

Native Vegetation Clearance

Mannum

Battery Energy Storage System

Data Report

Clearance under Section 28 of the Native Vegetation Act 1991

22 January 2024

Prepared by [REDACTED]



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1. Application information

Application Details

Applicant:	Ace Energy		
Key contact:	[REDACTED] [REDACTED] CAMBERWELL VIC 3124		
Landowner:	[REDACTED] and MID MURRAY DISTRICT COUNCIL		
Site Address:	270 Mannum Rd, Mannum		
Local Government Area:	MID MURRAY DISTRICT COUNCIL	Hundred:	FINNISS
Title ID:	CT/5490/521	Parcel ID	F168107 A340

Summary of proposed clearance

Purpose of clearance	Clearance is required for the construction of a Battery Energy Storage System plant and associated infrastructure.
Description of the vegetation under application	0.56 ha of regenerating chenopod shrubland in moderate condition.
Total proposed clearance - area (ha) and number of trees	0.56 ha of chenopod shrubland are proposed to be cleared. (0.55 ha on private property + 0.01 ha of roadside vegetation)
Level of clearance	Level 4
Overlay (Planning and Design Code)	Native Vegetation Overlay

Map of proposed clearance area



Seriously at variance with the Principles of clearance?	Vegetation Association A1 is Seriously at Variance with Principle 1(b) Wildlife Habitat
Substantially intact	No sites may be considered substantially intact
Mitigation hierarchy	The site of the BESS plant has been selected in an area of the property that is close to the access road and has the most sparse (planted) overstory and a higher level of weed invasion.
SEB Offset proposal	Payment of \$6,816.10

2. Purpose of clearance

2.1 Description

Ace Energy is planning to construct a 4.95 MW Battery Energy Storage System (BESS) plant near the intersection of Mannum Road and Patricks Road near Mannum. The site will house a battery array, medium voltage power station and high voltage switchgear enclosed by a perimeter fence and accessed by a new driveway to Patricks Rd. Screening vegetation will be planted along three sides of the perimeter fence. The works also include a new overhead power lines to connect the BESS system to the exiting power network.

2.2 Background

The site is located on a private property approximately 3 km west of the Mannum township in the Murraylands. The property comprises a residence and approximately 28.5 ha of revegetated mallee which was direct seeded in 2007.

The survey area lies within large tracts of agricultural land used for livestock and horticulture, and, more recently solar panel arrays. Remnant vegetation in the vicinity of the site consists of small patches of mid open mallee woodland over chenopod shrubs.

2.3 General location map

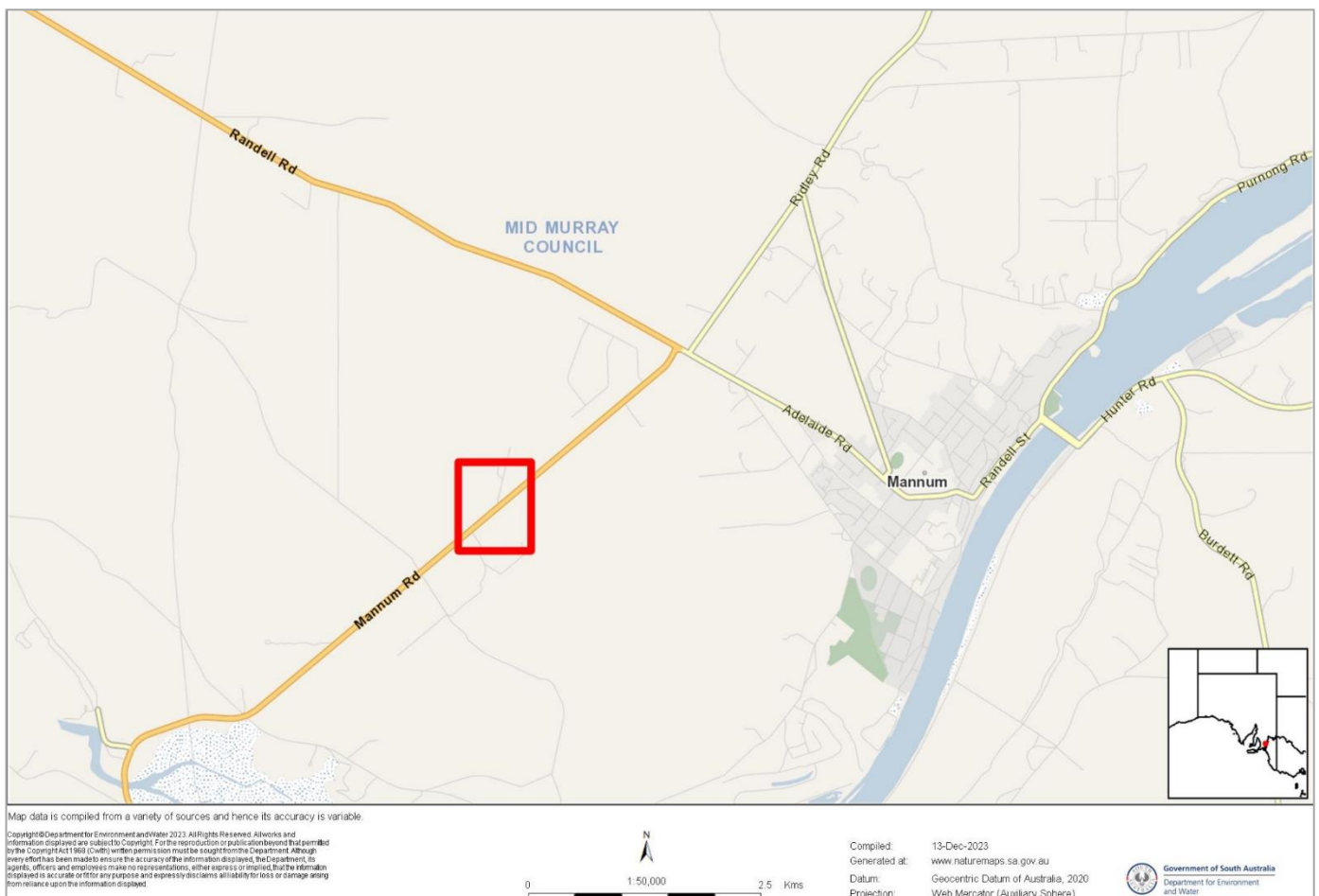


Figure 1. Location map



Figure 2. Site map showing location of native vegetation impacted by the works.

2.4 Details of the proposal

The proposed works consist of:

- construction of a ~66 x 60 m fenced compound that houses a battery array, medium voltage power station and high voltage switchgear;
- planting a 5 m wide strip of screening vegetation along the outside of the north-eastern, south-eastern and south-western boundaries of the compound fence;
- an access track from the battery compound to Patricks Rd; and,
- an overhead powerline connection with 3.0 m maximum clearance either side, connecting the new power station to an existing overhead powerline on Mannum Rd.

Total clearance area (Figure 3) includes:

- 0.494 ha (76m x 65m) for the fenced compound and screening vegetation
- 0.043 ha access track to Patricks Rd
- 6 m wide clearance for easement beneath powerline

Detailed design plans are provided in Appendix 2.

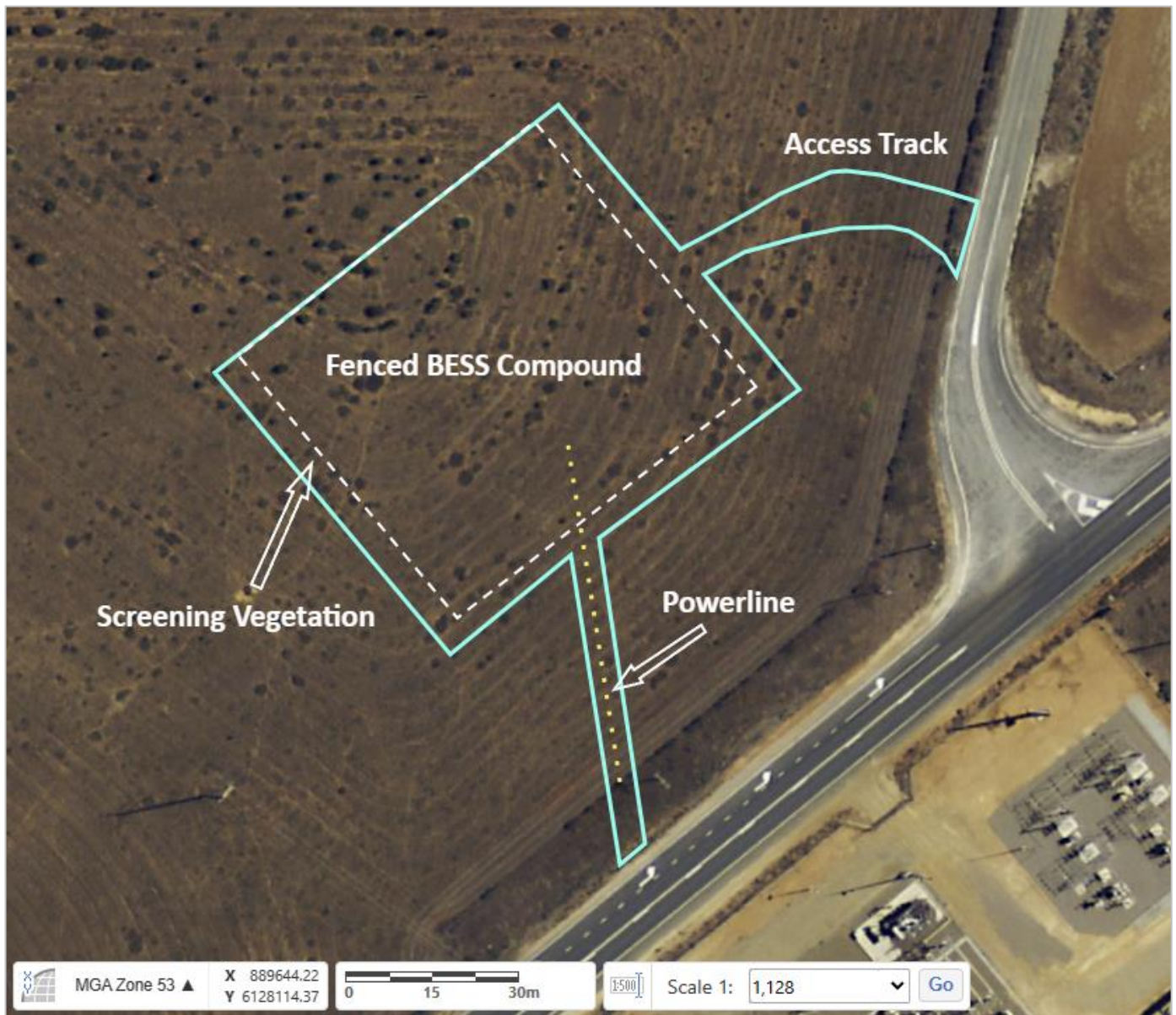


Figure 3. Site plan showing proposed works, with the extent of the clearance area outlined in blue

2.5 Approvals required or obtained

Clearance of vegetation will require approval under the Native Vegetation Act.

The project requires development approval with the Mid Murray District Council.

The project interacts with Matters of National Environmental Significance (MNES) under the Environment Protection and Biodiversity Conservation Act (1999) Cwth.

2.6 Development Application information

- Zone: Rural
- Overlays: Native Vegetation

A Development Application is being submitted concurrently to the Mid-Murray Council

3. Method

3.1 Database Searches for Flora and Fauna

Existing records of threatened flora and fauna were reviewed for a 5 km search radius centred on the site using:

- NatureMaps and Atlas of Living Australia (13th December 2023).
- EPBC Protected Matters Search Tool (8th December 2023)

Records with a locational reliability greater than 1km or occurring prior to 1995 in the NatureMaps and Atlas of Living Australia, were excluded, along with records of aquatic or marine species. For EPBC Protected Matters, species were only included if they are known to occur, or their habitat is known to occur in the search area.

National Conservation Ratings are in accordance with the most recent *EPBC Act* Listing Status available in the Species Profile and Threats Database.

State Conservation Ratings are in accordance with the *National Parks and Wildlife Act 1972*.

3.2 Flora assessment

The field survey was undertaken on the 8th of December 2023.

Vegetation associations were mapped by a search throughout the site to identify plant communities and assemblages based on overstorey and understorey composition and structure. Bushland Assessments were completed for each plant association as prescribed by the Native Vegetation Council's (NVC) Bushland Assessment Manual (July 2020). This included recording the plant species present, the vegetation structure, and habitat values offered by the plant community.

Shapefiles were created for vegetation associations along with waypoints for photographs and other points of interest.

3.3 Fauna assessment

The suitability of the site for rare and threatened fauna was assessed based on the known distribution and occurrence of species, their habitat requirements and the quality of habitat available at the site.

During the site visit, active searching was undertaken for two threatened species for which the habitat was considered potentially suitable (Elegant Parrot and Diamond Firetail).

Targeted surveying was not undertaken for other threatened species as the habitat at the site was not considered suitable for species that prefer a more structurally diverse mature woodland with a well-developed litter layer.

4. Assessment Outcomes

4.1 Vegetation Assessment

General description of the vegetation, the site and matters of significance

The site is in the Punthari IBRA Association of the Murraylands and Riverland Landscapes Region. Native vegetation remnancy in the IBRA Association is 18%, with 13% being formally protected.

The landscape is characterised by undulating rises and low hills underlain by granite capped by Tertiary sediments, Woorinen Formation carbonates and Molineaux Sand. There are occasional granite outcrops and variable surface stone, particularly calcrete where Woorinen Formation carbonates have hardened. Soils are mostly deep sands or sand over red sandy clay. These soils are infertile (especially the deep sands) and are susceptible to water repellence and wind erosion.

Situated almost 30 km to the east of the site, Ettrick Conservation Park is the closest large tract of remnant vegetation protected in a reserve. A Significant Environmental Offset Area (2007_3002) covering an area of 54.6 ha is located on the River Murray, 3.5 km south-east of the survey site. There are no Heritage Agreements within 10 km of the site.

Mean annual rainfall at the site is 324 mm from 1976 to 2005 (NatureMaps).

Vegetation at the survey site comprises a chenopod shrubland that has regenerated following a large-scale direct seeding project undertaken in 2007. The plantings comprise a mix of mallee eucalypts with a mid-tall shrublayer of *Acacia*, *Senna* and *Dodonaea* species.

No threatened flora were recorded at the site.

Details of the vegetation associates proposed to be impacted

Vegetation Association	Vegetation Association 1: Revegetated mallee overstorey over regenerating chenopod shrubland
	
	<p data-bbox="272 1048 1303 1084">Photo 9365 facing south-west at Latitude -34.916031; Longitude 139.263707 (Wpt 461)</p>
	
	<p data-bbox="316 1883 1262 1919">Photo 9368 facing east at Latitude -34.915757; Longitude 139.263322 (Wpt 462)</p>

General description	<p>This vegetation association is found across the survey site and comprises a revegetated direct-seeded overstory of mallee species (e.g. <i>Eucalyptus calycogona</i>, <i>E. phenax</i>) and tall shrubs including a mix of <i>Acacia</i>, <i>Senna</i> and <i>Dodonaea</i> species.</p> <p>The understory consists of a regenerating chenopod shrub layer dominated by <i>Enchylaena tomentosa</i> and <i>Maireana brevifolia</i>, with a similar species composition to that occurring in adjacent roadside vegetation. There is a moderate diversity of native species, which includes shrubs such as <i>Maireana trichoptera</i>, <i>M. erioclada</i> and <i>Pittosporum angustifolium</i>, native daisy (<i>Vittadinia gracilis</i>) and spear-grass (<i>Austrostipa scabra</i>). Seedlings of <i>Senna artemisioides</i> and <i>Dodonaea viscosa</i> shrubs are regenerating from the planted mallee community.</p> <p>Exotic species such as Onion Weed, Wall Rocket, Horehound and Bearded Oat dominate in the more open areas in the south-eastern part of the site, but are sparse where the planted overstory becomes denser. A few scattered seedlings of Box Thorn were found.</p> <p>Although the understory community is in poor to moderate condition relative to the benchmark remnant mallee community, the presence of well-developed planted canopy and midstorey layers, increases structural and species diversity and hence the site's habitat value.</p> <p>Roadside vegetation impacted by the installation of the powerline and access track comprises the same chenopod shrubland community without the overstory of planted vegetation.</p>				
Threatened species or community	<p><u>State-threatened flora observed:</u> None</p> <p><u>Nationally- and State-threatened fauna that may use this community:</u></p> <ul style="list-style-type: none"> • Nationally Endangered: Hooded Robin • Nationally Vulnerable: Diamond Firetail, Southern Whiteface • State Vulnerable: Little Eagle • State Rare: Elegant Parrot, Black Falcon, White-winged Chough, Eastern Shriketit, Restless Flycatcher. <p>Two of these species, the Elegant Parrot and Diamond Firetail are most likely to utilise the chenopod shrublands at the site.</p> <p>The remaining species may find suitable resources in the associated planted vegetation, or hunt over the shrublands (see Table 4.2 for details).</p>				
Landscape context score	1.14	Vegetation Condition Score	28.59	Conservation significance score	1.1
Unit biodiversity Score	32.46	Area (ha)	0.5517	Total biodiversity Score	17.91

Site map showing areas of proposed impact

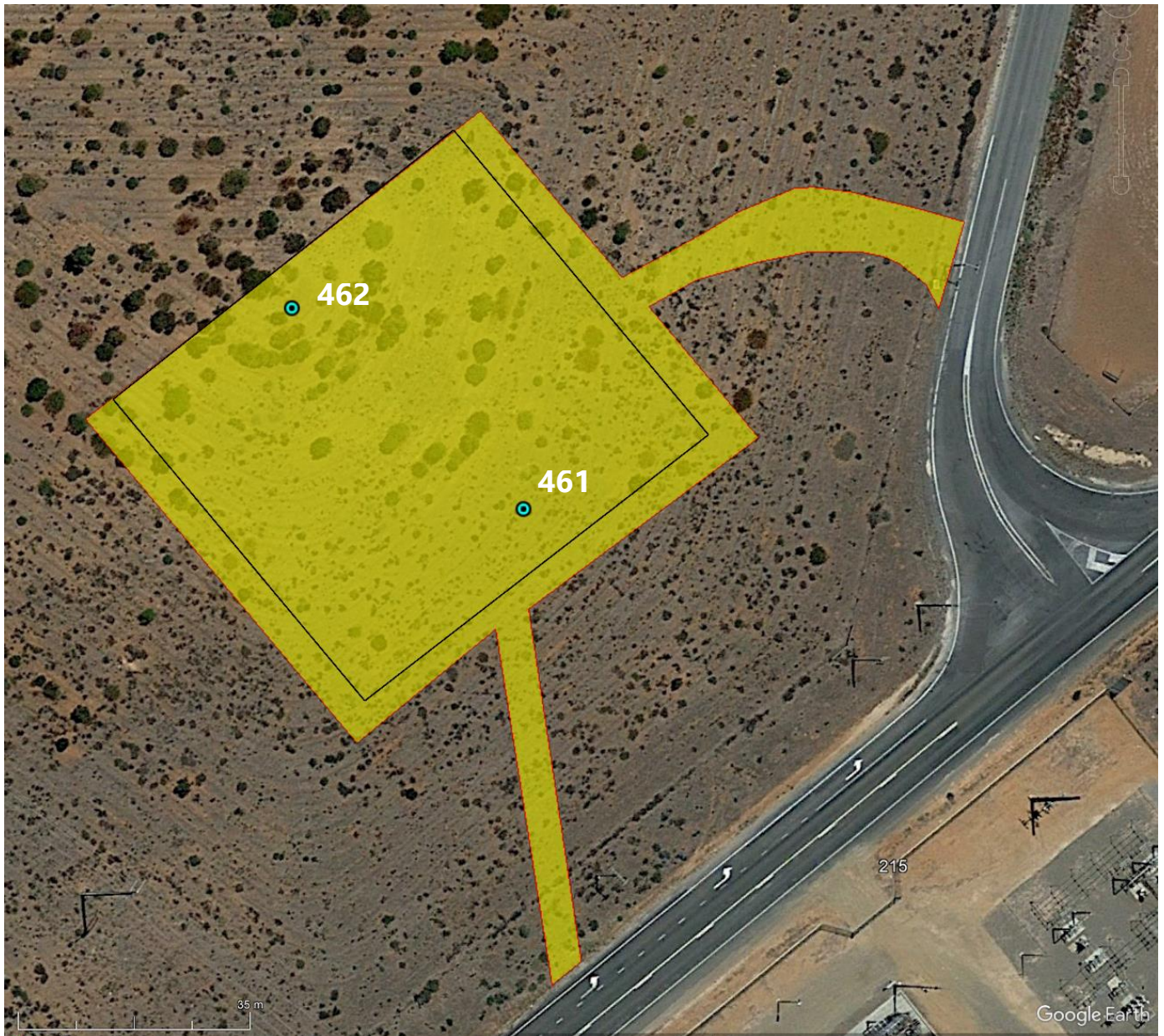


Figure 4. Site map showing locations of Vegetation Association A1 (yellow shading) and waypoints (blue dots)

Photo log

Photo	Description	Waypoint	Direction
9362	Vegetation Association A1	461	NW
9363	Vegetation Association A1	461	NE
9364	Vegetation Association A1	461	SE
9365	Vegetation Association A1	461	SW
9366	Vegetation Association A1	462	NE
9367	Vegetation Association A1	462	SW
9368	Vegetation Association A1	462	E

4.2 Threatened Species assessment

Threatened fauna recorded within 5km of the application area since 1995, or the vegetation is considered to provide suitable habitat

Species Common Name	EPBC Act	NPW Act	Data Source	Date of last record	Species known habitat preferences	Likelihood of use for habitat – Comments
<i>Neophema elegans elegans</i> Elegant Parrot		R	3	2019	Open forests, woodland and grassland. It feeds primarily on the ground on seeds of grasses or low-growing shrubs.	Highly Likely. Several recent records within 5 km and there is suitable habitat available at the site.
<i>Stagonopleura guttata</i> Diamond Firetail	VU	V	2,5	2018	Occurs in <i>Eucalyptus</i> open forests and lightly timbered habitats including farmland and grassland. Feeds on the ground on seeds and insects.	Highly likely. Numerous records nearby. May use planted eucalypts at the site and forage on the ground.
<i>Aphelocephala leucopsis leucopsis</i> Southern Whiteface	VU		3,5	2010	Found in a wide range of open woodlands and shrublands, usually dominated by acacias or eucalypts with an understorey of grasses and/or shrubs. Favours habitat with low tree densities and an herbaceous understorey with litter cover. Forages on the ground on insects, spiders & seeds.	Possible. Recorded at Mannum Waterfalls, but vegetation at the site is not their preferred habitat as litter cover is very low.
<i>Corcorax melanorhamphos</i> White-winged Chough		R	2	2021	Open forest and woodlands, often preferring wetter areas with plentiful leaf-litter for feeding, and available mud for nest building.	Possible. Several records within 5km of site, but vegetation at the site is not preferred habitat.
<i>Falco subniger</i> Black Falcon		R	3	2010	Mostly occurring in tree-lined watercourses and in isolated woodlands in inland regions. Sparse woodland, shrubland and grassland in arid and semi-arid zones, especially wooded (<i>Eucalypt</i>) watercourses.	Possible. Several records at Mannum Waterfalls. The species may use the revegetated trees at the site and hunt over the shrublands.
<i>Falcunculus frontatus frontatus</i> Eastern Shrike-tit		R	3	2004	Occurs in open eucalypt forests and woodlands. Sometimes seen foraging in parks and gardens, on farms with scattered trees, and on pine plantations.	Possible. Chenopod shrublands are not preferred habitat but the revegetated trees at the site may provide some food resources.
<i>Hieraaetus morphnoides</i> Little Eagle		V	2	2023	A widespread species found in open eucalypt forest or woodland, tree-lined watercourses, and sheoak or acacia woodlands. Nests in mature living trees.	Possible. Numerous records at Mannum Waterfalls. The species may hunt over the shrublands, but the site lacks mature trees.
<i>Melanodryas cucullata cucullata</i> Hooded Robin	EN	R	3,5	2009	Occurs in dry eucalypt and acacia woodlands and shrublands with an open understorey, some grassy areas and a complex ground layer. They prefer remnants at least 10 ha in size, including revegetated woodlands. Critical habitat is structurally diverse featuring mature eucalypts, saplings, some small shrubs and a ground layer of	Possible. Recorded at Mannum Waterfalls but vegetation at the site lacks the maturity and structural diversity of their preferred habitat.

Species Common Name	EPBC Act	NPW Act	Data Source	Date of last record	Species known habitat preferences	Likelihood of use for habitat – Comments
					moderately tall native grasses with standing dead or live trees and tree stumps and fallen timber.	
<i>Myiagra inquieta</i> Restless Flycatcher		R	2	2009	Found in open forests, woodlands, in river red gums near water, coastal scrubs, semi-arid shrublands and farmland. It feeds on insects and builds its nest in the fork of a tree, often near water.	Possible. Suitable habitat is available and there are a few records within 5km of the site.
<i>Lophochroa leadbeateri</i> <i>leadbeateri</i> Major Mitchell's Cockatoo	EN	R	5	N/A	Lives in arid and semi-arid woodlands dominated by mulga (<i>Acacia aneura</i>), mallee and box eucalypts, slender cypress pine (<i>Callitris gracilis</i>) or belah (<i>Casuarina cristata</i>). Within these vegetation types, the subspecies main requirements are fresh surface water, and trees with suitable nesting hollows.	Unlikely. No recent records within 5km of the site. No suitable habitat available.
<i>Pteropus poliocephalus</i> Grey-headed Flying Fox	VU	R	3	2020	Fruiting and flowering trees in native forests, woodlands, urban areas.	Unlikely. Vegetation at the site is not suitable for the species and there is only one nearby record.
<i>Trichosurus vulpecula</i> Common Brushtail Possum		R	3	2004	Occurs in woodland and shrubland and feeds on leaves, flowers and fruits. Uses mature trees for feeding and sleeps in hollows.	Unlikely. Vegetation at the site is not suitable for the species and there is only one nearby record.
Source; 1- BDBSA, 2 - AoLA, 3 – NatueMaps 4 – Observed/recorded in the field, 5 - Protected matters search tool, 6 – others NP&W Act; E= Endangered, V = Vulnerable, R= Rare EPBC Act; Ex = Extinct, CR = Critically endangered, EN = Endangered; VU = Vulnerable						

Criteria for the likelihood of occurrence of species within the Study area.

Likelihood	Criteria
Highly Likely/ Known	Recorded in the last 10 years, the species does not have highly specific niche requirements, the habitat is present and falls within the known range of the species distribution or; The species was recorded as part of field surveys.
Likely	Recorded within the previous 20 years, the area falls within the known distribution of the species and the area provides habitat or feeding resources for the species.
Possible	Recorded within the previous 20 years, the area falls inside the known distribution of the species, but the area provide limited habitat or feeding resources for the species. Recorded within 20 -40 years, survey effort is considered adequate, habitat and feeding resources present, and species of similar habitat needs have been recorded in the area.
Unlikely	Recorded within the previous 20 years, but the area provide no habitat or feeding resources for the species, including perching, roosting or nesting opportunities, corridor for movement or shelter. Recorded within 20 -40 years; however, suitable habitat does not occur, and species of similar habitat requirements have not been recorded in the area. No records despite adequate survey effort.

4.3 Presence of Substantially Intact Vegetation

If the vegetation is considered to represent a substantially intact stratum, the NVC cannot approve clearance, unless for the purpose of harvesting native vegetation (section 27(3)).

Provide information on whether the native vegetation constitutes a continuous intact stratum.

Vegetation association A1 has a low diversity of native species with all strata of vegetation heavily impacted. The association does not support an intact stratum of vegetation.

Provide information on whether the native vegetation has been subject to degradation within the past 20 years.

Vegetation association A1 is part of a revegetation project initiated in 2007 and has not been subject to degradation since then.

Provide a key finding on whether any or all of the area of impact could be considered as substantially intact.

It is concluded that the impacted vegetation cannot be considered as substantially intact.

Principles of Clearance (Schedule 1, Native Vegetation Act 1991)

If the clearance is seriously at variance with one or more of the principles, the NVC cannot approve clearance, however, the Act provides the NVC with a degree of discretion in certain situations

Principle of Clearance	Considerations
Principle 1a - it comprises a high level of diversity of plant species	<p><u>Relevant information</u> Vegetation Association A1 – 16 native and 8 introduced plant species Bushland Plant Diversity Score – 18</p> <p><u>Assessment against the principles</u> Seriously at Variance - None At Variance – Vegetation Association A1</p> <p><u>Moderating factors that may be considered by the NVC</u> – N/A</p>
Principle 1b - significance as a habitat for wildlife	<p><u>Relevant information</u> Nationally- and State-threatened fauna recorded within 5 km of the site which may use Vegetation Association A1:</p> <ul style="list-style-type: none"> Nationally Endangered: Hooded Robin Nationally Vulnerable: Diamond Firetail, Southern Whiteface State Vulnerable: Little Eagle State Rare: Elegant Parrot, Black Falcon, White-winged Chough, Eastern Shrike, Restless Flycatcher. <p><u>Vegetation Association A1:</u></p> <ul style="list-style-type: none"> Threatened Fauna Score – 0.1 Unit biodiversity Score – 32.46 <p><u>Assessment against the principles</u> Seriously at Variance - Vegetation Association A1</p> <p><u>Moderating factors that may be considered by the NVC</u> The Elegant Parrot and Diamond Firetail are most likely to utilise the chenopod shrublands at the site. Active searching during the site visit did not detect either of these species. Although the remaining species may find some suitable resources in the associated planted vegetation, or hunt over the shrublands, it would not be considered their preferred woodland habitat.</p>
Principle 1c - plants of a rare, vulnerable or endangered species	<p><u>Relevant information</u> No threatened flora were recorded. Threatened Flora Scores:</p> <ul style="list-style-type: none"> Vegetation Association A1 - 0 <p><u>Assessment against the principles</u> Seriously at Variance - None At Variance – None</p> <p><u>Moderating factors that may be considered by the NVC</u> – N/A</p>
Principle 1d - the vegetation comprises the whole or part of a plant community that is Rare, Vulnerable or endangered:	<p><u>Relevant information</u> The vegetation association is not part of a rare or threatened plant community. Threatened Community Score - 1</p> <p><u>Assessment against the principles</u> Seriously at Variance - None</p> <p><u>Moderating factors that may be considered by the NVC</u> – N/A</p>

Principle 1e - it is significant as a remnant of vegetation in an area which has been extensively cleared.	<u>Relevant information</u> Vegetation remnancy for the Murray Mallee subregion is 21% Vegetation remnancy for the Punthari Association is 18% Total Biodiversity Score – 18.18
	<u>Assessment against the principles</u> Seriously at Variance – None At Variance – Vegetation Association A1
	<u>Moderating factors that may be considered by the NVC</u>
Principle 1f - it is growing in, or in association with, a wetland environment.	<u>Relevant information</u> The vegetation is not associated with a wetland
	<u>Assessment against the principles</u> Seriously at Variance - none At Variance – none
	<u>Moderating factors that may be considered by the NVC</u> – N/A
Principle 1g - it contributes significantly to the amenity of the area in which it is growing or is situated.	<u>Relevant information</u> The vegetation to be removed is on a major road in view of the public but has a low profile. Screening vegetation will be planted along three sides of the proposed BESS site.
	N/A
	<u>Moderating factors that may be considered by the NVC</u>

Principles of Clearance (h-m) will be considered by comments provided by the local NRM Board or relevant Minister. The Data Report should contain information on these principles where relevant and where sufficient information or expertise is available.

Address the Mitigation Hierarchy

The Native Vegetation Council will consider if the applicant has avoided and minimized the clearance of native vegetation as much as practically possible.

a) Avoidance

The location of the BESS site within the property was selected close to the access road to reduce the extent of native vegetation clearance required for the powerline and access track.

b) Minimization

The clearance of native vegetation has been minimised by selecting an area of the property with the most sparse (planted) overstory and a higher level of weed invasion.

c) Rehabilitation or restoration

Two rows of small native trees and shrubs will be planted to provide screening vegetation along three sides of the perimeter fence.

d) Offset – any adverse impact on native vegetation that cannot be avoided or further minimized should be offset by the achievement of a significant environmental benefit that outweighs that impact.

Clearance will be offset with a payment to the Native Vegetation Fund.

4.6 Risk Assessment

Determine the level of risk associated with the application

Total clearance	No. of trees	0
	Area (ha)	0.56
	Total biodiversity Score	18.18
Seriously at variance with principle 1(b), 1(c) or 1 (d)		1(b)
Risk assessment outcome		Level 4

5. Clearance summary

Clearance Area Summary table

Block	Site	Species diversity score	Threatened Ecological community Score	Threatened plant score	Threatened fauna score	UBS	Area (ha)	Total Biodiversity score	Loss factor	Loadings	Reductions	SEB Points required	SEB payment	Admin Fee
A	1	18	1	0	0.1	32.46	0.56	18.18	1			18.80	\$6,365.00	\$350.07
						Total	0.56	18.18				19.09	\$6,460.75	\$355.34

Totals summary table

	Total Biodiversity score	Total SEB points required	SEB Payment	Admin Fee	Total Payment
Application	18.18	19.09	\$6,460.75	\$355.34	\$6,816.10

Economies of Scale Factor	0.35
Rainfall (mm)	324

6. Significant Environmental Benefit

A Significant Environmental Benefit (SEB) is required for approval to clear under Division 5 of the *Native Vegetation Regulations 2017*. The NVC must be satisfied that as a result of the loss of vegetation from the clearance that an SEB will result in a positive impact on the environment that is over and above the negative impact of the clearance.

ACHIEVING AN SEB

Indicate how the SEB will be achieved by ticking the appropriate box and providing the associated information:

☐ Pay into the Native Vegetation Fund.

PAYMENT SEB

If a proponent proposes to achieve the SEB by paying into the Native Vegetation Fund, summary information must be provided on the amount required to be paid and the manner of payment:

Payment Amount: \$6,816.10

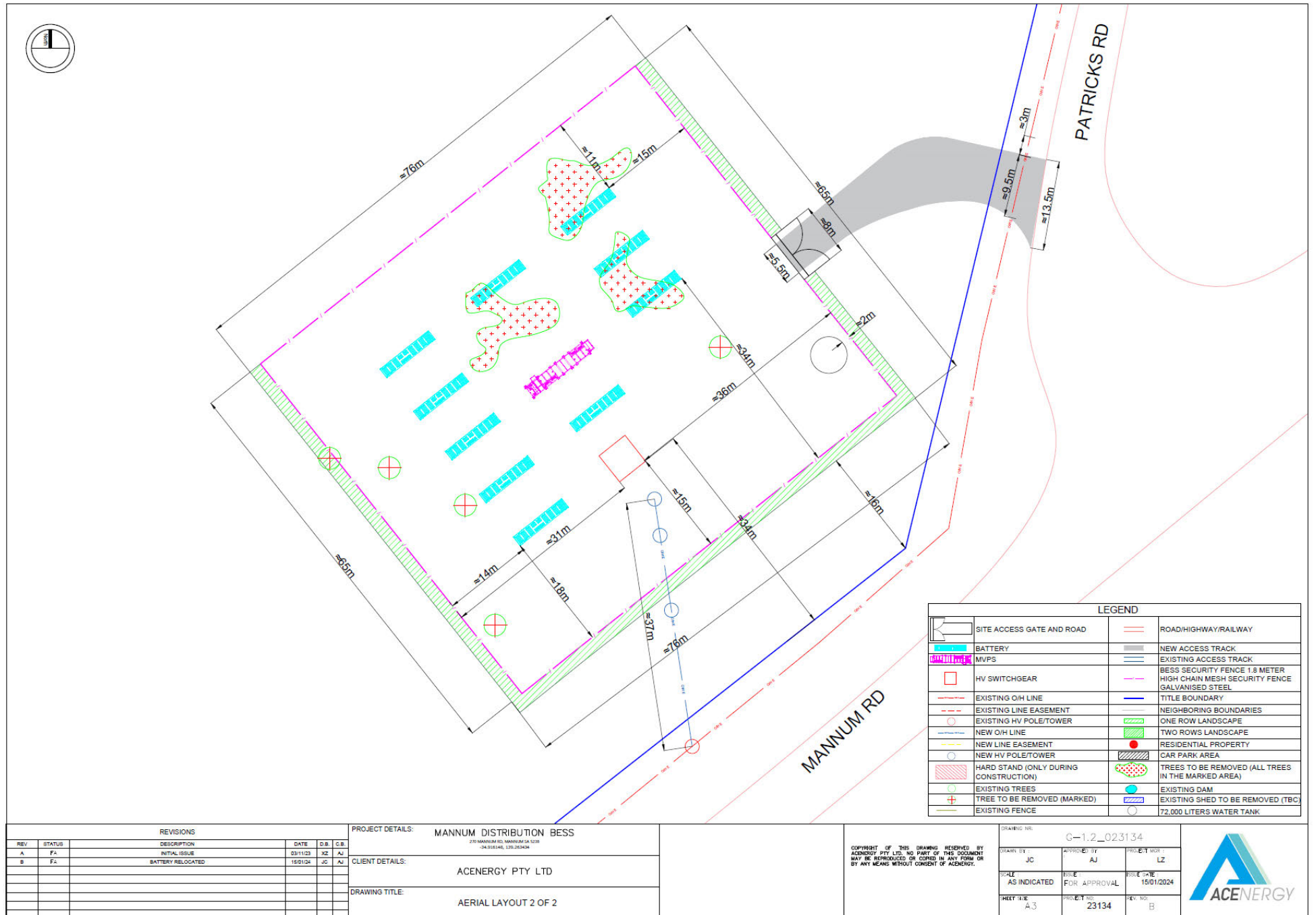
7. Appendices

Appendix 1. Bushland Vegetation Assessment Scoresheets associated with the proposed clearance (submitted in Excel format)

Appendix 2. Design Plans

Appendix 3. Landholder Consent Form (attached separately).

Appendix 2. Design Plans



Appendix 2. Design Plans

