribute directly to the goals of the Central-West Orana REZ through the investment in renewable energy storage and the growth of new low carbon industries across the region.

7.3 Statutory Compliance

The Project is deemed to be SSD being an electricity generating works development with a CIV higher than $30 million and is assessed as SSD under the EP&A Act. This EIS has been prepared in accordance with the requirements of the EP&A Regulation and meets the requirements of the SEARs.

The site occurs within the Bathurst LGA and therefore is subject to the Bathurst LEP. The site is located on land zoned 'RU1 – Primary Production' under the LEP. The Project is considered to meet the definition of 'electricity generating works' which is permitted with consent under the LEP.

As demonstrated in **Section 4.0** and **Appendix C**, the proposal is acceptable having regard to the relevant statutory requirements.

7.4 Community Views of the Project

Areas of interest identified within the community around construction impacts of the Project were primarily concerning noise and vibration, traffic and access, land value of nearby residences, fire risk, and visual amenity and heritage. Overall, community views were positive in relation ot the supply of renewable energy storage in the region.

Chapter 5.0 and **Section 6.10** of this EIS contain detailed discussions of the outcomes of community engagement and views.

7.5 Economic, Social, and Environmental Impacts

The Project's purpose and design have been developed to provide a sustainable form of energy production to provide long-term economic, environmental, and social benefits to the Bathurst region and NSW including:

- The production of a renewable baseload power supply to participating to the wider community, thus fulfilling the current obligations of State and Federal renewable energy targets;
- Develop the renewable energy power supply within NSW and increase the energy capacity and resilience of the State and further efforts to reach net-zero emissions by 2050;
- Providing for cleaner reliable electricity generation, while reducing greenhouse gas emissions and the impacts of climate change;
- Increase local employment and investment opportunities during construction;
- Capital investment of $133 million and up to 20 positions during the construction phase and 1 full time position during operations for the local economy;
- The BESS is located along a major transmission route which is in line with the Federal Government's direction to improve the affordability and security of the national energy market while also delivering on international climate commitments;
- Play an important role in providing stability to the NSW energy network by charging up during the day when renewable energy generation is high and then providing that power back to the grid at night to support high demand; and
- Add significant benefits to the NSW electricity grid allowing for the dispatch of energy in accordance with market demand to assist in load leveling and grid support to balance the natural fluctuations in electricity demand throughout the day and reduce congestion on the local grid.

7.6 Project Compliance

Throughout the construction phase, management measures will be implemented via the preparation and adoption of a CEMP, which will consist of a range of supporting sub-plans as identified across the specialist investigations completed to inform the Project.

Operation and monitoring of the facility would be governed by an OEMP that would identify any residual matters requiring ongoing attention during operation, with particular emphasis on fire management and risk management, and landscaping and vegetation management to ensure ongoing compliance with adopted criteria.

The BESS is expected to be operational for a period of approximately 20 years, after which the BESS would be decommissioned as per a Decommissioning Management Plan (DMP) and the infrastructure removed, returning the site to its original use.

7.7 Key Uncertainties

As a result of the technical investigations completed to inform the Project and the mitigation measures proposed to address impacts of construction, operation, and decommissioning of the Project, it is considered that uncertainties are unlikely. All impacts are able to be, or have been, adequately mitigated through the siting and design of the BESS and ancillary infrastructure, as well as on-going management practices and monitoring.

7.8 Ecologically Sustainable Development

The National Strategy for Ecologically Sustainable Development (1992) defines ESD as "using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased."

The EP&A Act utilises the definition of ESD from Part 3, Clause 6(2) of the *Protection of the Environment Administration Act 1991* (POEO Act), wherein ESD can be achieved through the implementation of a set of principles and programs. The Project has been assessed under these principles in the sections below.

The Project is overall considered consistent with the principles of ESD as it does not exploit natural resources unsustainably, has been based soundly on economic and environmental considerations, and the likely environmental impacts of the Project have been identified and are predictable and able to be managed effectively. Furthermore, the Project does not unreasonably affect biological diversity or ecological, and it provides a renewable energy asset for future generations.

7.8.1 The Precautionary Principle

The precautionary principle states that if there are threats of serious or irreversible environmental damage, the lack of full scientific certainty should not be used as a reason for postponing measures to prevent said damage.

Detailed investigations relating to the environmental, heritage, and economic aspects of the Project have been undertaken with the aim to produce an optimal Project design and siting. The Project assessed in this EIS and the supporting technical assessments provides the current optimised Project location, which takes into consideration all physical, environmental, social, heritage, and economic aspects which are required to be addressed.

The Project has been designed and sited to avoid the removal of any native vegetation on the broader site, with vegetation within the Project site containing only exotic pasture species. The current proposed layout and location of the Project has been amended through an iterative design process to avoid impacts to biodiversity values. In this regard, the original concept layout included placement of the proposed battery storage facility partly within an existing patch of native vegetation.

The proposed location of the BESS compound was hence moved west to avoid the patch of native vegetation, thereby avoiding any direct impacts on native vegetation (and on biodiversity values in general). The same process was followed to realign the trenched 132

kV underground cable to avoid damage to the root systems of planted trees within Lot 521 DP 603541 (TransGrid substation).

The result is that for all potential impacts, no serious or irreversible harm will occur to the environment. Therefore, the Project addresses the precautionary principle, as there will be no serious or irreversible environmental damage.

The technical assessments were prepared by qualified and experienced technical specialists relevant to their field. The potential implications of the Project have been understood through the contents of this EIS and accompanying appendices, and the management strategies, mitigation measures, and proposed monitoring activities required to ensure potential impacts are appropriately minimised has also been documented.

7.8.2 Inter-Generational Equity

Inter-generational equity refers to the principle that the current generation should ensure that the health, diversity, and productivity of the environment is maintained or enhanced for the benefit of future generations.

Overall, the Project would provide positive economic outcomes through the proposed employment of a local construction workforce and the Project itself will contribute to public infrastructure and services for future generations.

Potential impacts to cultural heritage have been assessed in consultation with Aboriginal stakeholders.

The environmental, social, cultural, and economic impacts of the Project are described in this EIS. The Project has proposed mitigation measures to manage impacts, and is not predicted to result in significant residual impacts.

7.8.3 Conservation of Biological Diversity and Maintenance of Ecological Values

The third principle of ESD states that the conservation of biological diversity and ecological integrity should be a fundamental consideration in development applications.

The potential environmental impacts of the Project have been detailed throughout this EIS, with mitigation measures detailed.

The Project has been the subject of a thorough ecological assessment as detailed in Section 6.2 and as informed by the BDAR Waiver Report contained in **Appendix G**.

7.8.4 Improved Valuation, Pricing, and Incentive Mechanisms

The final principle of ESD concerns improved valuation and the pricing of environmental resources which establishes the need to determine economic values for services provided by the natural environment.

The development of policy to guide pricing and incentive mechanisms in delivering ecologically sustainable development is the responsibility of governments and regulatory stakeholders.

7.9 Site Suitability

The Project site is considered suitable for the Project following consideration of the following:

- Site history - The Project site largely consists of grassland composed of exotic pasture species with isolated stands of native eucalypt trees, the Project site has been historically cleared for grazing and reducing the potential for environmental and cultural heritage values to be present;

- Land ownership – The landowner has agreed to a lease to the Proponent for the construction and operation of the proposed facility;
- Site topography –The site suitability for the Project has been chosen specifically to ensure minimal impacts to biodiversity values and the surrounding community.
- Proximity to the existing TransGrid substation – To minimise impacts of easements;
- Permissibility – The site occurs within the Bathurst LGA and therefore is subject to the *Bathurst Regional Local Environmental Plan 2014* (LEP). The Project is considered to meet the definition of 'electricity generating works under the LEP and provides that these types of works are permissible with consent, if carried out by any person on land in a prescribed zone. The Site is zoned 'RU1 – Primary Production' and is therefore a prescribed zone; and
- Distance from sensitive receivers - The closest residences are located in the nearby suburb of Robin Hill approximately 1 km to the east and 1.4 km to the north to the nearest residential dwellings; and the suburb of Evans Plains approximately 800 m to the west.

7.10 Project Alternatives

Do Nothing

The 'do nothing' approach would involve not constructing and operating the Project at the site. This option would not align with the range of national and State policies discussed in **Chapter 2.0**, which identify the need to improve energy security and reliability in NSW and transition away from fossil fuel energy towards renewable sources sch as solar and wind. The Project provides 100 MW/200 MWh of power storage to dispatch into the local grid when required to assist with growing energy demands.

Alternative Sites

Alternative sites were not considered sufficient for the purposes of the Project due to unsuitable characteristics including site topography and land use, proximity to an existing substation, landowner discussions for leasing, permissibility, and distance from sensitive receivers.

7.11 Conclusion

Through the implementation of best practice management, the potential environmental impacts associated with the Project can be appropriately managed, which will also address the community concerns and associated social impacts identified during the stakeholder engagement process. Given the net benefit and commitment from Panorama BESS SubCo to appropriately manage the potential environmental impacts associated with the Project, it is considered the Project would result in a net benefit to the region and broader NSW community.

The Project is located within a predominantly rural setting, with surrounding land parcels to the West and South. The current land use cattle grazing improved grass pasture composed of exotic species that is adjacent to the existing TransGrid 132 kV Substation in the north-eastern portion of the site and is separated from sensitive receivers such as residential areas and schools. The site would provide for an advantageous and economically beneficial use of land in a landscape that has a history of electrical infrastructure alongside various rural land uses. The Project would provide both short-term and long-term benefits including supporting a sustainable, green electricity future for NSW, and reducing the price of electricity in NSW, providing major investment in NSW.

Most importantly, the Project will significantly reduce greenhouse gas emissions while providing baseload power, adding to local employment and would contribute directly to the goals of the Central-West Orana REZ through the investment in renewable energy storage and the growth of new low carbon industries across the region.

8.0 References

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Appendix A SEARs Compliance Table

Environmental Impact Statement

Panorama Battery Energy Storage System (BESS)

Panorama BESS SubCo Pty Ltd

SLR Project No.: 660.30234.00000

31 May 2024

Appendix B Maps and Plans

Environmental Impact Statement

Panorama Battery Energy Storage System (BESS)

Panorama BESS SubCo Pty Ltd

SLR Project No.: 660.30234.00000

31 May 2024

Appendix C Statutory Compliance Table

Environmental Impact Statement

Panorama Battery Energy Storage System (BESS)

Panorama BESS SubCo Pty Ltd

SLR Project No.: 660.30234.00000

31 May 2024

Appendix D Community Engagement Table

Environmental Impact Statement

Panorama Battery Energy Storage System (BESS)

Panorama BESS SubCo Pty Ltd

SLR Project No.: 660.30234.00000

31 May 2024

Appendix E Mitigation Measures Table

Environmental Impact Statement

Panorama Battery Energy Storage System (BESS)

Panorama BESS SubCo Pty Ltd

SLR Project No.: 660.30234.00000

31 May 2024

Appendix F Noise and Vibration Impact Assessment (NVIA) (SLR Consulting, 2024)

Environmental Impact Statement

Panorama Battery Energy Storage System (BESS)

Panorama BESS SubCo Pty Ltd

SLR Project No.: 660.30234.00000

31 May 2024

Appendix G Biodiversity Development Assessment Report Waiver (BDAR Report) (SLR Consulting, 2023)

Environmental Impact Statement

Panorama Battery Energy Storage System (BESS)

Panorama BESS SubCo Pty Ltd

SLR Project No.: 660.30234.00000

31 May 2024

Appendix H Aboriginal Cultural Heritage Assessment Report (ACHAR) (Austral Archaeology, 2023)

Environmental Impact Statement

Panorama Battery Energy Storage System (BESS)

Panorama BESS SubCo Pty Ltd

SLR Project No.: 660.30234.00000

31 May 2024

Appendix I Traffic and Transport Impact Assessment (TIA) (SLR Consulting, 2024)

Environmental Impact Statement

Panorama Battery Energy Storage System (BESS)

Panorama BESS SubCo Pty Ltd

SLR Project No.: 660.30234.00000

31 May 2024

Appendix J Landscape Character and Visual Impact Assessment (LCVIA) (SLR Consulting, 2024)

Environmental Impact Statement

Panorama Battery Energy Storage System (BESS)

Panorama BESS SubCo Pty Ltd

SLR Project No.: 660.30234.00000

31 May 2024

Appendix K Surface and Groundwater Assessment (SWGA) (SLR Consulting, 2024)

Environmental Impact Statement

Panorama Battery Energy Storage System (BESS)

Panorama BESS SubCo Pty Ltd

SLR Project No.: 660.30234.00000

31 May 2024

Appendix L Land and Soil Capability Assessment (LSCA) (SLR Consulting, 2024)

Environmental Impact Statement

Panorama Battery Energy Storage System (BESS)

Panorama BESS SubCo Pty Ltd

SLR Project No.: 660.30234.00000

31 May 2024

Appendix M Land Use Conflict Risk Assessment (LUCRA) (SLR Consulting, 2024)

Environmental Impact Statement

Panorama Battery Energy Storage System (BESS)

Panorama BESS SubCo Pty Ltd

SLR Project No.: 660.30234.00000

31 May 2024

Appendix N Social Impact Assessment (SIA) (SLR Consulting, 2024)

Environmental Impact Statement

Panorama Battery Energy Storage System (BESS)

Panorama BESS SubCo Pty Ltd

SLR Project No.: 660.30234.00000

31 May 2024

Appendix O Economic Impact Assessment (EIA) (Gillespie Economics, 2024)

Environmental Impact Statement

Panorama Battery Energy Storage System (BESS)

Panorama BESS SubCo Pty Ltd

SLR Project No.: 660.30234.00000

31 May 2024

Appendix P Hazard and Risk Assessment (HRA) (SLR Consulting, 2024)

Environmental Impact Statement

Panorama Battery Energy Storage System (BESS)

Panorama BESS SubCo Pty Ltd

SLR Project No.: 660.30234.00000

31 May 2024

Appendix Q Estimated Development Cost (EDC) Estimate (Holiis Partners, 2024)

Environmental Impact Statement

Panorama Battery Energy Storage System (BESS)

Panorama BESS SubCo Pty Ltd

SLR Project No.: 660.30234.00000

31 May 2024

Appendix R Community and Stakeholder Engagement Plan (CSEP) (SLR Consulting, 2024)

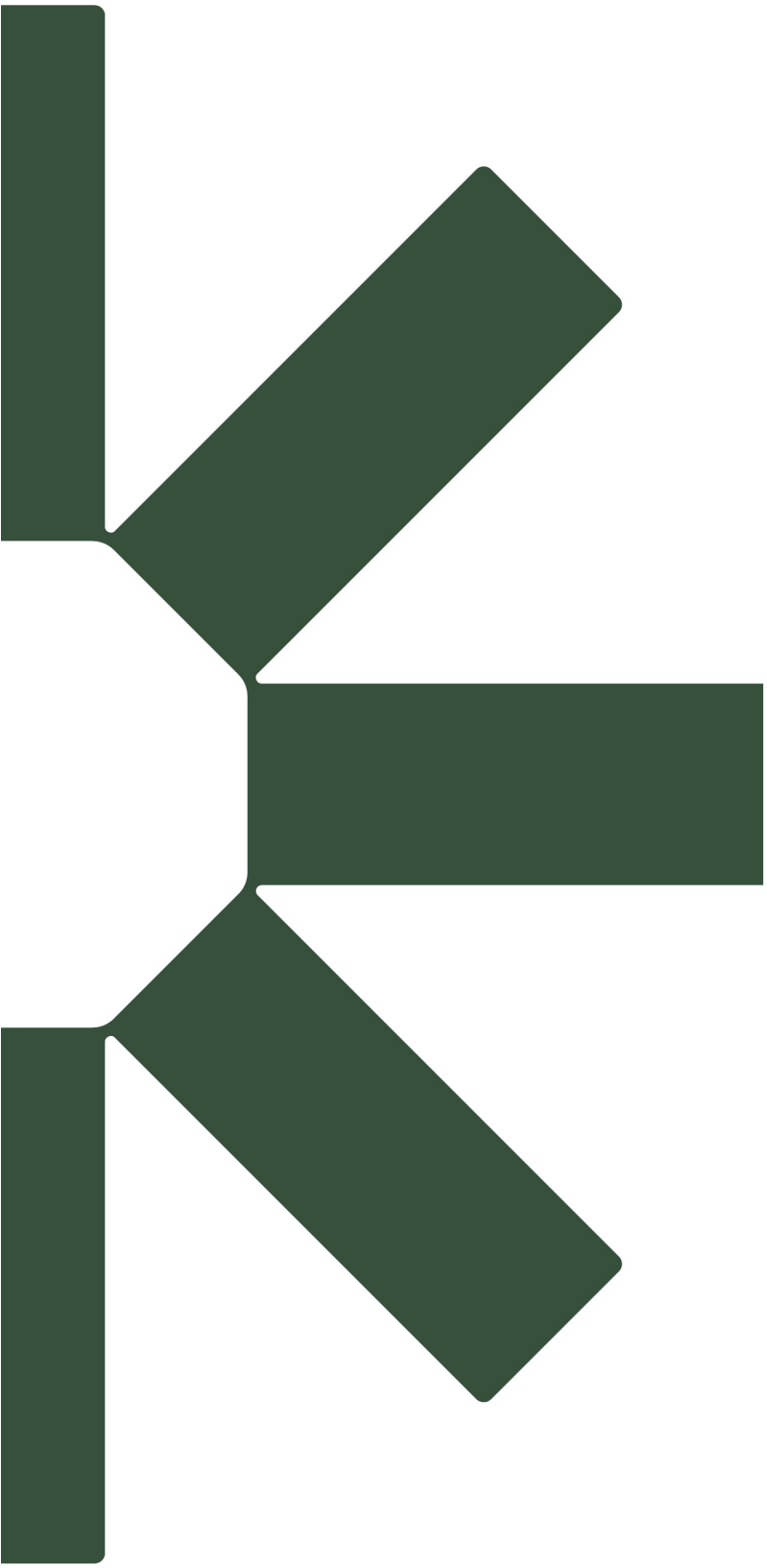
Environmental Impact Statement

Panorama Battery Energy Storage System (BESS)

Panorama BESS SubCo Pty Ltd

SLR Project No.: 660.30234.00000

31 May 2024



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