Moreton Hill Wind Farm

Environment Report

Final

May 2026

umwelt

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Environment Report

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Prepared by
Umwelt (Australia) Pty Limited

On behalf of
MHWF Nominees Pty Ltd

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Executive Summary

Project Overview

Moreton Hill Wind Farm (**the Project**) is a proposed wind farm in south-west Victoria comprising up to 62 wind turbine generators (**WTGs**), a battery energy storage system (**BESS**) and a 15 km underground transmission line connecting into the National Electricity Market (**NEM**) at Berrybank Terminal Station. The Project is being developed by MHWF Nominees Pty Ltd (**the Proponent**).

The Project's primary objective is to supply renewable energy to the NEM, supporting Victoria's electricity supply as the generation mix transitions towards renewable energy. The Project is anticipated to generate approximately 421 megawatts (**MW**) of renewable energy, enough to power 260,000 homes. The Project Site is highly compatible for a wind farm due to the availability of a strong and consistent wind resource, proximity to the existing electricity network, relatively low population density, largely historically cleared land now used for agriculture (farming zone), as well as the ability to avoid and minimise impacts on sensitive receptors (such as dwellings), biodiversity, heritage and other environmental values. The Project is in the proposed Central Highlands Renewable Energy Zone (**REZ**), as identified by VicGrid which supports the Project's suitability for grid connection, land use compatibility and social factors as considered in the Victorian Transmission Plan (**VTP**).

The Project represents a capital investment of $1.5 billion and is expected to provide economic and social benefits to the local region and broadly across Victoria. Over its 30-year operational life, the Project is projected to generate $200 million in economic stimulus via payments to landholders and neighbours, wages, council contributions, and community benefit schemes. During construction, the Project is expected to support a workforce of 360 full-time equivalent (**FTE**) jobs (140 FTE direct jobs and 220 FTE indirect jobs). During operation, the Project will support 10 FTE direct jobs locally (on-site) on an ongoing basis through the operation and maintenance activities.

Preparation of this environment report is a requirement under the *Environment Effects Act 1978* (Vic) (**EE Act**) and *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (**EPBC Act**) in response to the Project's referral decisions. The Project will be assessed by the Victorian Minister for Planning (**the Minister)** under the Bilateral (**Assessment**) Agreement between the Commonwealth and Victorian Governments (the **Bilateral Agreement**), which accredits the environment report process to assess potential impacts on Matters of National Environmental Significance (**MNES**).

This environment report has been prepared in accordance with the '*Scope for Moreton Hill Wind Farm Environment Report under EE Act (EPBC Act Bilateral Agreement) EPBC Act Bilateral*' (**the scoping document**).The purpose of this environment report is to describe the Project and its potential environmental effects, specifically on biodiversity values, to enable the Minister to make an assessment on whether the Project would have acceptable environmental outcomes. The scoping document also requires consideration of potential social and economic impacts of the Project.

All other environmental technical assessments undertaken for the Project are outside of the scope of the environment report and have been prepared to support the planning permit applications for the Project. These assessments can be found as appendices to the planning permit applications. The Project is seeking planning approval under the *Planning and Environment Act 1987* (**P&E Act**) through two planning permit applications in accordance with Corangamite Planning Scheme and the Golden Plains Planning Scheme, via the Development Facilitation Program (**DFP**) under Clause 53.22.

Following formal submission of the environment report, to the satisfaction of the Minister, the environment report will then be placed on exhibition for public comment. The environment report will be on public notice for a period of 28 business days, alongside the Project's planning permit applications. During this time, the public can read and make written submissions about matters presented within these documents. Submissions received during the exhibition period will be addressed by the Proponent and responded to in an addendum report to this environment report, and then submitted to the Minister to inform their assessment of the Project's impacts.

The Minister will then prepare an Assessment Report, which will be provided to the Commonwealth Minister for the Environment and Water (**Commonwealth Minister**) to inform their decision under the EPBC Act. Additionally, the Assessment Report will be considered by relevant Victorian Government decision-makers, including to support the Minister's decision on the planning permit applications.

Ecological Assessment Findings

Ecological investigations have been ongoing since 2020, with several years of onsite field investigations to characterise the existing ecological conditions within and around the Project Site, and to assess potential impacts from the Project. The findings of the onsite investigations have continually informed the Project design, with several design refinements implemented to avoid impacts on biodiversity values, particularly Brolga habitat. Where residual impacts could not be avoided, management and mitigation measures were developed (including adaptive management responses) to manage potential residual impacts.

Land located within and surrounding the Project Site has been substantially modified over time to accommodate agricultural operations. This has resulted in much of the native vegetation within private land being removed, with native vegetation predominantly restricted to roadsides or isolated clusters.

A total of 15.80 ha of native vegetation was recorded in the Flora Assessment Area (as utilised for the Ecological Assessment (**Appendix C**)). However, following extensive design refinement, the Project is only anticipated to result in the direct removal of 1.64 ha of native vegetation and one large, scattered tree, primarily associated with road and access track upgrades, underground reticulation and the underground transmission line. Prior to construction works commencing, fencing will be installed around areas of native vegetation to be retained, to clearly demarcate these as No-Go Zones. The offset requirement for native vegetation removal is 0.704 General Habitat Units and one Large Tree, to be met via a third-party offset site.

Construction works are also anticipated to directly impact on two threatened ecological communities (**TECs**) – EPBC Act listed Natural Temperate Grassland of the Victorian Volcanic Plain (critically endangered) and *Flora and Fauna Guarantee Act 1988* (**FFG Act**) listed Western (Basalt) Plains Grassland. No flora species listed under the EPBC Act would be directly impacted by construction of the Project, however there will be impacts on up to seven individuals of FFG Act listed Pale Swamp Everlasting (critically endangered). All other listed threatened flora species recorded during targeted surveys will be avoided by the construction footprint. The Project would impact on a population of Common Golden Moths, a 'General Protected' flora species under the FFG Act, through temporary upgrade works at site entry point 5.

Of the 4.06 ha of Natural Temperate Grassland of the Victorian Volcanic Plain recorded within the Assessment Area, the Project has been refined to result in a residual impact of 1.23 ha on the community. The construction footprint would impact on the eastern edge of 13 discrete low to moderate quality patches of the community along the road reserve of Willowvale Road. These existing patches are highly fragmented and are subject to ongoing disturbance. These edge impacts would only slightly reduce the extent of each patch, but no patches would be removed entirely, therefore no fragmentation will occur. Mitigation measures will be implemented, including revegetation post-construction and protection of adjacent retained TEC areas to further minimise potential impacts. However, as the Project would reduce the extent of this TEC, it is considered a significant impact. Offsets will be secured in accordance with the EPBC Act offsets policy.

The Project would also impact on 1.42 ha of the total 6.03 ha recorded extent of Western (Basalt) Plains Grassland. While the Project would slightly reduce the extent of this community, the impact is spread across 35 patches all located within the road reserve and is not considered a significant impact. The remaining 4.61 ha of the community recorded will be retained. The 1.42 ha proposed to be removed was also recorded as low quality habitat for EPBC Act listed Striped Legless Lizard and FFG Act listed Tussock Skink. However, this is not considered a significant impact due to the low quality, small extent and highly fragmented nature of potential habitat being impacted, with sufficient remaining habitat in the locality to support the species.

Lake Widderin located approximately 3.7 km west of the nearest turbine, was confirmed as a Brolga flocking and breeding site through Project investigations. Turbine-free buffers were developed in consultation with DEECA and have been applied to reduce the potential for Brolga to collide with the Project WTGs. This resulted in seven turbines being relocated outside of these buffer areas and away from Lake Widderin to avoid the potential for reduced breeding success, to allow continued access to nearby foraging habitats, and to avoid creation of a barrier between habitats for the Brolga. With the implementation of these buffers, the resulting predicted collision risk is 0.016 collisions annually at a 90% avoidance rate and 0.003 collisions annually at a 98% avoidance rate Avoidance rate is the probability that an individual bird will avoid a collision with a WTG. Different avoidance rates are used in collision risk models to provide a range of potential outcomes to account for uncertainty. Therefore, a 90% avoidance rate means that 90% of (or 1 in every 10) Brolga flights will avoid colliding with a WTG. Similarly, a 98% avoidance rate means that 98% of (or 2 in every 50) Brolga flights avoid colliding with a WTG.

While the residual risk of the Project impacting on Brolga through turbine collision is considered low, additional mitigation is proposed to be implemented to further minimise predicted residual impacts on Brolga. This includes investigating the use and suitability of automated detection systems during the Project's operation through developing and implementing a targeted research trial. A Trial Plan will be developed and incorporated into the Bat and Avifauna Management Plan (**BAM Plan**) (**Appendix E**), that will involve an on-site trial of a selected technology at proposed WTGs located within 5 km of Lake Widderin. The Project will also investigate the ability to increase the height of the minimum rotor swept area (**RSA**) from 44 m above ground to 61 m above ground (to avoid typical Brolga flight heights). The Project has conservatively assessed a minimum RSA of 44 m above ground, to provide a worst-case assessment of potential impacts. The final WTG model and specifications will be determined during detailed design.

Other bird and bat species observed during bird utilisation surveys and microbat surveys have potential to collide with WTGs. Most birds were recorded flying below RSA height or at ground level (92.3% of all observed flights), with only 3.1% of all observed flights at RSA height. Listed bird and bat species recorded during Project surveys include EPBC Act listed Brown Treecreeper, Blue-winged Parrot, Grey-headed Flying-fox, White-throated Needletail and FFG Act listed Brolga, Little Eagle, Black Falcon and Eastern Bent-wing bat. The Project is not anticipated to result in a significant impact on any of these listed bird and bat species through turbine collision or through habitat removal with the implementation of mitigation measures, including an adaptive BAM Plan. A BAM Plan (**Appendix E**) has been developed and will be implemented for the Project to minimise, manage and mitigate residual collision risk for listed bird and bat species arising from the operation of the wind farm and to ensure unexpected bird mortalities are responded to appropriately. This includes a five-year monitoring plan, as well as species specific monitoring programs over several years for Brolga and White-throated Needletail.

With the implementation of design avoidance and mitigation measures, the Project is not expected to significantly impact on Commonwealth or State matters of environmental significance, except for residual impacts on EPBC Act-listed Natural Temperate Grassland of the Victorian Volcanic Plain.

Socio-economic Assessment Findings

The Project is in a predominantly rural setting with a small surrounding population. Ballarat serves as the primary service centre for the surrounding rural areas, being the closest major regional centre approximately 35 km to the northeast of the Project. The nearest townships are Linton and Skipton, approximately 5 km to the east and west of the Project Site, respectively. Agriculture, Forestry and Fishing are the biggest industries contributing to the economy of Corangamite and Golden Plains Shire.

Community and stakeholder consultation for the Project has been ongoing since October 2023. Feedback and outcomes of consultation undertaken to date have been integrated into the Project design and the development of community investment program and community sponsorship program.

The Project would result in several socio-economic benefits to the local community and broader region. Agreements between the Proponent and host landholders, as well as neighbouring landholders through commercial agreements, would provide annual payments and allow for shared economic benefits from the Project. This economic boost to farmers enables them to secure supplementary income annually, for decades, while also helping to ‘drought-proof’ their business. This sustains the farming practice and diversifies farming revenue for years to come. The Proponent has worked closely with host landholders to ensure the Project design and layout has minimal impact on their continued farming operations.

The Project will also invest at least $1,050 per megawatt of its final capacity per annum through a dedicated community investment program to support local community priorities. This program will commence at the start of construction and continue for the life of the Project. Based on the current expected capacity of the Project, this equates to around $13 million in community investment over the life of the project, alongside direct payments in lieu of rates totalling $15.5 million to Golden Plains and Corangamite Shires. The Proponent has also offered voluntary annual payments to neighbours within 4 km of a WTG, which equates to approximately $30 million over the Project’s life.

A local community sponsorship program will be available to local organisations, events and initiatives throughout the Project lifecycle, from development through to the end of operations. The Moreton Hill Wind Farm community sponsorship program has been ongoing since 2023, providing up to $40,000 per annum.

The total economic stimulus associated with operation of the Project is estimated at approximately $200 million over 30 years.

Perceived negative impacts from the Project were also identified which include changes in the locality's landscape character caused by visual impact of wind turbines, impacts on way of life and accessibility from temporary construction work, reduced social cohesion from conflicting perspectives on wind farms, and housing and accommodation sector strain from incoming workforce. The Proponent will implement a range of mitigation to avoid or minimise potential negative socio-economic impacts which will be implemented through a range of plans and commitments, including an employment strategy, a procurement strategy, a construction and workforce accommodation strategy and continued implementation of the stakeholder engagement plan and community benefit program.

Environmental Management Framework

An Environmental Management Framework (**EMF**) has been developed as part of the environment report. The EMF provides a transparent and integrated governance framework describing the Proponent's proposed environmental management commitments and associated arrangements to ensure that proposed mitigation is effectively implemented regarding impacts on matters of state and/or national environmental significance.

The Project's EMF consists of several key documents, including environmental management plans, strategies and programs which will contain the detailed mitigation measures necessary to minimise environmental impact and achieve compliance. Several of these environmental management plans will be requirements under an approved planning permit for the Project which will be developed and submitted for endorsement prior to construction and/or operation activities commencing.

The EMF outlines clear accountabilities for complying with approvals and managing and monitoring environment effects and risks associated with all phases of the Project. The EMF also details procedures to be followed for the development, review, approval and implementation of the management plans and outlines proposed independent monitoring, auditing and reporting of environmental management documentation for compliance with relevant statutory conditions and standards.

The EMF will form part of the Proponent's broader integrated Environmental Management System (**EMS**), which aims to ensure a consistent approach to management of environmental impacts and risks. The Proponent's EMS is certified in accordance with *AS/NZS ISO 14001 Environmental Management Systems – requirements with guidance for use*.

Abbreviations

Abbreviation	Meaning
°C	degrees Celsius
ABS	Australian Bureau of Statistics
AEMO	Australian Energy Market Operator
AH Act	*Aboriginal Heritage Act 2006* (Vic)
BAM	Bird and Avifauna Management
BESS	Battery Energy Storage System
BoM	Bureau of Meteorology
CaLP Act	*Catchment and Land Protection Act 1994* (Vic)
CASA	Civil Aviation Safety Authority
CC Act	*Climate Change Act 2022* (Cth)
CEMP	Construction Environmental Management Plan
CFA	Country Fire Authority
CFA Guidelines	Design Guidelines and Model Requirements for Renewable Energy Facilities
CHMP	Cultural Heritage Management Plan
CMA	Catchment Management Authority
Commonwealth Minister	Commonwealth Minister for the Environment and Water
CPI	Consumer Price Index
Cth	Commonwealth
CVU	Central Victorian Uplands
DCCEEW	Australian Government Department of Climate Change, Energy, the Environment and Water
DEECA	Victorian Government Department of Energy, Environment and Climate Action
DFP	Development Facilitation Program
DTP	Victorian Department of Transport and Planning
EE Act	*Environment Effects Act 1978* (Vic)
EES	Environment Effects Statement
EHP	Ecology and Heritage Partners Pty Ltd
EMF	Environmental Management Framework
EMS	Environmental Management Strategy
EP Act	*Environment Protection Act 2017* (Vic)
EPA	Environment Protection Authority Victoria
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Cth)
EPC	Engineering, Procurement, and Construction
ER	Environment Report
ERS	Environment Reference Standard
ESA	Economic study area
ESO	Environmental Significance Overlay
ESO1	Environmental Significance Overlay – Schedule 1

Abbreviation	Meaning
ESO2	Environmental Significance Overlay – Schedule 2
EVCs	Ecological Vegetation Classes
FFG Act	*Flora and Fauna Guarantee Act 1988* (Vic)
FTE	Full-time equivalent
FZ	Farming Zone
GED	General environment duty
GHG	Greenhouse gas
GW	Gigawatts
ha	hectares
IAU	Impact Assessment Unit
interim guidelines	Interim guidelines for the assessment, avoidance, mitigation and offsetting of potential wind farm impacts on the Victorian Brolga population 2011 (DSE, 2012)
ISP	Integrated System Plan
km	Kilometres
kph	Kilometres per hour
kV	Kilovolt
LGA	Local Government Area
The Minister	Victorian Minister for Planning
MNES	Matters of National Environmental Significance
MW	Megawatt
m	Metres
m/s	Metres per second
Native vegetation guidelines	Guidelines for the removal, destruction or lopping of native vegetation (DELWP, 2017)
NTGVVP	Natural Temperate Grassland of the Victorian Volcanic Plain
NDC	Nationally Determined Contribution
NEM	National Electricity Market
NSW	New South Wales
O&M	Operations and Maintenance
OD	Overdimensional
OEMP	Operation Environmental Management Plan
P&E Act	*Planning and Environment Act 1987* (Vic)
PiLOR	Payment in Lieu of Rates
The Planning Schemes	Corangamite Planning Scheme and Golden Plains Planning Scheme
PPA	Planning Permit Application
The Project	Moreton Hill Wind Farm
The Proponent	MHWF Nominees Pty Ltd
PSL	Primary Social Locality
RAP	Registered Aboriginal Party
RE(JI) Act	*Renewable Energy (Jobs and Investment) Act 2017* (Vic)
RE Future	REF Developments Pty Ltd

Abbreviation	Meaning
REZ	Renewable Energy Zone
ROI	Radius of Investigation
rpm	Revolutions per minute
RSA	Rotor swept area
SA1	Statistical Area Level 1
Scoping document	Scope for Moreton Hill Wind Farm Environment Report under EE Act (EPBC Act Bilateral Agreement) EPBC Act Bilateral.
SEIA	Social and Economic Impact Assessment
SEP	Stakeholder Engagement Plan
SIA guideline	NSW Department of Planning Housing and Infrastructure SIA Guideline (NSW DPHI, 2023)
Songmeter	Automated ultrasonic bat detectors (SongMeter SM4)
SSL	Secondary Social Locality
TEC	Threatened Ecological Community
TMP	Traffic Management Plan
TPZ	Tree Protection Zone
Umwelt	Umwelt (Australia) Pty Ltd
VBA	Victorian Biodiversity Atlas
VCC Act	*Climate Change Act 2017* (Vic)
VHI	Victorian Heritage Inventory
VHR	Victorian Heritage Register
Vic	Victoria
VPO	Vegetation Protection Overlay
VRET	Victorian Renewable Energy Target
VTP	Victorian Transmission Plan
VVP	Victorian Volcanic Plains
WA	Work Authority
WBPG	Western (Basalt) Plains Grassland Community
Wind energy guidelines	Planning Guidelines for Development of Wind Energy Facilities in Victoria (DTP, 2023)
WTG	Wind turbine generator
WTOAC	Wadawurrung Traditional Owners Aboriginal Corporation

Glossary

Term	Meaning
Assessment Area	The area surveyed for native vegetation assessments (including habitat hectare assessment), as defined in the Ecological Assessment. The Assessment Area includes the construction footprint within the Project Site, with a 50 m buffer around proposed WTGs and associated hardstands, a 25 m buffer around all other Project infrastructure and ancillary works, and a 6 m wide construction corridor for the underground transmission line.
Avoidance rate	The avoidance rate is the probability that an individual bird or bat will fly around the WTG through alterations in flight path through the Project Site or to fly through the risk zone of the turbine (i.e. the envelope of the tower and blade sweep) and avoid the WTG.
Bilateral Agreement	Bilateral (Assessment) Agreement between the Commonwealth and Victorian Governments. The Bilateral Agreement accredits State assessment process to assess potential impacts on Commonwealth Matters of National Environmental Significance.
Brolga breeding season	In Victoria, Brolga breeding season is between July and December. Brolgas are monogamous with pairs annually returning to wetlands at the start of the breeding season to re-establish territories.
Brolga flocking season	In Victoria, the non-breeding 'flocking' season occurs between January and June. During the non-breeding or 'flocking' season, Brolgas tend to congregate and roost communally on deep freshwater marshes and permanent fresh or saline open water called flock roosts.
Construction footprint	The total extent of land that would be directly impacted by the Project during construction, anticipated to cover approximately 153 ha which is a total of approximately 2.2% of the Project Site.
Involved dwelling	A dwelling located within or outside the Project Site that is owned by a host landholder of the Project.
Host landholder	A landholder that has an agreement in place with the Proponent to host Project infrastructure.
Neighbouring landholder	A landholder that is outside of the Project Site and is not hosting Project infrastructure, but may have a neighbour agreement in place with the Proponent and become involved.
Non-involved dwelling	A dwelling located outside the Project Site that is owned by a landholder without an agreement in place with the Proponent. Also referred to as a non-stakeholder receiver for the purposes of the Environmental Noise Assessment.
Onsite substation	The onsite substation that would be developed within the Project Site. The onsite substation would collect energy generated by the WTGs, and convert the electricity from 33 kV to 220 kV prior to transmission into the NEM via the underground transmission line.

Term	Meaning
Operational footprint	The total extent of land required for Project components during operation (following rehabilitation of some areas post-construction), anticipated to cover approximately 70 ha which is a total of approximately 1% of the Project Site.
Overhead reticulation	Overhead 33 kV cabling connecting WTGs in the east of the Project Site over Naringhil Creek to the onsite substation.
Project Site	The Project Site is the total area within which all Project infrastructure would be developed, including WTGs, the BESS, the onsite substation and the underground transmission line.
Radius of Investigation	The Radius of Investigation (**ROI**) was applied for the desktop assessment in the Ecological Assessment. The ROI consists of a 10km buffer around the Project Site.
Transmission line corridor	The construction corridor of land in which the 220 kV transmission line would be constructed, which has a width of approximately 7 m. The transmission line would be buried in a trench at a depth of 1.4 m and a width of 3.15 m.
Underground transmission line	The operational footprint of the 220 kV underground transmission line extending from the onsite substation to Berrybank Terminal Station.
Underground reticulation	Internal underground 33 kV cabling connecting each WTG to the onsite substation.

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Appendices

Appendix A Map Book

Appendix B Social and Economic Impact Assessment

Appendix C Ecological Assessment

Appendix D Brolga Level 1, 2 and 3 Assessment

Appendix E Draft Bat and Avifauna Management Plan

Appendix F Squadron Energy's Environmental Policy

1.0 Introduction

MHWF Nominees Pty Ltd (**the Proponent**) is proposing to develop the Moreton Hill Wind Farm (**the Project**), a wind farm in south-west Victoria comprising up to 62 wind turbine generators (**WTGs**), a battery energy storage system (**BESS**) and underground transmission line. The Project is in the Central Highlands and Great South Coast regions of Western Victoria within the Golden Plains Shire and Corangamite Shire local government areas (**LGA**). The Project Site is approximately 35 kilometres (**km**) south-west of Ballarat, on the lands of the Wadawurrung Traditional Owners.

The Project is in the proposed Central Highlands Renewable Energy Zone (**REZ**), as identified by VicGrid in the 2025 Victorian Transmission Plan. The primary objective of the Project is to supply renewable energy into the National Electricity Market (**NEM**). In doing so, the Project would enhance and support Victoria's electricity supply as the generation mix transitions towards renewable energy. The Project is anticipated to generate approximately 421 megawatts (**MW**), providing approximately 260,000 households with renewable energy.

In September 2024, the Victorian Minister for Planning determined that the Project does not require an Environment Effects Statement (**EES**) under the *Environment Effects Act 1978* (Vic) (**EE Act**), subject to conditions being met to assess and manage specific impacts. The conditions require an environment report process to be undertaken.

In July 2024, a delegate for the Commonwealth Minister for the Environment and Water determined the Project to be a 'controlled action' under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (**EPBC Act**) due to the potential for significant impact on Matters of National Environmental Significance (**MNES**), including listed threatened species and communities, and listed migratory species.

The Project will be assessed under the Bilateral (Assessment) Agreement between the Commonwealth and Victorian Governments (the **Bilateral Agreement**), which accredits the environment report process to assess potential impacts on MNES, as set out within Part 5 of Schedule 1 of the Bilateral Agreement and in accordance with Section 45 of the EPBC Act.

This environment report has been prepared to satisfy the assessment requirements under the EE Act and EPBC Act, and to ultimately inform the Project's approvals including planning approval under the *Planning and Environment Act 1987* (**P&E Act**) and approval under the EPBC Act.

The Project has been identified on the National Renewable Energy Priority List and will be assessed accordingly to support the renewable energy transition pace needed.

1.1 Project Overview

The Moreton Hill Wind Farm site was identified several years ago in 2020 as a highly compatible area for a wind farm due to the availability of a strong and consistent wind resource, proximity to the existing electricity network, relatively low population density, as well as the ability to avoid and minimise impacts on sensitive receptors (such as dwellings), biodiversity, heritage and other environmental values. Following early site feasibility assessments, the Project's design has evolved to result in a well-considered turbine layout, resulting in minimal impact. The Project's design has been able to avoid and minimise impacts on both State and Commonwealth matters of ecological significance.

The Project involves the establishment of a wind farm and associated electrical infrastructure. Once completed, the Project would accommodate up to 62 WTGs with a maximum turbine blade tip height of up to 252 m above ground level. With a turbine nameplate capacity of approximately 6.8 Megawatts (**MW**) the Project would have an estimated installed generating capacity of 421 MW. The Project would connect into the NEM via a 15 km underground transmission line connecting the onsite substation into Berrybank Terminal Station. The Project also comprises a BESS with a 100 MW / 4 hr storage capacity, that would enable the Project to store and dispatch scheduled and reliable energy to the NEM. The anticipated operational life of the Project is approximately 30 years.

The Project includes the following key components:

- Up to 62 WTGs with a total installed capacity of approximately 421 MW.
- Onsite substation.
- BESS with a storage capacity of approximately 100 MW / 4 hr.
- A 15 km underground 220 kilovolt (kV) transmission line, connecting the onsite substation to the Berrybank Terminal Station.
- Underground and overhead 33 kV electrical reticulation cabling between WTGs and connecting WTGs to the onsite substation and BESS.
- Ancillary infrastructure, including operations and maintenance facilities, permanent hardstands and internal access tracks.
- Temporary infrastructure required during construction, such as concrete batching plants, water sources and supply, site compounds, equipment laydown areas and storage yards.
- Up to four permanent meteorological monitoring masts.
- Eight main site access points off Glenelg Highway and Rokewood-Skipton Road.

The Project will seek planning approval to construct and operate up to 62 WTGs which will be reflected in the development plans and aligns with the Project referrals under the EE Act and EPBC Act. However, an assessment approach considering a higher number of WTGs has been applied to enable ongoing refinement and flexibility in the final layout selection in response to environmental and heritage studies. As such, the impact assessment provides a worst-case scenario with impacts reported herein equal to or greater than what will be recognised through the delivery of 62 WTGs.

Technical assessments prepared to support this environment report and the planning permit applications have assessed a wind turbine layout consisting of 68 WTGs. The assessments considered six additional WTGs beyond the proposed 62 WTGs to allow for flexibility in the Project design and respond to environmental and heritage constraints as they have been identified through the studies completion. WTGs that avoid identified constraints will be prioritised in developing the final layout for the Project. This will allow the Project to seek approval for up to 62 WTGs that have been selected to optimise the avoidance and minimisation of potential impacts. The final wind turbine layout will be reflected in development plans to be submitted as part of planning approval which will only show locations of the 62 WTGs to be constructed and operated.

See **Section 3.0** for further details.

1.2 Purpose of the Environment Report

The purpose of this environment report is to describe the Project and its potential environmental effects, specifically on biodiversity values and socio-economic values, to enable the Victorian Minister for Planning (**the Minister**) to make an assessment on whether the Project would have acceptable environmental outcomes.

An environment report enables efficient examination of specific matters capable of having a significant effect on the environment in a way that is proportionate to the environmental risk posed by the project and need for transparency (DTP, 2023). This environment report provides an assessment of the Project's potential impacts specifically on biodiversity and socio-economic values, as stated in the Minister's reasons for decision (see **Section 5.2.1**).

An environment report does not approve a project but assesses it and its potential environmental impacts on specific matters in a clear and efficient way. The Minister's assessment of the environment report will be provided to State and Commonwealth decision makers to inform approval decisions under relevant legislation, including the EPBC Act and the P&E Act (see **Section 5.2.2**). The Project is seeking planning approval under the P&E Act through two planning permit applications in accordance with Corangamite Planning Scheme and the Golden Plains Planning Scheme, via the Development Facilitation Program (**DFP**) under Clause 53.22.

1.3 Scope of the Environment Report

This environment report has been prepared in accordance with the '*Scope for Moreton Hill Wind Farm Environment Report under EE Act (EPBC Act Bilateral Agreement) EPBC Act Bilateral*' (**the scoping document**). The scoping document was issued by the Department of Transport and Planning (**DTP**) Impact Assessment Unit (**IAU**) in March 2025, to guide preparation of the environment report.

The scoping document outlines the reporting requirements and all matters that must be addressed in this environment report, including matters formally required via the conditions set under the EE Act as well as other matters needed to ensure it meets the requirement of an accredited assessment under the EPBC Act Bilateral Agreement.

The scoping document and the Minister's reasons for decision requires the environment report to focus on the assessment of potential impacts on biodiversity values, particularly avifauna (birds) and bats. The scoping document also requires consideration of potential social and economic impacts of the Project.

The following key requirements are detailed in the scoping document:

- Sufficiently describe the project and assess the likely relevant effects/impacts (direct and indirect) on avifauna including: Brolga, Grey-headed Flying-fox, Southern Bent-wing Bat, Eastern (common) Bent-wing Bat, White-throated Needletail, Yellow-bellied Sheath-tailed Bat, Wedge-tailed Eagle, Blue-winged Parrot, Black Falcon, Brown Treecreeper, Spotted Harrier and White-striped Freetail Bat.
- Document alternative development configurations/layouts, designs and siting of infrastructure, as well as mitigation measures, to further avoid and minimise adverse environmental impacts on threatened species of birds and bats.

- Assess potential cumulative impacts on threatened species of birds and bats together with nearby existing and known proposed windfarms and other infrastructure.
- Include an environment management framework that sets out the proposed environmental management commitments, and how the environmental commitments would be addressed through relevant approvals and consents required for the project.
- The examination of impacts, including the avoidance and minimisation of impacts, within the environment report should inform the configuration of the proposed project the proponent is seeking to develop.

A summary of the environment report structure and where it has addressed matters from the scoping document is provided in **Table 1.1.**

Table 1.1 Environment Report Structure and Associated Scope Items

Report Section No.	Content	Relevant scope item
Section 1.0 Introduction	This section provides an introduction to the Project, the environment report and provides the details of the designated proponent.	Section 4. Description of the project Section 11 Environmental record of the organisation proposing to undertake the project
Section 2.0 Project Rationale	This section provides an overview of the rationale, objectives and justification for the Project.	Section 3. Plans, policies, guidelines and instruments Section 4. Description of the project
Section 3.0 Project Development and Alternatives	This section provides the Project history and background and an overview of design development.	Section 4. Description of the project Section 6. Proposed avoidance and mitigation measures and alternatives considered
Section 4.0 Project Description	This section provides an overview of the Project including details about the Project components.	Section 4. Description of the project
Section 5.0 Approvals and Legislative Framework	This section provides an overview of the environment report process and requirements under the EE Act, the primary approvals required for the Project, and the relevant policies, plans and strategies used to inform preparation of the environment report.	Section 3. Plans, policies, guidelines and instruments Section 4. Description of the project Section 9. Other approvals and conditions
Section 6.0 Consultation	This section provides an overview of consultation activities undertaken for the Project, as well as proposed ongoing consultation planned for the Project.	Section 10. Consultation
Section7.0 Social and Economic	This section provides an overview of the social and economic impacts of the Project (both positive and negative).	Section 7. Social and economic

Report Section No.	Content	Relevant scope item
Section 8.0 Biodiversity	This section provides an overview of the methodologies, existing conditions and assessment of potential impacts of the Project on biodiversity matters. It outlines the proposed avoidance and mitigation measures to be adopted to minimise potential impacts of the Project, provides an assessment of the residual impacts and identifies proposed offsets.	Section 5. Description of the environment and potential impacts. Section 6. Proposed avoidance and mitigation measures and alternatives considered Section 8. Residual impacts and offsets
Section 9.0 Proposed Environmental Management Framework	This section outlines the proposed Environmental Management Framework (**EMF**) for the Project, including environmental management commitments, as well as proposed monitoring, auditing and reporting requirements for the life of the Project.	Section 6. Proposed avoidance and mitigation measures and alternatives considered Section 11. Environmental record of the organisation proposing to undertake the project
Section 10.0 Conclusion	This section provides conclusions as to the expected residual impacts and benefits of the Project and the significance of these impacts.	Section 12. Conclusion
Section 11.0 References	This section provides a list of information sources used to prepare the environment report.	Section 13. Information sources provided in the environment report.

The following supporting documents have been appended to the environment report:

- Map book (**Appendix A**)
- Socio-economic Impact Assessment (**Appendix B**)
- Ecological Assessment (**Appendix C**)
- Brolga Level 1, 2 and 3 Assessment (**Appendix D**)
- Draft Bat and Avifauna Management Plan (**BAM Plan**) (**Appendix E**)
- Squadron Energy's Environmental Policy (**Appendix F**).

1.4 The Proponent

1.4.1 Overview

The Proponent is a special purpose vehicle established for Squadron Energy to facilitate the development and delivery of the Project.

Squadron Energy, with its development partner RE Future, is developing the proposed Moreton Hill Wind Farm.

RE Future is an Australian owned and funded enterprise operated by a small group of seasoned wind industry professionals. The team at RE Future contains extensive experience in wind farm development, with over 50 years of combined experience. Since 2001 they have worked independently or as partners and successfully developed over 840 MW of wind projects that are now built and operating.

Squadron Energy is Australia's leading renewable energy company that develops, operates and owns renewable energy assets in Australia. Squadron Energy have 2 gigawatts (**GW**) of renewable energy in operation and under construction.

1.4.2 Environmental Record

There are no proceedings against the Proponent under a Commonwealth or Victorian law for the protections of the environment or the conservation and sustainable use of natural resources. Details of the Proponent's environmental policies and Environmental Management System are provided in **Section 9.0.**

2.0 Project Rationale

This section provides the rationale for the Project and its key objectives. It details how the Project contributes to key Commonwealth and State legislation and policy relating to renewable energy, greenhouse gas (**GHG**) emissions reduction and energy supply and security.

2.1 Background and Policy Context

This section sets out the background and policy context which provides the key rationale for the Project. This policy context is largely driven by renewable energy and greenhouse gas emissions reduction targets defined by the Commonwealth and Victorian governments.

The primary objective of the Project is to supply renewable energy to the NEM, provide additional electricity regulation and security through provision of energy storage, and support Victoria's transition to increased uptake of renewable energy as the decommissioning of traditional forms of energy generation approaches. The development of renewable energy projects, such as the Project, will play an important role in achieving these goals.

2.1.1 Commonwealth

2.1.1.1 National Priority List

In March 2025, the Australian Government released an inaugural list of 56 renewable energy generation, storage and transmission projects that have been given priority status. The Moreton Hill Wind Farm project is one of these projects listed on the National Renewable Energy Priority List (priority list).

The priority list aims to provide coordinated support for regulatory planning and environmental approval processes for identified priority renewable energy projects across Australia. Priority list projects receive additional support and facilitation through regulatory and environmental processes but will still have the same scrutiny applied as any other project and continue to be required to meet all statutory requirements.

To identify priority list projects, eligibility and prioritisation criteria were developed through the Energy and Climate Change Ministerial Council. Eligibility criteria for the generation projects on the priority list includes being greater than 30 MW and having pre-construction, on-grid, scheduled for completion by 31 December 2031. Prioritisation criteria included having access to transmission infrastructure, contributing to network reliability, as well environment and heritage criteria. Consideration was also given to criteria relating to regional economic importance and community engagement.

Development of the priority list also involved input from states and territories, to ensure priority projects are aligned with respective energy priorities, to ensure a balanced approach across jurisdictions. Project owners are not required, or able, to apply to be included on the priority list.

2.1.1.2 The Paris Agreement

In December 2015, Australia became a party to the Paris Agreement, a legally binding international treaty on climate change (Nations, 2015). Under Article 2 of the Paris Agreement, parties are required to:

1. Hold the increase in the global average temperature to well below 2 degrees Celsius (**°C**) above pre-industrial levels and pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels.
2. Increase the ability to adapt to the adverse impacts of climate change and foster climate resilience and low GHG emissions development.
3. Make finance flows consistent with a pathway towards low GHG emissions and climate resilient development.

In December 2020, Australia made its first Nationally Determined Contribution (**NDC**) under the Paris Agreement, committing to reduce GHG emissions by 26–28% below 2005 levels by 2030 (Australian Government, 2020). Following the Australian federal election in May 2022, a revised 2030 climate target was mandated for Australia, to 43% below 2005 levels by 2030 and net zero emissions by 2050. The Climate Change Bill 2022 received Royal Assent on 13 September 2022, enshrining these targets in legislation in the Parliament of Australia in September 2022 (Prime Minister, Minister for Climate Change and Energy, 2022).

Australia submitted its latest NDC under the Paris Agreement in September 2025, setting a target of reducing emissions by 62–70% below 2005 levels by 2035.

The Project would contribute to these emissions' reduction targets through the generation of renewable energy that would prevent the annual emission of approximately 350,000 tonnes of CO_2 annually.

2.1.1.3 Integrated System Plan

The Australian Energy Market Operator (**AEMO**) acts as the independent planner for the NEM, and manages how energy is priced, sold, and delivered. In recognition that Australia's coal-fired power plants are retiring much faster than anticipated, with 60% of capacity (14 GW) expected to be withdrawn by 2030, AEMO has identified that the NEM would need to triple its overall generation and storage capacity if it is to meet the economy's electricity needs by 2050 (AEMO, 2024). In response to this finding, AEMO released its 2024 Integrated System Plan (**ISP**) in June 2024, which details an 'optimal pathway' for the development of the NEM's generation and transmission infrastructure to support Australia's rapid energy transformation towards net zero emissions by 2050 (AEMO, 2024).

The 2024 ISP outlines the need for 36 GW / 522 GWh of storage capacity in 2034–35, rising to 56 GW / 660 GWh of storage capacity in 2049–50 to help maintain grid stability and inertia, smooth out volatile frequencies, and balance out fast changes in supply and demand (AEMO, 2024). The ISP identified that variable renewable energy capacity from utility-scale generators such as wind and solar will increase nine-fold by 2050, representing an approximately 200% increase in capacity every decade and 98% of total annual generation in 2050 (AEMO, 2024). Both wind and solar technologies will be needed to ensure resource diversity across the NEM, with wind projects expected to account for up to 90% of new utility-scale renewable capacity prior to 2030 (AEMO, 2024).

The Project would contribute to the uptake of renewable energy in the NEM and support the transition to increased renewable energy as outlined in the 2024 ISP.

2.1.2 State

2.1.2.1 The Victorian Climate Change Act

The Victorian *Climate Change Act 2017* (**VCC Act**) provides Victoria with a legislative foundation to manage climate change risks, maximise the opportunities that arise from decisive action, and drive a transition towards a climate-resilient community and economy. Under the VCC Act, Victoria has legally enshrined GHG emissions reduction targets.

In March 2024, the Climate Change and Energy Legislation Amendment (Renewable Energy and Storage Targets) Bill 2023 (the climate change amendment) was passed by the Victorian Government, legislating the following revised targets to reduce Victoria's emissions:

- 28–33% below 2005 levels by 2025
- 45–50% below 2005 levels by 2030
- 75–80% below 2005 levels by 2035
- Net zero emissions by 2045.

This change was driven by recognition that state emissions in 2020 decreased to almost 30% below 2005 levels, achieving and exceeding the 2020 emissions reductions target of 15–20% below 2005 levels (DEECA, 2023).

The VCC Act also introduced policy objectives and guiding principles embedding the consideration of climate change in government decision making.

Victoria's Climate Change Strategy provides a roadmap for achieving these targets, including an energy pledge by the Victorian Government to accelerate Victoria's transition to a 'clean and efficient energy future' (DELWP, 2021a).

The Project is contributing to emission reductions through the provision of 421 MW of renewable energy to replace traditional fossil fuel energy generation, preventing the annual emission of approximately 350,000 tonnes of CO_2 annually.

2.1.2.2 Victorian Renewable Energy Targets

In December 2017, the Victorian Government legislated a series of Victorian Renewable Energy Targets (**VRETs**) for renewable energy generation under the *Renewable Energy (Jobs and Investment) Act 2017* (Vic) (**RE(JI) Act**). The following VRETs were legislated under the RE(JI) Act in 2017:

- 25% by 2020 (achieved)
- 40% by 2025
- 50% by 2030.

As noted above, renewable energy sources generated more than 26% of Victoria's electricity in 2020, enabling Victoria to meet the first VRET target. The recently passed Climate Change and Energy Legislation Amendment (Renewable Energy and Storage Targets) Bill 2023 legislated the following updated renewable energy targets under the RE(JI) Act (DEECA, 2024a):

- 65% by 2030
- 95% by 2035.

Investment into VRET initiatives by the Victorian Government has also resulted in the Victorian Renewable Energy Auction Scheme, which has contracted 928 MW of generation capacity and is expected to deliver a further 600 MW of renewable energy generation following the second VRET auction (DELWP, 2021b). These programs reflect the Victorian Government's commitment to large-scale and coordinated roll-out of renewable energy development.

The Project will contribute to achieving Victoria's renewable energy targets, by providing 421 MW of renewable energy into the NEM the equivalent of powering approximately 260,000 households.

2.1.2.3 Renewable Energy Zones – Victorian Transmission Plan

The Project is located in the proposed Central Highlands Renewable Energy Zone (**REZ**), as identified by VicGrid in its 2025 Victorian Transmission Plan (**VTP**) (VicGrid, 2025). Proposed REZs are areas identified as most suitable to host renewable energy generation and storage projects. The 2025 VTP considers the proposed Central Highlands REZ to offer high-quality wind resources and access to the existing transmission network capacity.

VicGrid considered several factors in shaping the proposed Central Highlands REZ in response to community and industry feedback, including avoiding agricultural land (including horticulture production around Ballarat and Ballan) and protecting areas of significant environmental value, especially areas with a high concentration of wetlands. The proposed REZ was sited to be close to the existing transmission infrastructure to coordinate connections and reduce the overdevelopment of transmission lines.

The next step in the process involves the Minister for Energy and Resources formally declaring the proposed REZ. The REZ declaration process requires that the Minister make a declaration in a formal order (Order), which will set out key information on the REZ to be declared, including a map of the REZ boundaries and the intended transmission hosting capacity within the REZ. A draft of the Order was placed on public notice in November 2025 until March 2026 to enable the community and industry to provide comment, before formal declaration of the REZ. The Victorian declared REZs will provide benefits for communities and energy developers by improving coordination of infrastructure projects to minimise social and environmental impacts.

Being within the proposed Central Highlands REZ, the Project aligns with VicGrid's VTP by leveraging planned grid upgrades, enabling efficient connection and supporting Victoria's renewable energy goals.

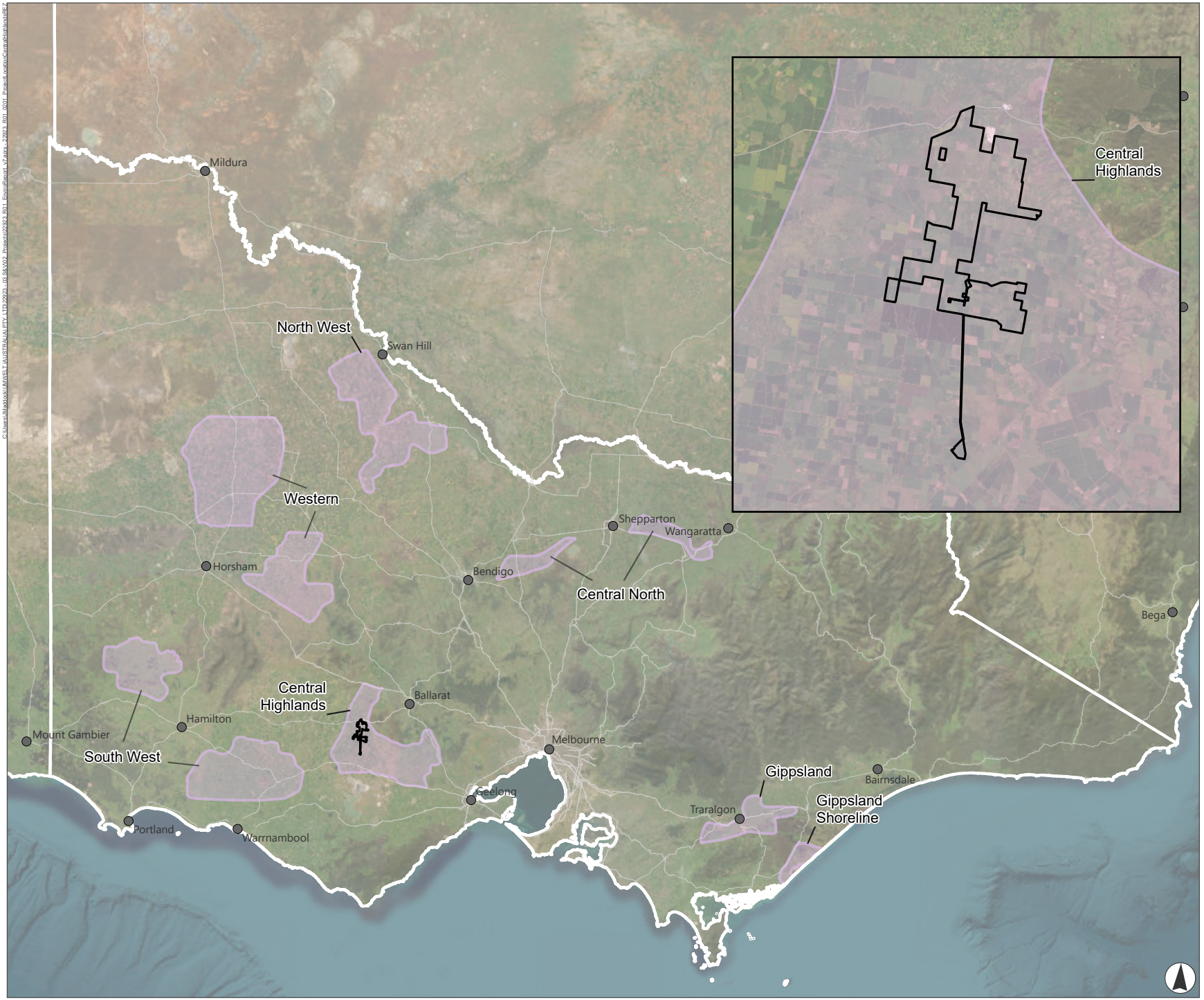

FIGURE 2.1

Project location within the proposed Central Highlands REZ

Legend

- Project Site
- Proposed REZs - Vic
- State Border
- Major Roads

0 50 100

Kilometres

Scale 1:3,700,000 at A4
GDA2020 MGA Zone 54

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Image Source: ESRI Basemap (2026) | **Data Source:** DEECA (2025), Squadron Energy (2026), VicGrid (2025)

2.2 Project Objectives

The fundamental objective of the Project is to supply, enhance and support Australia's NEM through the generation of wind-powered renewable energy. This objective is in accordance with:

- Australia's emissions reductions targets of 62–70% below 2005 levels by 2035 and net zero emissions by 2050.
- Victoria's legislated emissions reduction targets of a 75–80% reduction below 2005 levels by 2035, and net zero emissions by 2045.
- Current VRETs, which are targeting renewable energy generation contributions to the NEM of 65% by 2030 and 95% by 2035.

Key environmental and social objectives for the Project are to:

- Maximise avoidance of environmental, heritage and social impacts through adaptive design in response to technical assessment findings and identify appropriate, Project-specific mitigation and management measures.
- Ensure responsive and sensitive design to respond to the needs of the local community and relevant stakeholders, as far as practicable.
- Limit impact on the existing land use of the Project Site to ensure, where practicable, the ongoing use of agricultural land during the operation of the Project.
- Provide a stable source of income over 30 years to involved landholders, offering long-term financial security for farming households that often face income variability from seasonal and market conditions, as well as future drought risk.
- Build and maintain strong relationships with stakeholders and the community, through regular, consistent and considered consultation to ensure their expectations and preferences are understood and considered in the decision-making process.
- Engage with the Wadawurrung Traditional Owners Aboriginal Corporation (**WTOAC**) to maximise opportunities for the Project to be developed in a culturally sensitive way, considering any tangible and intangible heritage values relevant to the Project Site and to support a focus on the avoidance of potential impacts on Aboriginal cultural heritage.
- Maximise Project benefits (see **Section 2.4**) such as affordable electricity production, local jobs and investment and direct financial benefits to hosts and neighbours and the local community, while avoiding or minimising adverse impacts on the local and regional community.
- Collaborate with identified stakeholders and WTOAC on potential local benefit sharing opportunities to ensure they are co-designed, targeted and appropriate to the Project's operating context.

2.3 Site Selection

Selecting a suitable site to develop a wind farm requires a careful balance of many factors, such as the available wind resource, access to the electricity network, suitable terrain and compatible surrounding land uses, the ability to avoid and minimise impacts on sensitive receptors (such as dwellings), biodiversity, heritage and other environmental values.

The Project has been sited based on the following rationale:

- A strong and consistent wind resource to power Project WTGs.
- Proximal access to the electricity network to export energy generated by the Project at Berrybank Terminal Station grid connection point to support the Project.
- Generally undulating terrain throughout the Project Site, with some discrete areas of small steeper hills in the north of the site, generally facilitating the construction of a wind farm as well as providing natural screening from surrounding viewpoints at topographic highs.
- Surrounding agricultural land uses and zoning that are largely compatible with development of a wind farm, given these practices can continue to operate around the wind farm once operational.
- Land use zoning that permits wind energy facilities and utility installations (transmission infrastructure).
- Minimal native vegetation present, with almost all native vegetation limited to roadside vegetation enabling a very high level of avoidance by Project infrastructure (with majority of Project infrastructure located in agricultural cropped paddocks).
- The surrounding area has a relatively low population density, resulting in suitable distances between Project infrastructure and dwellings to minimise potential amenity impacts.
- Proximity to existing transport networks as well as the presence of existing access points to the road network.
- Ability to avoid or minimise impacts on environmental values from Project infrastructure and construction footprint.
- Potential availability of natural resources adjacent to the site (e.g. Skipton Quarry) to supply raw quarry material for the construction phase.

The rationale for the Project Site location was further strengthened by VicGrid's 2025 VTP, with the Project being located within the proposed Central Highlands REZ.

2.4 Project Benefits

This section provides an overview of the benefits anticipated to be generated by the Project.

2.4.1 Wind Energy Generation Benefits

Renewable-based electricity generation (led by wind and solar) is the fastest growing energy source on a global scale, with wind-generated electricity playing an important role in Australia's transition to net zero by 2050. In 2024, renewable energy provided 40% of Australia's total electricity generation, up from 39.4% in 2023. Wind-based generation currently contributes the largest amount (13.4%) of utility-scale generation capacity in Australia representing 33.5% of Australia's total renewable generation capacity (Clean Energy Council, 2025).

Wind energy provides several benefits, including:

- An infinite source of renewable energy.
- A low-cost source of electricity.
- Compatibility with a variety of existing land uses, such as agriculture.

- Small operational infrastructure footprint (often around 1–2% of the total project land is occupied by permanent infrastructure).
- No associated air emissions of toxic substances or contaminants, such as GHG or particulates.
- Minimal waste generation during operations and negligible chance of contamination to the surrounding land or water resources from operating assets.
- Efficient rehabilitation of agricultural sites to pre-development conditions following decommissioning.
- Generation of income for host landholders and nearby landowners, as well as economic benefits to the broader community through the use of local services and employment and community benefit funding.

Wind energy is a virtually carbon-free and pollution-free electricity source (Pryor, et al., 2020). Although wind energy does not require the emission of GHG during operations, emissions are generated through the use of non-renewable energy sources during the construction phase and during the manufacturing process of components and materials. Over the lifetime of a wind farm, GHG emissions are typically 97% lower than for coal-fired power plants and 70% lower than solar (Moss, et al., 2014).

2.4.2 Environmental Benefits

Australia is one of the largest emitters of carbon dioxide per capita in the world (Ritchie, et al., 2023). Australia is highly exposed to the impacts of climate change such as extreme weather conditions and sea level rise, which further demonstrates the need to reduce carbon emissions (CSIRO, 2022).

The primary environmental benefit of the Project is the contribution it would make towards reducing GHG emissions by displacing fossil fuel combustion electricity generation with a renewable energy source.

The Project is anticipated to produce over 1,600 GWh of renewable energy electricity per annum for up to 30 years, which is enough to power approximately 260,000 homes annually. Renewable energy generated by the Project would prevent the annual emission of approximately 350,000 tonnes of CO_2 that would otherwise be emitted by the equivalent generation via traditional fossil fuel combustion. This would significantly contribute to emissions reduction required for Victoria to reach it's legislated 45–50% reductions by 2030 target.

Renewable energy generated by the Project would therefore not only contribute to energy security in Victoria but would also assist the State and Commonwealth in achieving emissions reduction and renewable energy targets under respective policies and strategies centred upon mitigating climate change (see **Section 2.1**).

2.4.3 Socio-economic Benefits

The Project represents a capital investment of $1.5 billion and is expected to provide economic and social benefits to the local region and broadly across Victoria. Of this, the construction phase is projected to contribute $150 million in wages, contracts, and other service provisions to the region's economy over a 24-month period. The Project is anticipated to generate a total economic stimulus of $200 million during its 30-year operational phase, relating to host landholder and neighbour payments, operational wage stimulus, payment in lieu of rates to councils, and community benefit scheme payments.

During construction, the Project is expected to support a workforce of 360 full-time equivalent (FTE) jobs each month, including 140 directly related to the Project's onsite construction activities (direct FTEs), and 220 indirect FTE jobs through employment generated from supplying industries (such as accommodation, food, trade supplies, waste management and mechanical support). These numbers would rise to 320 direct FTEs and 510 indirect FTEs during peak construction (estimated to last several months).

The Project is expected to source 50% of its total direct FTEs locally, averaging 70 FTE jobs, and increasing to 160 FTE local jobs at peak, with the remaining 50% sourced from outside the region (also averaging 70 FTE jobs and rising to 160 FTE non-local jobs at peak) subject to competing project demand, regional workforce skills and competitive procurement processes.

Additionally, the Project will support up to 40 FTE operational jobs (10 direct and 30 indirect), with 16 FTE jobs supported in the region. This includes 10 FTE jobs directly onsite (6 of which would be sourced locally).

An estimated $7 million in economic stimulus is expected to benefit local businesses and service providers due to the temporary influx of non-local workers during the 24-month construction period. This expenditure is projected to create approximately 18 FTE jobs in the services sector and increase spending that would support employment such as retail, accommodation, trade supplies, health services, fuel supplies, cafes, and restaurants.

Further information on social and economic impacts and benefits is provided in **Section 8.0.**

2.4.4 Community Benefits

The Project is anticipated to generate substantial community benefits in several key areas:

- **Landholder and neighbour benefits**: Both participating and neighbouring landholders will receive direct benefits enhancing their financial stability.
- **Investment in social infrastructure and community groups**: Increased investment will be directed towards social infrastructure and community groups, fostering community development and improving local amenities and services.
- **Employment opportunities**: The Project will create numerous job opportunities during both the construction and operational phases, supporting local employment and contributing to economic growth in the region.
- **Positive impacts on local businesses**: The Project will have flow-on effects for local businesses, stimulating economic activity and encouraging business growth across both LGAs.

The Proponent has established agreements with participating landholders, who will host WTGs on their properties, ensuring additional income for 30 years. Furthermore, neighbouring landholders within 4 km of a WTG can also receive direct benefits through a voluntary neighbour agreement. This initiative would positively impact the livelihoods of farming households and communities by providing greater financial stability through a diverse and consistent income stream. International research has also demonstrated that wind farm development in rural areas offers farmers opportunities to 'future-proof' their businesses by stabilising farming incomes.

The Proponent proposes to implement a community investment fund aimed at supporting social infrastructure and includes a sponsorship program to support community groups. This scheme includes a standalone community investment program, providing up to $442,050 annually ($1,050 per MW annually), and direct payments in lieu of rates (**PiLoR**), contributing $15.5 million to Golden Plains Shire and Corangamite Shire over the Project's life. The community investment program will deliver these funds for the Project's 30-year operational life.

Community investment has the potential to significantly enhance the quality of life and health and well-being of rural communities, especially in regional areas where council rate collections may be limited due to low or negative population growth. A sponsorship program to the value of $40,000 annually (in effect since 2023) is committed to as part of the Community Benefit Scheme. To date, funding has been provided to local community groups including Skipton Football Netball Club, Linton Bowls Club, Skipton Primary School, Lismore Landcare and Friends of the RSL (see **Section 6.7**).

As outlined in **Section 2.4.3**, the Project will create employment opportunities within the community, leading to positive flow-on effects. These include increased benefits for local business owners in Skipton, Linton, and the wider region, driven by an estimated $7.0 million in spending by the Project's construction workforce over 24 months. Additionally, the construction and operation of the Project would provide employment benefits and technical training opportunities to the local community, enhancing economic prospects for women in construction and First Nations people. These benefits will be realised through the preparation and implementation of an Employment Strategy and an Industry and First Nations Participation Plan.

2.4.5 Energy and Grid Security Benefits

As outlined in **Section 2.1.2.3**, the Project is in the proposed Central Highlands REZ, an area identified by VicGrid to offer high-quality wind resources and access to the existing transmission network capacity for renewable energy projects. Development of the Project would generate a steady and consistent supply of renewable energy, enabling competitive pricing and support Victoria's energy transition (**Section 2.1.2**).

With the planned closure and decommissioning of Victoria's coal-fired power plants in the coming years, there is an urgent need for a state-wide energy transition. AEMO has identified the closure of coal-fired plants, as well as predicted coal and gas supply shortages, as a risk to the reliability of the NEM. Disruptions to the reliability of the NEM would affect energy consumers, including businesses and households, through reduced or interrupted supply of electricity and increased prices (AEMO, 2023).

AEMO has forecast the NEM to require approximately 83 GW of utility-scale wind and solar generated electricity by 2034-35 and 127 GW by 2049–50, representing a seven-fold increase in magnitude compared with the current NEM capacity of 19 GW (based on the 2024 ISP) (AEMO, 2024).

The Project involves provision of a BESS, co-located with the onsite substation. BESS play an important role in helping to stabilise the electricity grid and integrate renewable energy sources. Wind energy generation can be variable due to wind speeds and other weather conditions, which can create fluctuations in the electricity grid, leading to issues with grid stability and reliability. The Project BESS would help in smoothing out fluctuations in the electricity grid, by storing excess energy when wind generation is high and releasing it when wind generation is low, thereby helping to stabilise the grid.

BESS can also provide various grid services such as frequency regulation, voltage support, and black start capabilities. These services are crucial for maintaining the stability and reliability of the electricity grid, especially with the increasing penetration of renewable energy sources like wind power.

2.4.6 Implications of the Project Not Proceeding

The Project would play an important role in improving energy security and directly contributing to State and Commonwealth renewable energy and emissions reduction targets. The Project would also generate important economic and social benefits within the local region, as well as more broadly within Victoria.

Should the Project not proceed, the following benefits associated with the Project would not be realised:

- Approximately 421 MW of renewable energy would not be available in the grid, which would need to be generated or offset by alternative sources, potentially requiring the development and approval of other new projects, potentially requiring significantly more financial investment or less optimal generation capacity.
- Service providers and businesses within both the local region and Victoria would not receive economic benefits otherwise associated with the development, construction, and operation of the Project. Additionally, $15.5 million of council rates would not be contributed to the local community.
- Community benefits such as the employment, training and upskilling of local people, as well as procurement opportunities for local businesses and services providers would not be realised. Specifically, up to 360 FTE employment opportunities during construction and 40 FTE opportunities during operations would not be available.
- Benefits schemes proposed including financial incentives under neighbour agreements (up to $30 million over the Project's life), and community investment fund payments of $13 million would not proceed, resulting in significant financial losses to the local community that would otherwise be provided over a 30-year period.
- Annual income for all host landholders would not be realised. This would be a loss of an important economic boost to farmers that would provide a secure supplementary income annually, for decades. This income would provide a stable addition to farming income and helps to counteract swings of commodity prices and climate change – helping farmers drought-proof their business. Without this annual income, farming practices may not be sustained.

3.0 Project Development and Alternatives

As outlined in the scoping document, "*the environment report must document alternative development configurations/layouts, designs and siting of infrastructure… to further avoid and minimise adverse environmental impact*s".

This section provides an overview of the Project's design development since inception in 2020 (**Section 3.1**), and details the alternatives assessed within this environment report (**Section 3.2**).

3.1 Project Design Development History

Investigations into the suitability of the land and project feasibility have been ongoing since 2020. The current Project Site (see **Figure 4.2**) was chosen due to the availability of a strong and consistent wind resource, proximity to the existing electricity network, relatively low population density, as well as the ability to avoid and minimise impacts on sensitive receptors (such as dwellings), biodiversity, heritage and other environmental values. See **Section 2.2** for more information regarding site selection.

In 2021, several preliminary assessments were conducted for the Project. These were followed by a series of ongoing technical investigations and assessments, which included ecological and cultural heritage assessments. The findings of these assessments have strongly informed the Project design development, the Project referrals under the EE Act and EPBC Act, as well as the current Project design.

An overview of design development changes for key project components is outlined in **Table 3.1.** Further detail on design refinement to avoid impacts on biodiversity values is provided in **Section 8.5.1.**

Table 3.1 Overview of Key Design Development Changes for Key Project Components

Project component	Overview of design development	Figure reference
Project Site and WTG layout	The Project Site and WTG layout have gone through several revisions and refinement since Project inception in 2020. The following key revision milestones for the Project Site and WTG layout include: • **Revision 1 (20 WTGs) – 2020** ○ The original Project Site and WTG layout was first identified and secured in 2020. The Project's location was identified through a desktop constraints analysis process, and was selected based on available setbacks from dwellings, a known strong wind resource and the positive outcomes of preliminary assessments of biodiversity matters. ○ The Project Site also contained limited remnant native vegetation that would be impacted by the construction or operation of the Project, it is appropriately zoned for wind energy facilities, is within an area of low population density proximity to existing transport networks and offers the opportunity to avoid or minimise impacts on biodiversity, cultural heritage and other environmental values. ○ The original Project Site and layout had sufficient capacity to host 20 WTG (120 MW). • **Revision 2 (35 WTGs) – 2022** ○ To support justification and cost for the preferred grid connection option, the Project Site boundary was subsequently expanded to accommodate up to 35 WTGs (see below details on grid connection design development). At this time the project was acquired by Squadron Energy. • **Revision 3 (62 WTGs) – 2023** ○ In early 2023 the layout was further expanded south to accommodate up to 62 WTGs to maximise the potential of secured land and the excellent wind resource on site. ○ The main drivers behind this expansion are the ability to provide additional renewable energy into the grid, offsetting additional GHG emissions and providing power to more homes in Victoria. The expansion would also help further offset grid connection costs. This was the WTG layout referred under the EE Act and EPBC Act.	**Figure 3.1 – Figure 3.4**

Project component	Overview of design development	Figure reference

	• **Revision 4 (68 WTGs) – 2025**
	  ○ Following submission of referrals, expressions of interest from neighbouring landholders and findings of further ecological investigations resulted in the Project Site boundary and WTG layout being altered. See **Section 3.1.1** below. The revised layout and boundary was supported by DTP IAU as not requiring re-referral under the EE Act, and was approved by DCCEEW under the formal EPBC Act referral variation process.
	  ○ The WTG layout was revised in response to ongoing Brolga assessments, with 7 WTGs relocated from the west of the Project Site to the east based on proposed turbine-free buffers around Brolga habitat at Lake Widderin.
	  ○ This is the current WTG layout being assessed in the environment report and planning permit applications. Noting a layout of 68 WTGs is being assessed, however the Project is only seeking planning approval to construct and operate 62 WTGs (see **Section 3.2**). The environment report therefore provides a worst-case impact scenario for the Project.
	Among these milestone revisions, ongoing refinement and adjustments to the WTG layout has occurred, in response to several drivers:
	• Responding to host landholder requests and preferences for WTG locations.
	• Responding to ecological findings, including confirmed Brolga breeding and flocking habitat at Lake Widderin (see **Section 8.5.1**).
	• Ensuring compliance with applicable noise limits.
	• Ensuring compliance with applicable shadow flicker limits.
	• Avoiding intersecting with communication links to avoid electromagnetic interference impacts.
	• Avoiding areas of identified cultural heritage sensitivity, identified and confirmed through standard and complex CHMP assessments.
	• Increasing capacity to ensure the viability of undergrounding the transmission line	

Grid connection	Early assessments identified three possible grid connections for a wind farm at Moreton Hill: • Option 1 – Connection at the Berrybank Terminal Station south of the Project with a new, dedicated 66 kV powerline. • Option 2 – Rebuild of the BAS 11 – 22 kV powerline by “overhanging” a 66 kV powerline to Ballarat South Zone Substation. Total length would be 44 km. • Option 3 – Connection to Ballarat Terminal Station via the Ballarat to Terang 220 kV powerline easement using a new, dedicated 66 kV powerline. Total length would be 54 km.	**Figure 3.5**

Project component	Overview of design development	Figure reference
	Based on the early Project designs (pre-2022) it was found that significant cost would be required to connect to the Berrybank Terminal Station and Ballarat Terminal Station options (Option 1 and 3), but that a wind farm of 120 MW/20 WTGs could justify the costs of connection to Ballarat South Zone Substation (Option 2). This option was prioritised and investigated. Further investigation of the wind farm capacity in 2022 found that up to 35 WTGs could be accommodated on land under agreement. However, the capacity of 35 WTGs could not be supported by the BAS connection option (Option 2). In early 2022, RE Future began consultation with AusNet to determine the potential for a connection into Berrybank Terminal Station. Based on a wind farm of 35 WTGs or greater, each with a capacity of 6.2 MW (217 MW), it was determined that connection may be feasible. At this time options 2 and 3 were ruled out. Option 1 was further developed and refined as the Project evolved from 2023 onwards, with the aim to avoid and minimise potential environment and social impacts as much as practicable.	
Transmission line	With Option 1 for the grid connection determined at Berrybank Terminal Station, transmission line connection options were then developed. The original design for the Project's transmission line involved an overhead transmission line through private property east of Willowvale Road. However, feedback obtained through consultation with Project neighbours and Golden Plains Shire Council indicated a preference for the Project's transmission line to be underground, primarily due to potential landscape and visual impacts associated with an overhead line. Based on this feedback and in consideration of the potential landscape and visual effects on nearby dwellings and the potential avifauna collision risk with an overhead transmission line, the Proponent explored the potential to underground the transmission line along Willowvale Road. Following further design and on-site investigations, it was ultimately decided to proceed with this underground design option in 2023. Undergrounding the transmission line removed any potential landscape and visual impacts on nearby dwellings, removed potential collision risk for avifauna, and also avoided impacting on significant amounts of native vegetation. Siting of the underground transmission line in response to biodiversity values is detailed in **Section 8.5.1.**	**Figure 3.6**

Project component	Overview of design development	Figure reference
BESS, onsite substation and O&M facility	The BESS, onsite substation and O&M facility have all been located together within the Project layout for operational efficiency. These facilities were originally located on the south-west corner of Hendersons Road and Rankin Road, as detailed in the referrals under the EE Act and EPBC Act. However, in response to landowner feedback the BESS, onsite substation and O&M facility were relocated approximately 250 m north along Rankin Road (now north-west corner of Hendersons Road and Rankin Road). The facilities were also reorientated based on landholder feedback. This design change did not result in any changes or additional impacts on biodiversity values.	**Figure 3.7**
Underground electrical reticulation	The underground electrical reticulation network within the Project Site has been iteratively revised in response to the WTG layout development and constraints identified throughout technical assessments. Underground reticulation cabling between WTGs and to the Project substation has been relocated or reconfigured at several areas and over several iterations, to avoid native vegetation or to co-locate with internal access tracks to mitigate the total extent of disturbance. Such design changes for underground reticulation have happened several times over the Project's design development. Key examples of underground reticulation being revised to avoid native vegetation are detailed in **Section 8.5.1**.	**Figure 8.19** and **Figure 8.20**
Overhead reticulation	Initial designs of the Project layout involved underground reticulation cabling crossing Naringhil Creek. Further assessment and design development resulted in this section of reticulation being re-designed to be overhead and span this creek crossing. This avoids direct impact on the creek and associated native vegetation mapped adjacent to the creek bed.	Figure 8.18
Access tracks	Design of the access track network throughout the Project Site has prioritised the use of existing access infrastructure where possible, as well as alignments that minimise the total extent of tracks required for access to infrastructure while also avoiding and minimising impacts to local traffic, waterways, and native vegetation on site or along adjacent roadsides. Given the Project Site predominantly consists of agricultural land which has historically been significantly cleared for agricultural activities, the Proponent has designed the access track network to occupy this cleared land and avoid patches of native vegetation where possible. Where access tracks are required to cross roadsides, or roads upgrades were required, areas of native vegetation were avoided in the first instance. However, where complete avoidance was not possible, patches of areas of lower quality vegetation was targeted over higher quality patches. See **Section 8.5.1** for further details.	**Figure 8.21**

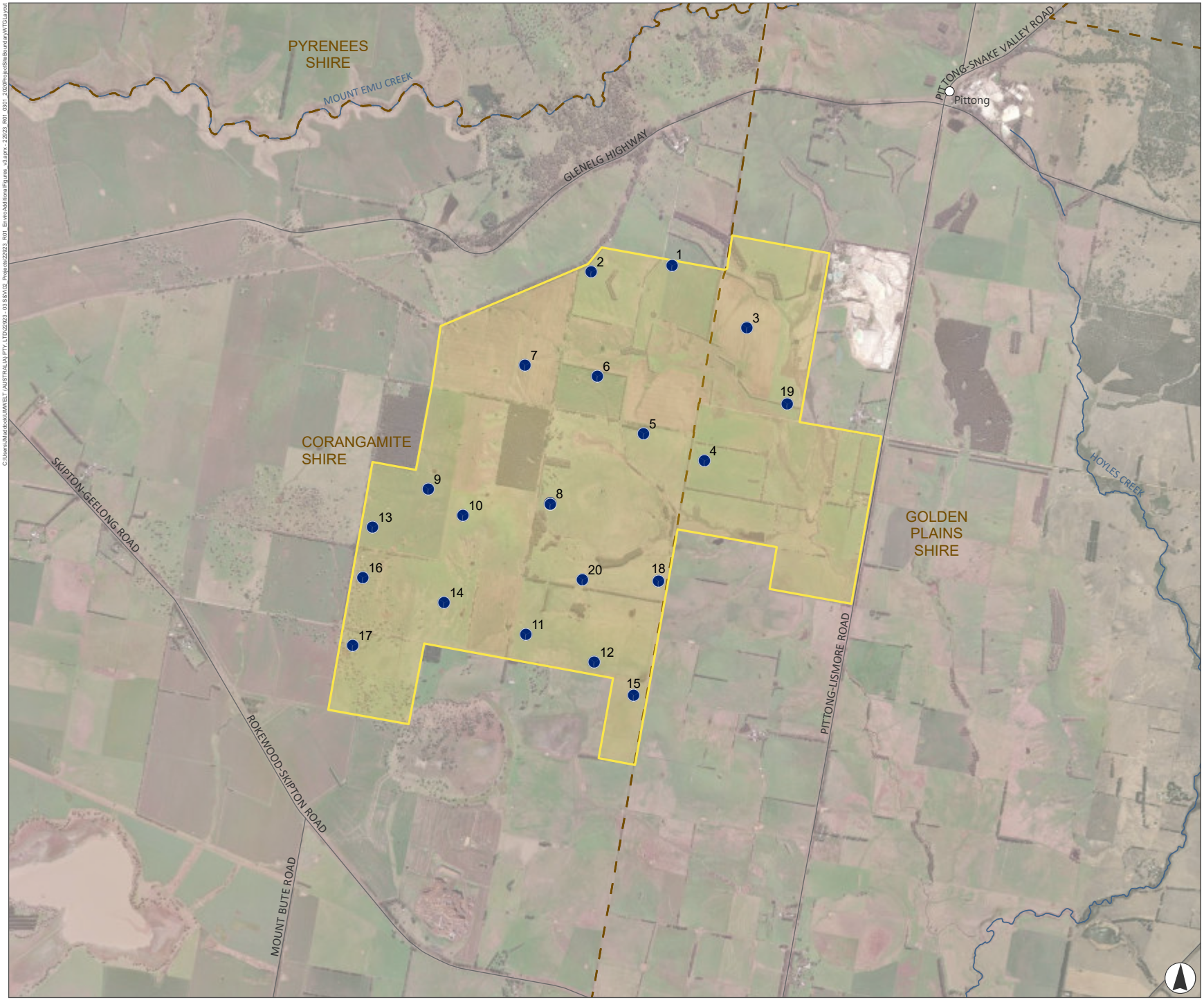

FIGURE 3.1

2020 Project Site Boundary and WTG Layout

Legend

- Project Site (2020)
- WTG Layout (2020)
- Local Government Area
- Roads
- Major Watercourse

0 1 2

Kilometres

Scale 1:50,000 at A4
GDA2020 MGA Zone 54

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FIGURE 3.2

2022 Project Site Boundary and WTG Layout

Legend

- Project Site (2022)
- WTG Layout (2022)
- Local Government Area
- Roads
- Major Watercourse

0 1 2

Kilometres

Scale 1:60,000 at A4
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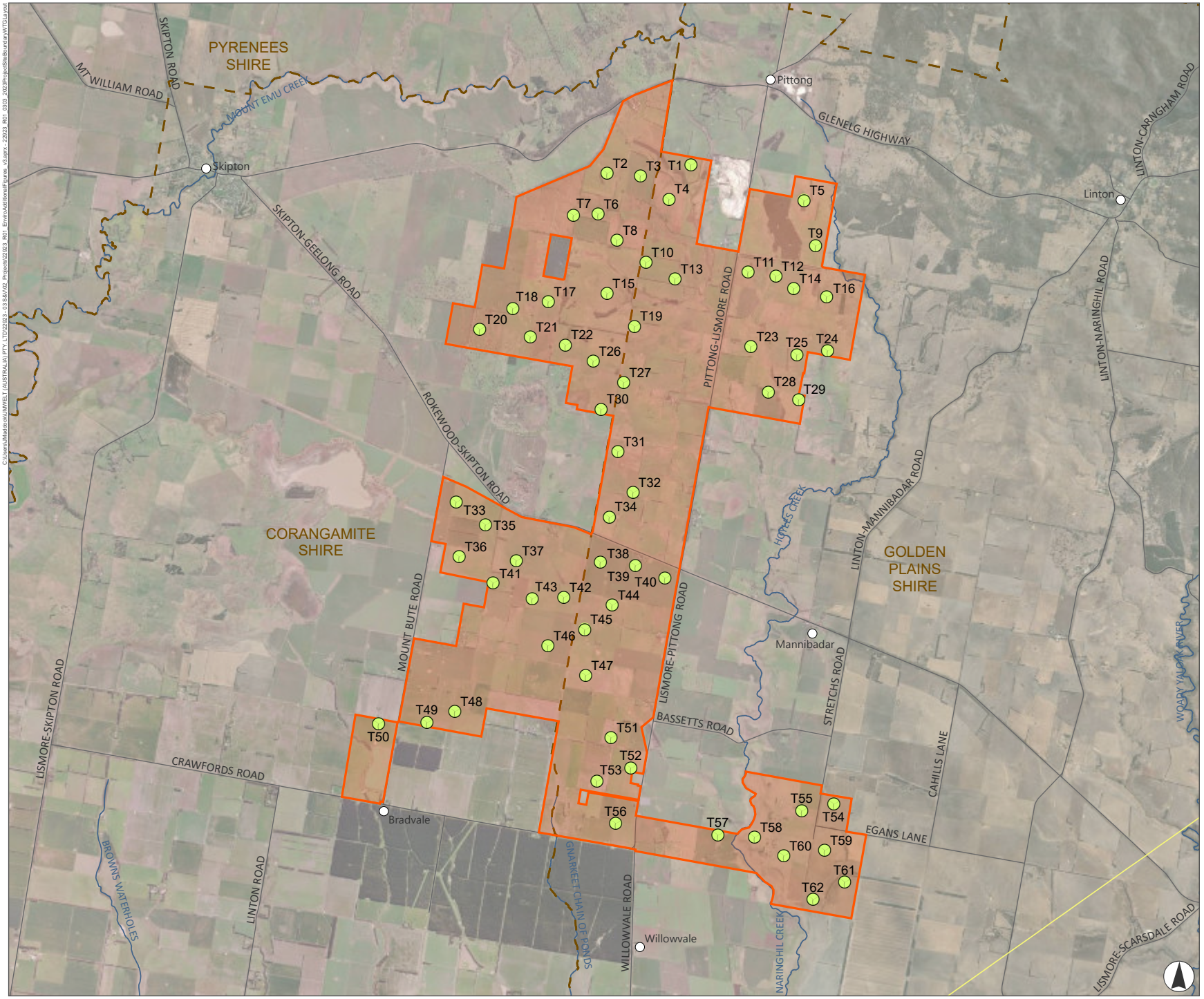

FIGURE 3.3

2023 Project Site Boundary and WTG Layout

Legend

- Project Site (2023)
- WTG Layout (2023)
- Local Government Area
- Existing 220kV Transmission Line
- Roads
- Major Watercourse

0 2 4

Kilometres

Scale 1:100,000 at A4
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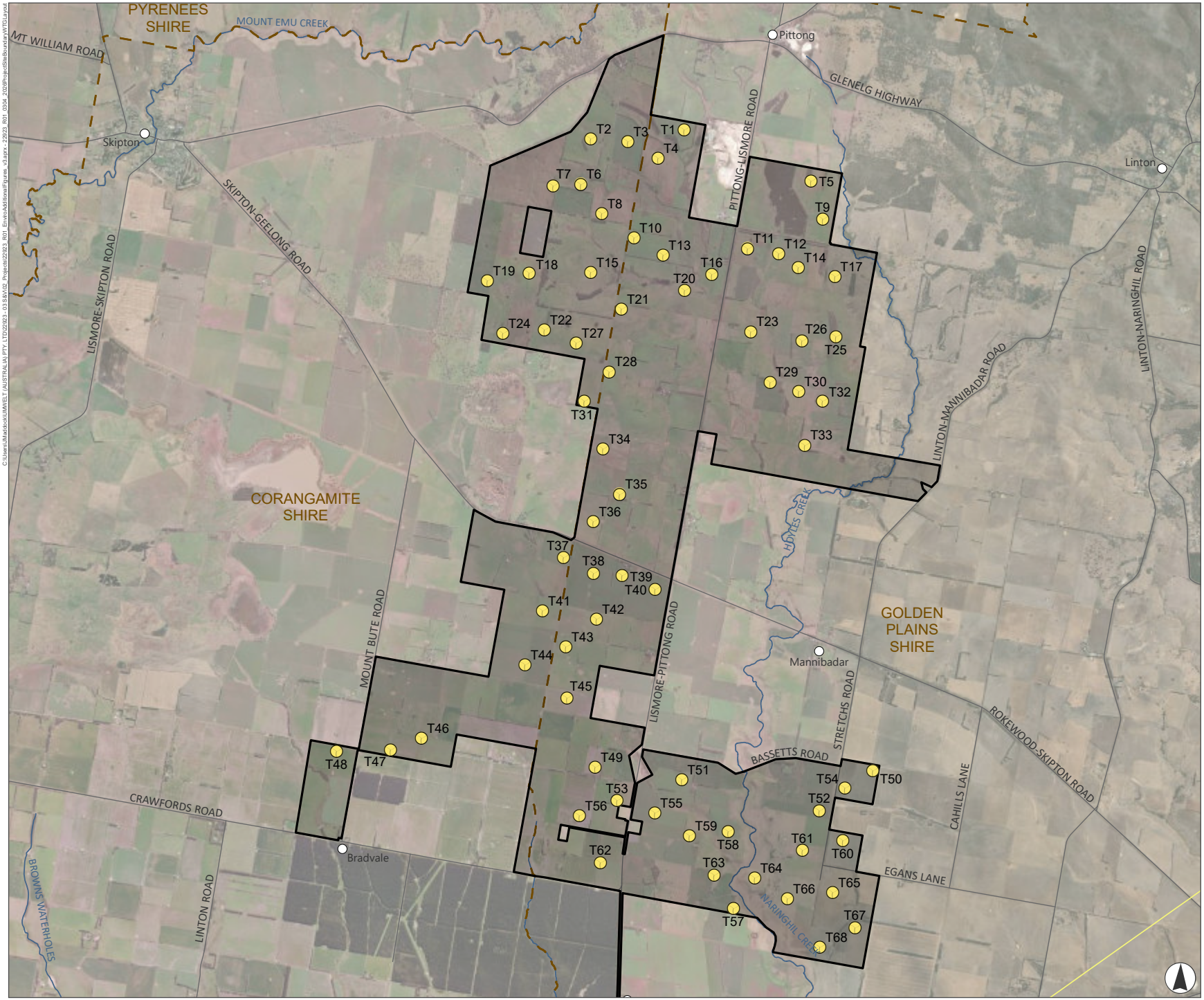

FIGURE 3.4

2026 Project Site Boundary and WTG Layout

Legend

- Project Site (current)
- WTG Layout (current)
- Local Government Area
- Existing 220kV Transmission Line
- Roads
- Major Watercourse

0 2 4

Kilometres

Scale 1:90,000 at A4
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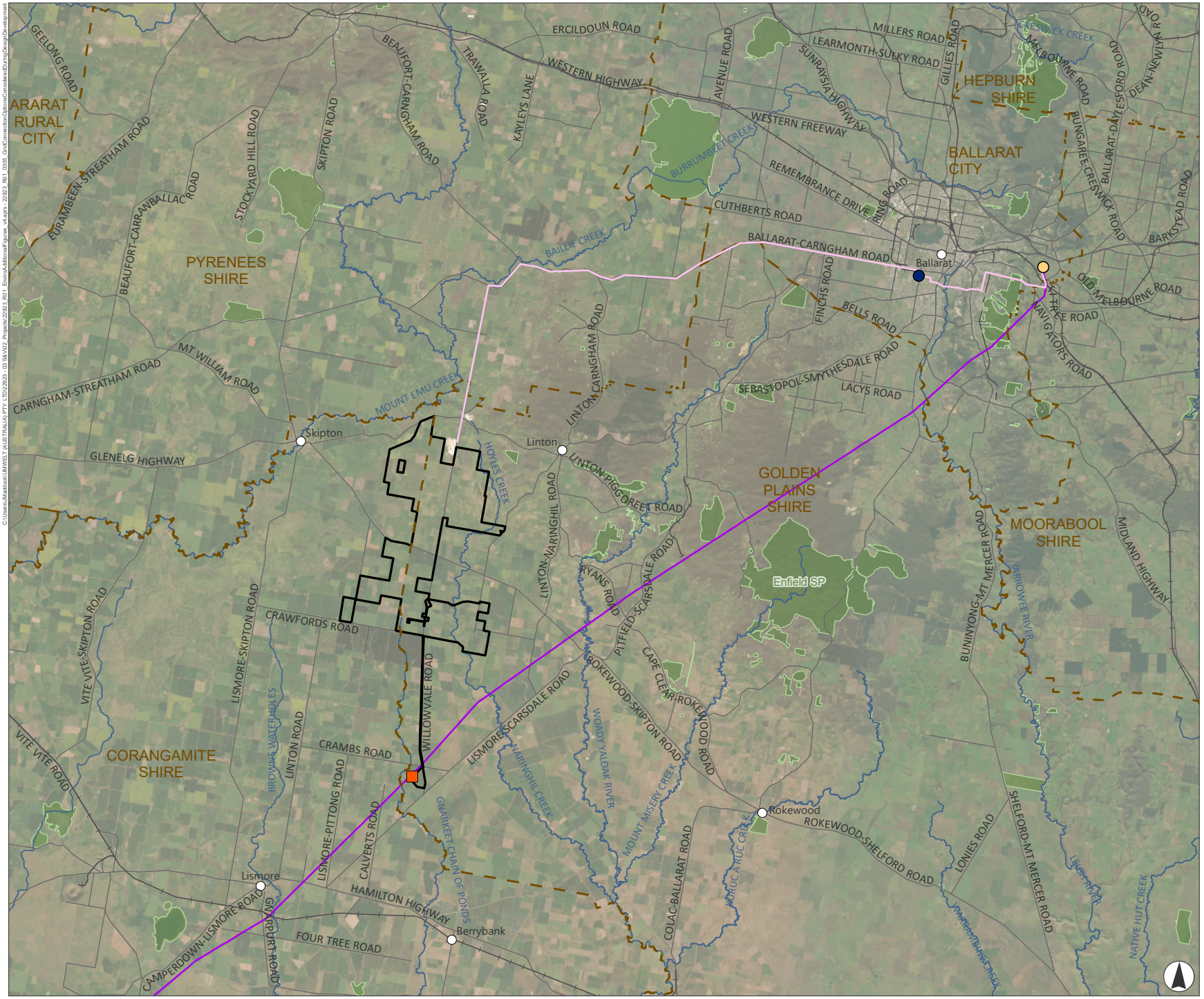

FIGURE 3.5

Grid Connection Options Considered During Design Development

Legend

- Project Site
- Berrybank Terminal Station
- Ballarat Terminal Station
- Ballarat South Zone Substation
- 220kV Transmission Line: Terang - Ballarat
- BAS pwerline
- Local Government Area
- Roads
- Major Watercourse
- Railway
- Parks and Reserves

0 5 10

Kilometres

Scale 1:350,000 at A4
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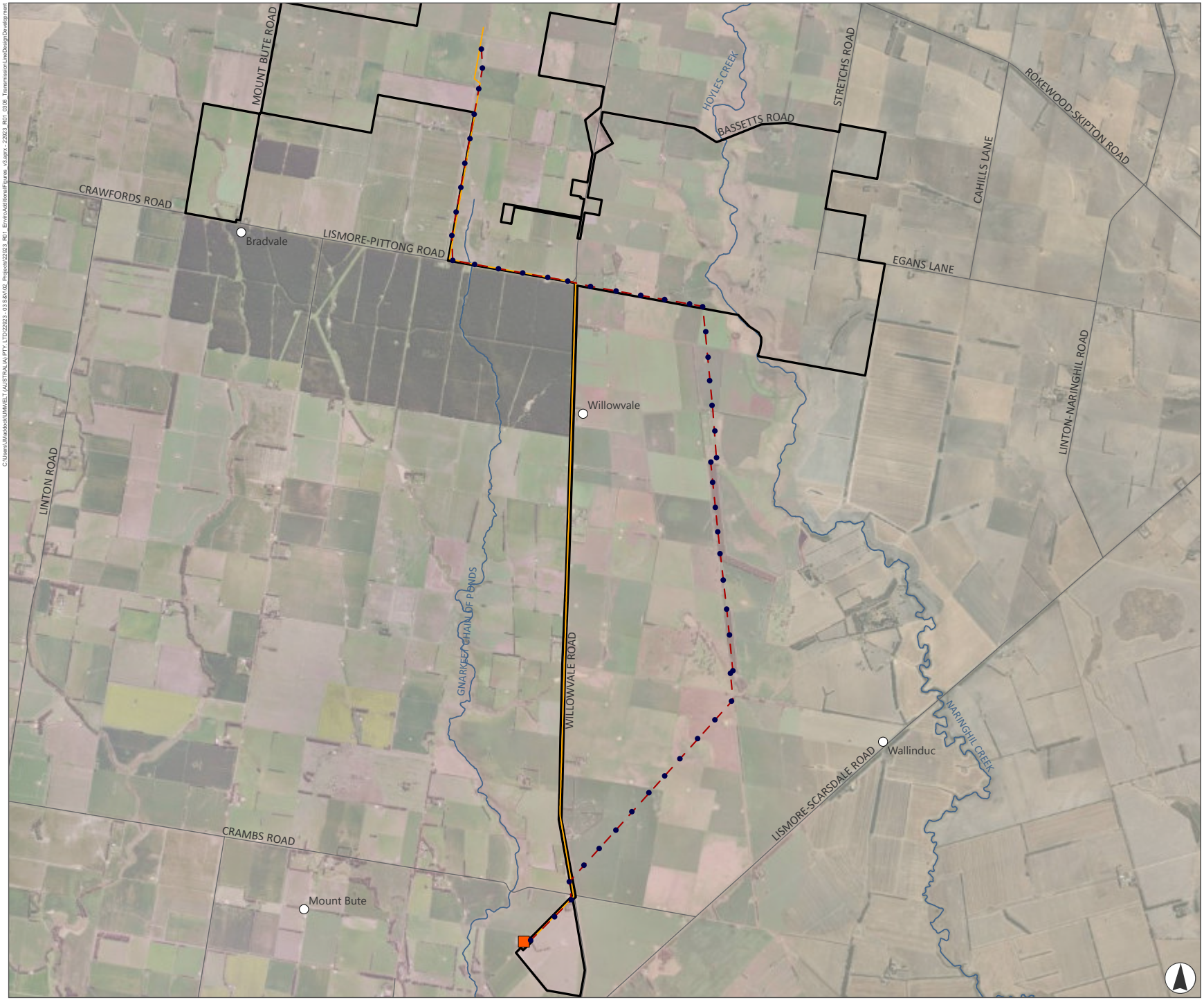

FIGURE 3.6

Transmission Line Design Development

Legend

- Project Site
- Current Underground Transmission Line
- Previous Overhead Transmission Line
- Previous Overhead Transmission Line Poles
- Berrybank Terminal Station
- Roads
- Major Watercourse

0 1 2

Kilometres

Scale 1:75,000 at A4
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FIGURE 3.7

BESS, Onsite Substation and O&M Facility Design Development

Legend

- Roads
- Project Site
- Turbine
- Underground Electrical Reticulation

Previous Infrastructure

- Previous Onsite Substation Location
- Previous O&M Facility Location
- Previous BESS Location

Current Infrastructure

- Current Onsite Substation Location
- Current O&M Facility Location
- Current BESS Location

0 250 500
Metres

Scale 1:25,000 at A4
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3.1.1 Design Changes Since Submission of Referrals

Since the submission of referrals and decisions were issued under the EE Act and EPBC Act in 2024, the Project's design has been continuously refined to avoid and minimise potential impacts in accordance with the mitigation hierarchy. An overview of the design development undertaken throughout preparation of the environment report, in response to biodiversity matters, is provided in **Section 8.5.1.**

A key driver behind changes to the Project design since submission of referrals relates to outcomes of ongoing community consultation. High community support for the Project resulted in additional neighbouring landholders expressing interest in being involved in the Project. This enabled new parcels of land to be added to the Project Site (**Figure 3.8**). The addition of these new land parcels provided a degree of flexibility in the design development of the Project, allowing for more options and alternate locations for turbines and associated infrastructure. In particular, these new land parcels allowed for turbines to be relocated to avoid and minimise potential impacts on Brolga. See **Section 8.5.1** for further details on design avoidance measures taken to avoid impacts.

With the addition of new land parcels, the Project has been able to assess alternative WTG locations, which provide the Project with design flexibility and the ability to avoid potential impacts. An overview of this assessment of alternatives is discussed below in **Section 3.2.**

The Proponent met with DTP IAU on 13 March 2025 to advise of the updated Project Site boundary in response to ongoing design changes. No concerns were raised in this meeting, with DTP IAU acknowledging and supporting the Project Site boundary change.

A request for a variation to the Proposed Action pursuant to Division 1A Section 156A of the EPBC Act was lodged with DCCEEW in August 2025 and accepted in October 2025.

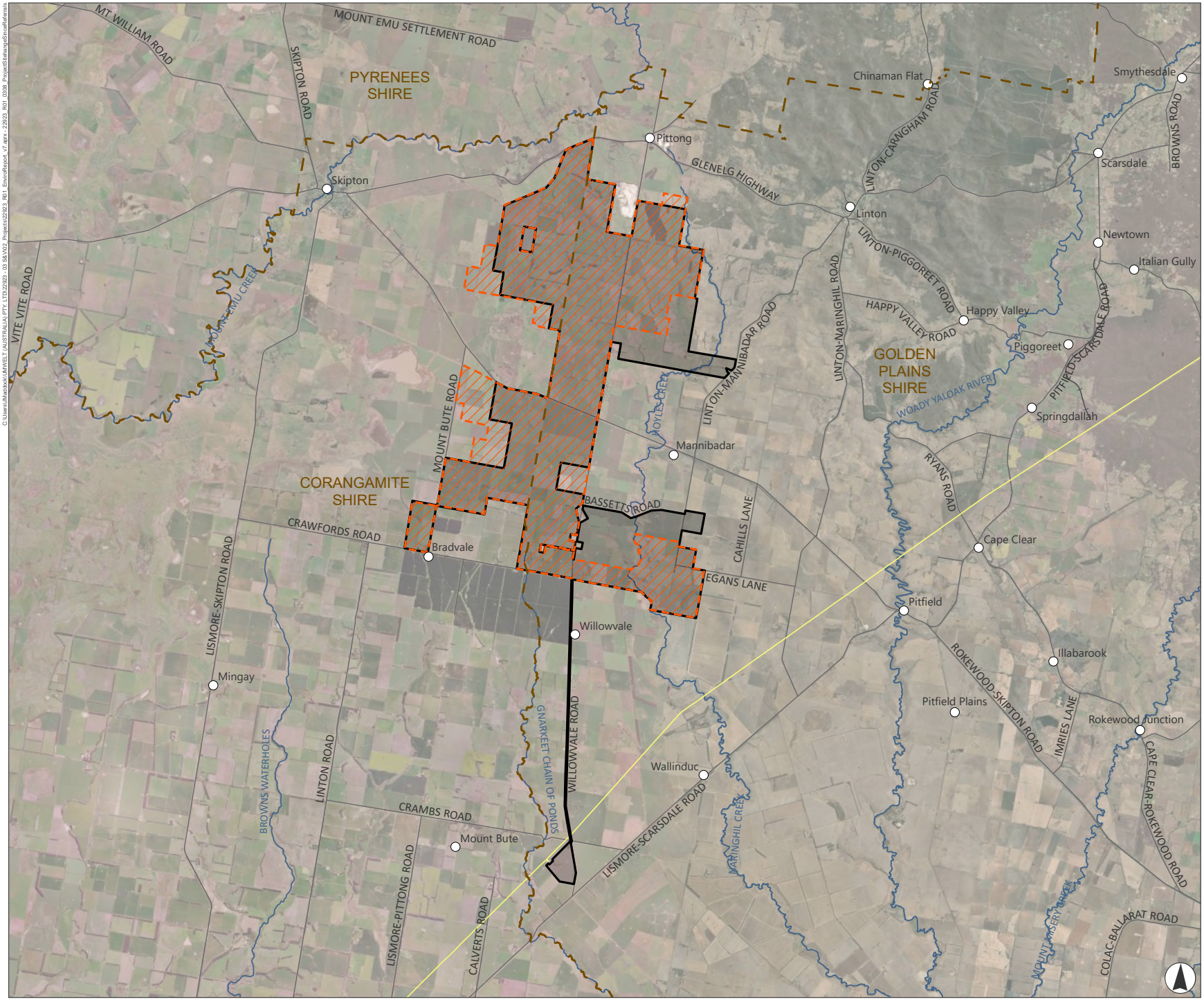

FIGURE 3.8

Project Site Boundary Change Since Referrals

Legend

- Current Project Site boundary
- Project Site boundary referred under the EE Act and EPBC Act
- Local Government Area
- Existing 220kV Transmission Line
- Roads
- Major Watercourse
- Railway

0 2 4

Kilometres

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3.2 Assessment of Alternatives

The Project will seek planning approval for up to 62 WTGs, which aligns with the Project referrals, however an assessment approach considering a higher number of WTGs has been applied to enable flexibility in the final layout selection.

Technical assessments prepared to support the environment report and planning permit applications have assessed a wind turbine layout consisting of 68 WTGs, including an additional six WTGs beyond the amount proposed for approval. These 68 WTGs are located within the current Project Site boundary, which was expanded due to neighbouring landholder interest.

This approach aims to provide future flexibility in the design evolution to respond proactively to technical assessment outcomes, consultation and design development. This allows the Project to optimise the application of the avoidance and minimisation hierarchy and ultimately provide greater justification for the selection of the final 62 WTGs for approval. In doing so, the technical assessments provide a worst case based on 68 WTGs, reporting on maximum probable impacts. Since the Project will only seek planning approval to construct and operate up to 62 WTGs, the actual impacts from the Project would be less than reported in the assessments. The only exception to this is the Social and Economic Impact Assessment, which has assessed the potential impacts and benefits of 62 WTGs, so that the benefits of the Project accurately align with the proposed scale of the Project to be delivered.

The Project will only seek planning approval to construct and operate up to 62 WTGs. Development plans to be submitted as a condition of planning approval will only show locations of the proposed 62 WTGs to be constructed and operated. The Project description and mapping within the environment report represents the 68 WTG layout and does not reflect the final 62 WTG layout.

4.0 Project Description

This section provides an overview of the Project description, including the design and activities that would occur during construction, operation, and decommissioning.

A consolidated map book has been provided in **Appendix A** that includes maps and figures of the regional context, the local context of the Project Site and the Project layout and design features.

4.1 Regional Context

The Project is located in the Central Highlands and Great South Coast regions of western Victoria within the Golden Plains Shire and Corangamite Shire LGAs (**Figure 4.1**). The Project Site is approximately 35 km south-west of Ballarat. The nearest townships are Linton and Skipton, approximately 5 km to the east and west of the Project Site, respectively. The Project is located in the proposed Central Highlands REZ as included in the VTP (VicGrid, 2025).

The Project is situated entirely on Wadawurrung Country, with the WTOAC as the Registered Aboriginal Party (**RAP**) for the Project Site. Land located within and surrounding the Project Site is predominantly associated with agricultural practices, primarily used for dryland mixed farming of sheep, as well as cattle grazing and cropping. The Pittong Kaolin Mine and Skipton Quarry are located adjacent to the Project Site in the north and central west respectively, with areas of timber plantations located south of the Project Site. Dwellings across the region tend to be sparsely distributed and are largely in association with agricultural operations conducted over large land holdings.

Regional townships such as Skipton and Linton actively contribute to agribusiness supply chains and provide essential services to the farming communities. In addition to farming, areas of public land within the broader regional context of the Project comprise of conservation and recreation reserves, state forests, wetlands and creeks.

There are several small parks and reserves near the Project Site, mostly to the north and north-east, that are largely used for conservation and some recreation purposes. The Willowvale Dam Bushland Reserve is located adjacent to the Project Site in the southeast on Lismore-Pittong Road and the Bradvale Recreation Reserve is adjacent to the Project Site in the southwest on Crawfords Road. The nearest National Park is the Brisbane Ranges National Park, approximately 60 km east of the Project Site. Enfield State Park is the nearest State Park, approximately 15 km to the east of the Project Site. The Ballarat Skipton Rail Trail reserve is adjacent to the Project Site in the north, which runs along the Glenelg Highway between Skipton and Linton.

Lake Widderin is located west of the Project Site (approximately 3.7 km from the nearest WTG) and is listed as an “Important Wetland” under the Directory of Important Wetlands in Australia. The Project Site intersects with four defined ephemeral watercourses (where water does not flow year-round): Mundy Gully, Gnarkeet Chain of Ponds, Naringhil Creek and Hoyles Creek. The nearest Ramsar wetland is the Western Districts Lakes Ramsar site approximately 20 km south of the Project Site.

There are four existing wind farms within proximity to the Project, including Chepstowe Wind Farm (approx. 15 km north-east), Stockyard Hill Wind Farm (starting approx. 4 km and extending 30 km north), Berrybank Wind Farm (starting approx. 10 km and extending 22 km south), and Golden Plains Wind Farm (starting approx. 10 km and extending 30 km south-east).

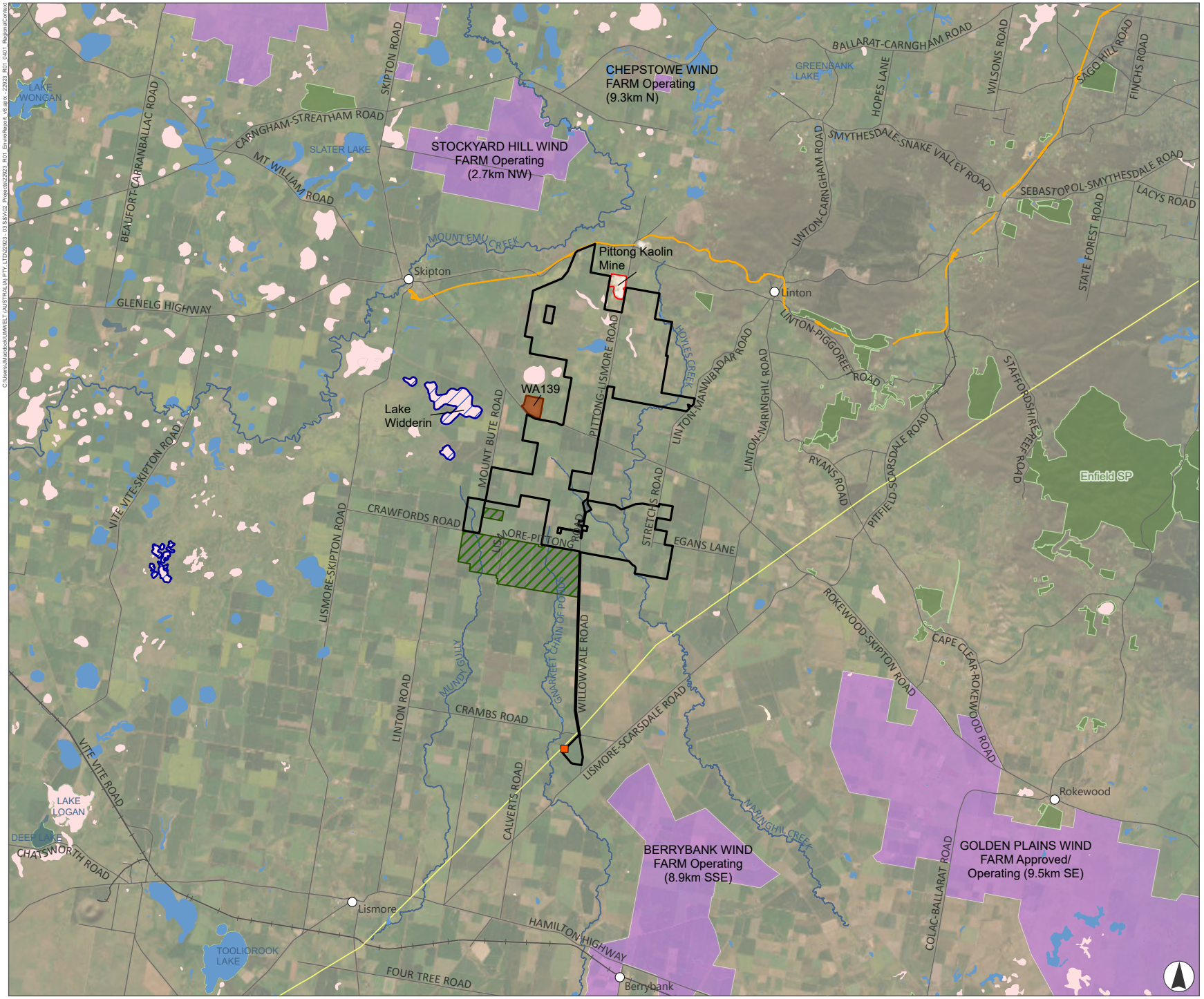


FIGURE 4.1

Regional Context

Legend

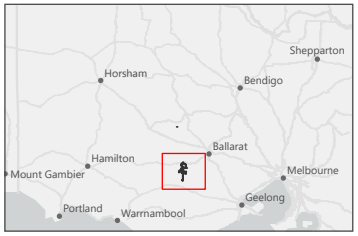
- Project Site
- Berrybank Terminal Station
- Extractive industry work authority
- Community Use Area - Ballarat-Skipton Rail Trail Reserve
- Pittong Kaolin Mine
- HVP Plantation
- Important Wetland
- Watercourse
- Roads
- Railway
- Existing 220kV Transmission Line
- Waterbody
- Parks and Reserves

Renewable Energy Facilities

- Wind Energy Facility

Current Wetland

- No Emergent Vegetation
- Sedge/Grass/Forb
- Unknown



0 2.5 5

Kilometres

Scale 1:250,000 at A4
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4.2 Project Site

The Project Site is defined by a project boundary which accommodates all of the Project's infrastructure and covers an area of approximately 6,697 ha. The boundary of the Project Site is located to align with title boundaries of land hosting infrastructure including accommodating construction activities (see **Appendix A**).

Terrain across the Project Site is generally flat with no substantial changes in elevation, which allows for efficient and optimal harvest of wind energy. The Project Site is predominantly classified as Farming Zone (**FZ**) under the Corangamite Planning Scheme and the Golden Plains Planning Scheme and has mostly been cleared or modified by agricultural practices. This has resulted in much of the native vegetation within private land being removed, with native vegetation predominantly restricted to roadsides or isolated clusters.

The Project Site is largely bound by the Glenelg Highway in the north, Cahills Lane in the east, Lismore-Pittong Road in the south and Mount Bute Road in the west. Rokewood-Skipton Road bisects the Project Site from east to west.

Access to the Project Site's construction compound by heavy vehicle deliveries would primarily be via Glenelg Highway in the north and Rokewood-Skipton Road towards the centre of the Project Site where they would access the construction compound on Rankin Road (site access point 1 on **Figure 4.3).** Access to the operational and maintenance facility will also be via Rankin Road (site access point 1).

Within the Project Site, the construction footprint covers approximately 152 ha and includes land that would be subject to direct disturbance during construction (including the location of infrastructure, access tracks, laydown areas etc.) that is assumed to all be cleared of vegetation. This equates to approximately 2.2% of the total Project Site. The construction footprint allows for a disturbance area or working buffer around both the temporary and permanent Project infrastructure.

The operational footprint representing the permanent Project infrastructure would be less than construction due to many areas being rehabilitated post-construction, covering approximately 70 ha and equating to approximately 1% of the Project Site.

4.3 Physical Layout and Design

4.3.1 Overview of Project Components

Table 4.1 presents the approximate dimensions and quantity of the proposed components for the Project, with a summary provided for each Project element below.

The final details of the elements and infrastructure to be installed or constructed (i.e. WTG model) will be confirmed during the detailed design process to be undertaken post approval and finalised prior to the commencement of construction. Detailed design allows the most suitable types of infrastructure to be identified and deployed for use in the Project based on market availability. All Project infrastructure would be located within the construction or operational footprints assessed. This does not include temporary external intersection modifications required for the transport of oversized infrastructure from the Port of Portland to the Project Site, however these have been detailed in the project description as ancillary infrastructure (see **Section 4.3.3.4**). Vegetation impacts associated with the transport route are captured in the ecological assessment of the Project (see **Section 8.2.1**).

Table 4.1 Approximate Dimensions and Quantity of Project Components

Project component	Approximate Dimension	Quantity
WTGs		
WTG height	Up to 252 m above ground level	62
Candidate rotor diameter	172 m	
Uppermost blade tip	Up to 252 m above ground level	
Lowermost blade tip	At least 44 m above ground level	
Candidate tower (hub) height	166 m above ground level	
WTG foundations (excavation size)	25 m diameter	
WTG hardstands	50 m x 90 m	
Battery Energy Storage System		
BESS compound	2 ha	1
Ancillary Infrastructure		
Internal access tracks	Trafficable width of nominally 5.5 m (up to 6 m with passing bays), plus shoulders and drainage (with single lane through water features). This equals up to 10 m wide for the construction footprint.	65 km
Onsite substation	1.6 ha	1
Operation and maintenance facility	1.5 ha	1
Underground transmission line	Construction corridor up to 7 m wide, with a 220 kV transmission line buried in a trench at a depth of 1.4 m and a width of 3.15 m	15 km
Underground electrical reticulation works	33 kV electrical cables buried in a trench of approximately 1.0 m in depth. For a single circuit - 3 m wide corridor for access and spoil on one side (3.45 m wide in total). For 2 circuits of reticulation – 2 m wide thermal spacing required between each trench, with a 3 m wide corridor for access and spoil on one side (5.45 m wide in total).	67 km
Overhead electrical reticulation works	Approximately 600 m of overhead reticulation cables. Overhead electrical reticulation poles have a 1 m x 1 m footprint.	600 m 4 poles
Permanent meteorological masts	10 m^2 concrete mast base + 1 m^2 footings at end of guy wires, within the Project Site. Height of up to 166 m above ground level.	4
Local road upgrades	Sections of the following local roads will be upgraded to an all-weather gravel surface: • Rankin Road • Henderson Road • Parkers Road • Watkins Road.	4

Project component	Approximate Dimension	Quantity
Site entry points	Six of the eight site entry points proposed would require temporary modifications to facilitate over-dimensional vehicles during the construction phase. Swept path diagrams for these site entry points noting the indicative modifications required are shown in the Traffic Impact Assessment as part of the planning permit applications.	8
Temporary intersection modifications (within Corangamite and Golden Plains)	Temporary modifications would be required at some intersections within and surrounding the Project Site (within Corangamite and Golden Plains LGAs), to accommodate over-dimensional vehicle access during the construction phase. Temporary modifications may include placement of additional gravel fill where vehicles exceed the road pavement. Extent of modifications to be confirmed during detailed design and preparation of the Traffic Management Plan. The location of these swept paths is shown on **Figure 4.3**, with detailed diagrams for these intersections noting the indicative modifications required are shown in the Traffic Impact Assessment as part of the planning permit applications.	Up to 11
Temporary external intersection modifications	Up to 10 intersections along the over-dimensional transport route proposed to transport wind turbine blades between the Port of Portland to Skipton require temporary modifications (e.g. temporary placement of gravel, temporary removal of signs, etc) to accommodate over-dimensional vehicle access during delivery of large turbine components. Extent of modifications to be confirmed during detailed design and preparation of the Traffic Management Plan and would be subject to separate approvals. Swept path diagrams for these intersections noting the indicative modifications required are shown in the Traffic Impact Assessment as part of the planning permit applications. Appendix 6 of the Ecological Assessment (**Appendix C**) considers these 10 intersections.	Up to 10
Water tanks	45,000 litre water tanks at the main site entrances or closest most practical locations (or as advised by Country Fire Authority (**CFA**))	10
Temporary Facilities		
Construction compound	1.5 ha (to be converted to the operation and maintenance facility at the completion of construction).	1
Central concrete batching plants, rock crushing facilities	Approximately 100 m x 60 m (inclusive of plant, aggregate storage, water storage and treatment).	2
Satellite laydowns/material storage areas	50 m x 200 m	5
Temporary meteorological masts	Two temporary met masts currently on site (one at a height of 160 m above ground level and one at 110 m above ground level). These will be used during construction as required to continue wind speed analysis. At the end of the three years on site, they will either be taken down or planning approval will be sought.	2

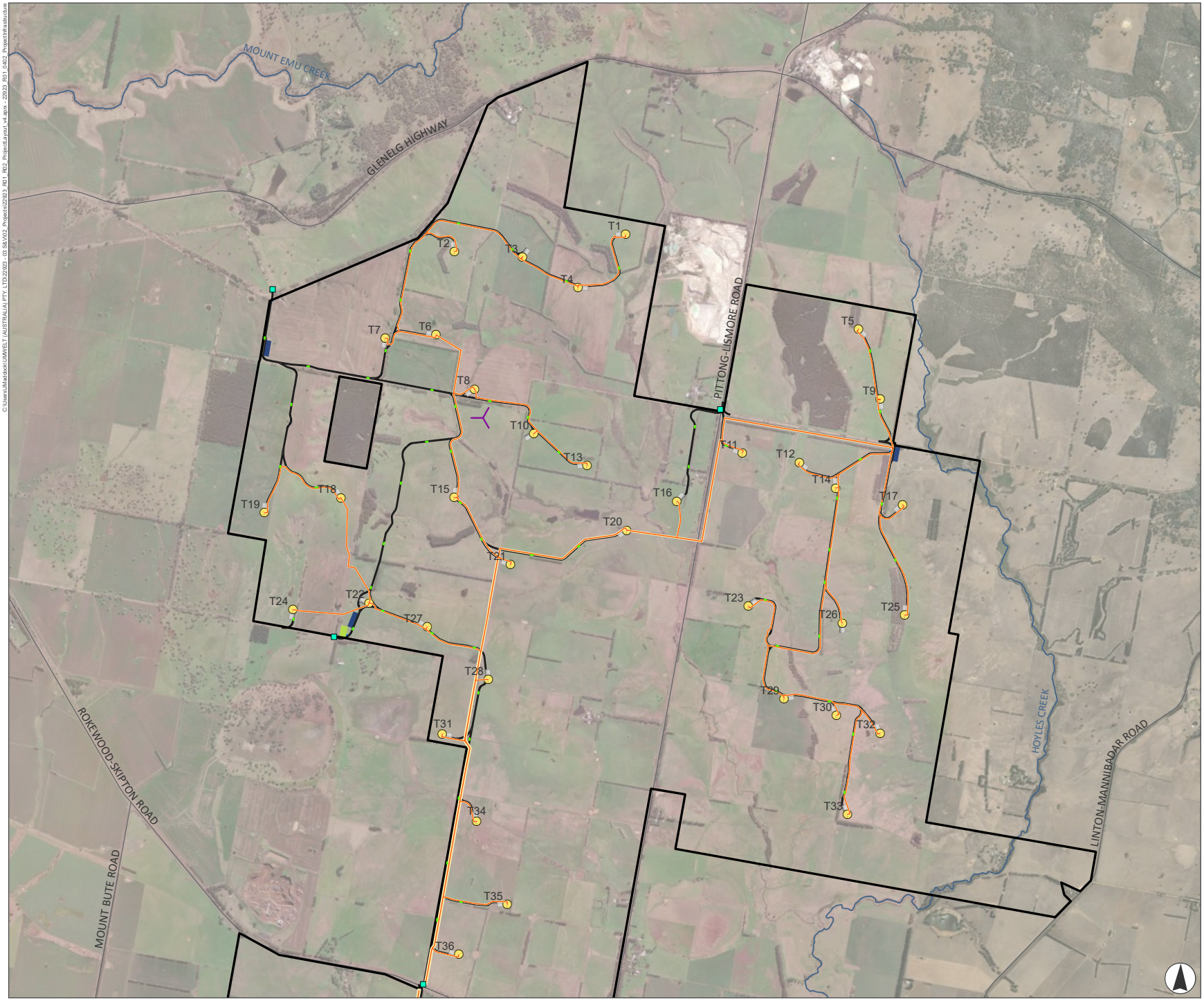

FIGURE 4.2a

Project Infrastructure

Legend

- Roads
- Major Watercourse
- Project Site
- Site Entry Point
- Turbine
- Underground Electrical Reticulation
- Passing Bay
- Temporary Met Mast
- Temporary Concrete Batch Plant
- Laydown Area
- Wind Turbine Hardstand
- Access Tracks
- Watertank
- Underground Electrical Reticulation Footprint

0 1 2

Kilometres

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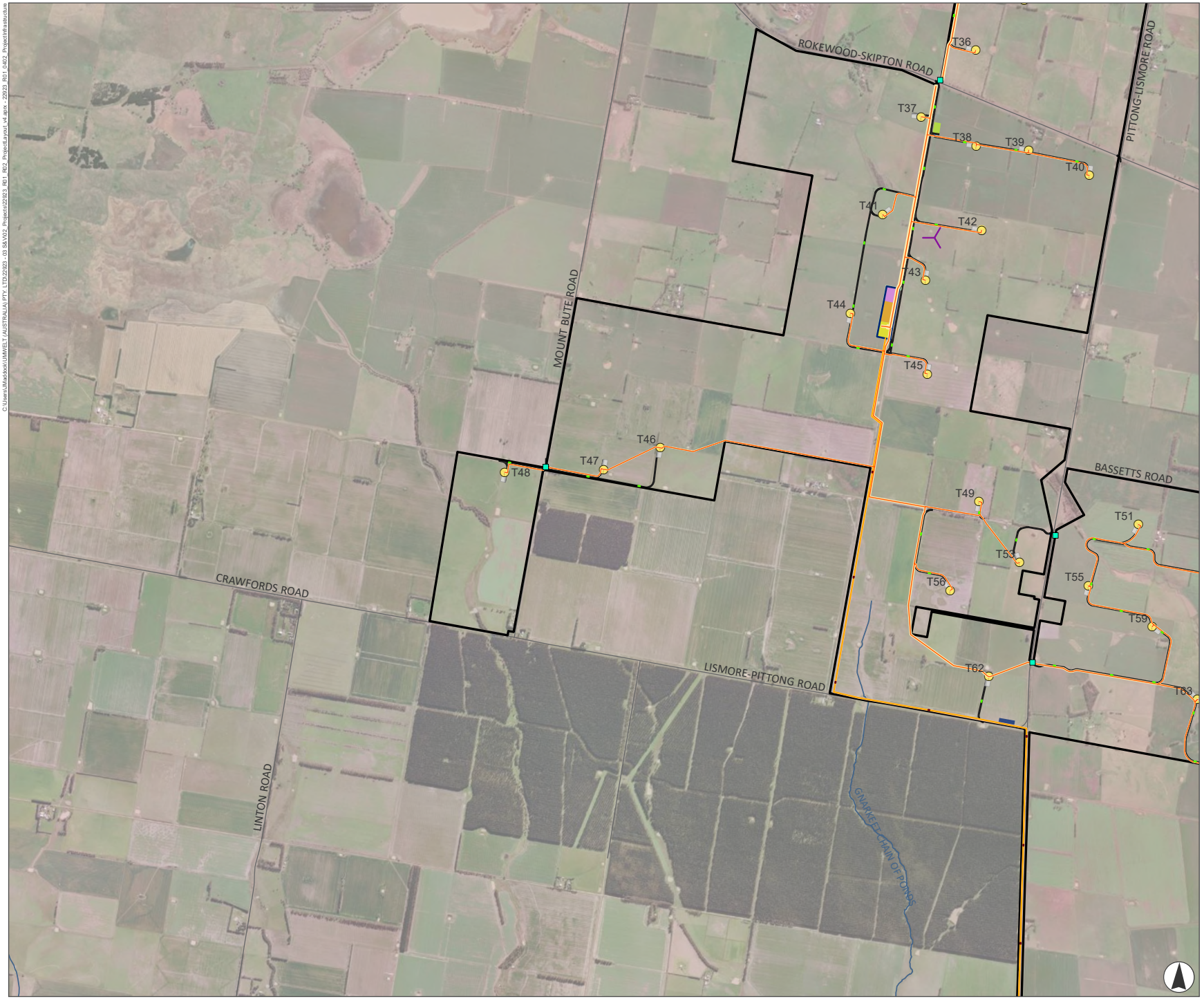

FIGURE 4.2b

Project Infrastructure

Legend

- Roads
- Major Watercourse
- Project Site
- Site Entry Point
- Turbine
- Underground Transmission Line
- Overhead Electrical Reticulation
- Electrical Pole
- Underground Electrical Reticulation
- Passing Bay
- Underground Transmission Line Cable Pits
- Temporary Met Mast
- Temporary Concrete Batch Plant
- Laydown Area
- Wind Turbine Hardstand
- 10m Site Office Compound Landscape Buffer
- Access Tracks
- Watertank
- Current Onsite Substation Location
- Current O&M Facility Location
- Current BESS Location
- Underground Electrical Reticulation Footprint
- Underground Transmission Line Footprint

0 1 2

Kilometres

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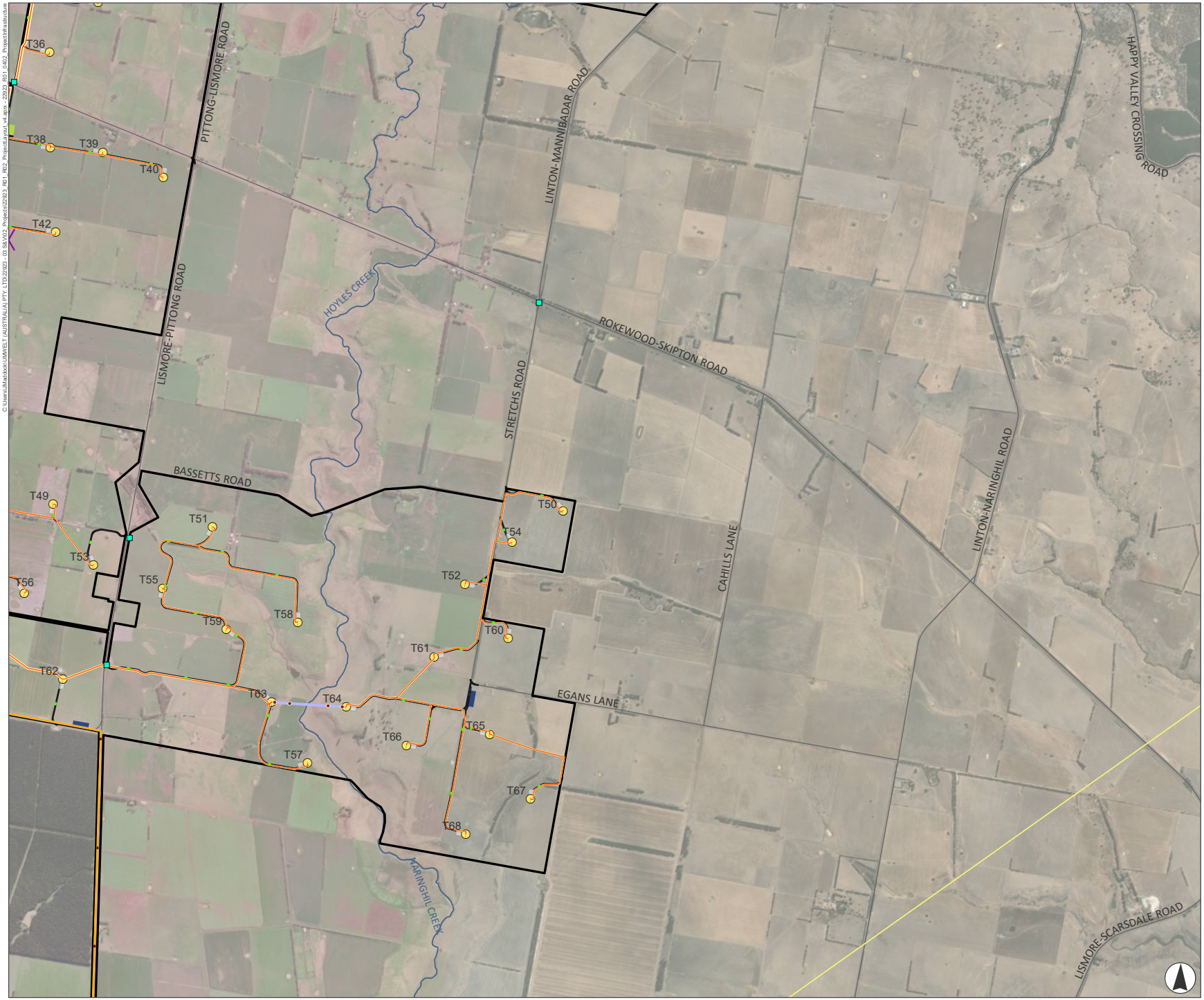

FIGURE 4.2c

Project Infrastructure

Legend

- Roads
- Major Watercourse
- Project Site
- Existing 220kV Transmission Line
- Site Entry Point
- Turbine
- Underground Transmission Line
- Overhead Electrical Reticulation
- Electrical Pole
- Underground Electrical Reticulation
- Passing Bay
- Underground Transmission Line Cable Pits
- Temporary Met Mast
- Temporary Concrete Batch Plant
- Laydown Area
- Wind Turbine Hardstand
- Access Tracks
- Watertank
- Underground Electrical Reticulation Footprint
- Underground Transmission Line Footprint

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Kilometres

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FIGURE 4.2d

Project Infrastructure

Legend

- Roads
- Major Watercourse
- Project Site
- Existing 220kV Transmission Line
- Underground Transmission Line
- Underground Transmission Line Cable Pits
- Berrybank Terminal Station
- Underground Transmission Line Footprint

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4.3.2 Wind Turbine Generators

The Project would comprise up to 62 WTGs, with the dimensions outlined above in **Table 4.1**.The final WTG model will be selected by the Proponent during detailed design. The selection of the WTG is dependent on a range of factors including market availability, visibility, energy yield, transport route, noise and site opportunities.

The WTGs would be three-bladed with the rotor and nacelle mounted on a tower with an internal ladder or lift for access (**Photo 4.1**). The Project has been designed to accommodate a WTG of up to 252 m in height, based on a hub height of 166 m and a turbine blade length of 86 m. It is acknowledged this would result in a minimum blade tip height (the distance from the ground to the lowermost tip of a turbine blade) of 80 m, rather than the 44 m as specified. The Project has adopted a conservative approach assessing the lowest possible minimum blade tip height of 44 m to allow for worst case assessment of potential impacts. The final WTG model and specifications will be determined during detailed design, with the ability to alter the turbine dimensions so long as they remain within the rotor swept area (**RSA**) (minimum and maximum limits of blade height above ground) applied within this environment report.

Photo 4.1 Components of a WTG as shown at an existing Squadron Energy windfarm

4.3.2.1 Foundations

Two types of foundation for the WTGs may be required pending geotechnical investigation of the ground conditions.

The following two examples of foundation type are based on a typical foundation design:

- Slab (gravity) foundations: These involve the excavation of ground material to a depth of approximately 3 m (subject to geotechnical investigation). Excavation works are followed by the installation of shuttering and steel reinforcement, and then by the pouring of concrete. Once poured and cured, a foundation is backfilled with material excavated from the same location if it meets engineering fill specifications with any excess fill material made available for reuse onsite if deemed clean and suitable for the end purpose (otherwise stockpiled or disposed of). Refer to **Photo 4.2** for an example of a conventional gravity foundation.
- Rock anchor foundations: These involve excavation of ground material plus drilling of rock anchor piles to a depth determined by geotechnical investigation. Refer to **Photo 4.3** for an example of a conventional rock anchor foundation.

Photo 4.2 WTG foundation type: gravity

Photo 4.3 WTG foundation type: rock anchor

Further geotechnical investigations will be carried out to determine the best foundation type per WTG. New WTGs are continually entering the market, and it is possible that variations to these conventional foundation designs could occur prior to final WTG selection.

The excavation required for both types of foundations would be approximately 25 m diameter and would be undertaken by mechanical equipment. Low-level blasting may be required where firm rock is encountered. Blasting (if required) would be undertaken by qualified personnel subject to relevant statutory requirements and approvals, and in accordance with relevant guidelines for blasting in proximity to neighbouring dwellings.

4.3.2.2 Hardstands

Hardstands are required adjacent to each WTG location for the assembly, erection, maintenance, repowering and/or decommissioning activities. Each hardstand area would have a dimension of approximately 90 m x 50 m, however dimensions can vary dependent on detailed design, topography, construction methods and the final WTG selection. Hardstands would be surfaced with pavement material to required load-bearing specifications, maintained throughout the construction and operational life of the Project, and used principally for construction and periodic maintenance of the Project. Surrounding the hardstand is generally an area of disturbance included in the construction footprint which is not a hardstand area but would be used for WTG component laydown and crane structure assembly (among other WTG erection and construction related activities) as well as cut and fill and drainage structure. **Photo 4.4** shows a typical hardstand area adjacent to a WTG foundation.

Photo 4.4 Hardstand, tower foundation and blade laydown area at Sapphire Wind Farm

4.3.2.3 Towers

The supporting tower structure of a WTG is typically comprised of a reducing cylindrical tower made from either a welded steel shell, concrete, or a concrete steel hybrid, fitted with an internal ladder and lift.

Another tower design option may include lattice/plate hybrid towers which are constructed with a lower section of steel lattice and an upper section of cylindrical steel plates. This design allows wind to cross the base and tower, reducing overall stress on the structure.

The final selection of the tower would be subject to detailed design (within the bounds of the options assessed as part of the planning approval) and competitive tender.

Conventional towers would typically be manufactured and transported to the Project Site in four to seven sections for onsite assembly (refer to **Photo 4.5** for an example of a typical WTG tower including nacelle). Atop the tower sits the nacelle to which the hub is mounted. The three blades are attached to the hub.

Photo 4.5 Example of a WTG tower with the nacelle and hub at Murra Warra Wind Farm

4.3.2.4 Nacelle

The nacelle housing is constructed of steel and fibreglass that is mounted on top of the tower and is typically around 15–18 m long, 4.5 m high and 4.5 m wide (depending on the WTG model). Refer to **Photo 4.6** for an example of a typical nacelle. The nacelle encloses the gearbox, generator, transformers (WTG model dependent), motors, brakes, electronic components, wiring and hydraulic and lubricating oil systems. Weather monitoring equipment located on top of the nacelle would provide data on wind speed and direction for the automatic operation of the WTG. Obstacle Hazard Lighting if required, would be installed to the top of the nacelle.

Photo 4.6 Example of a Nacelle for a 5.3 MW WTG at Bango Wind Farm

4.3.2.5 Rotor

The WTG rotor drives the generator within the nacelle producing electrical output. In general, a larger rotor enables greater generation capacity, however site-specific wind conditions influence the rotor selected for installation at any given wind farm.

WTG models being considered generate energy at wind speeds in the order of 3.5 m to 4 m per second (m/s) and shut down (for safety reasons) in wind speeds greater than 25 m/s or 90 km per hour (kph). The rotor typically rotates at approximately eight revolutions per minute (rpm) at low wind speeds and 20 rpm at operational higher wind speeds.

4.3.2.6 Blades

WTG blades are typically made from fibreglass reinforced with epoxy or plastic attached to a steel hub and include lightning protection inside the blade. A blade length of 86 m is proposed for the Project.

Uppermost blade tip comprises the highest point of the WTG when in a vertical position. Lowermost blade tip refers to the height between the ground and the lowest point of rotor when in operation in a vertical position.

Photo 4.7 **A blade being installed at Murra Warra Wind Farm**

4.3.2.7 Generator Transformer

WTGs produce electricity at low voltage which is then stepped up to medium voltage (33 kV or greater) by a transformer located in either the nacelle, within the base of the tower, or adjacent to the base of the tower on a concrete pad. **Photo 4.8** shows an example of a transformer located outside of the tower. The footprint of the transformer is small and would sit on the WTG foundation and/or the hardstand assembly area.

Photo 4.8 **Example of a generator transformer located outside of the tower at Boco Rock Wind Farm**

The generator transformer may be oil-filled or a dry type depending on the WTG. Where oil-filled transformers are used, appropriate measures would be incorporated to prevent any oil loss and contain any spill within a bunded area. The output from each of the WTGs would be directed via medium voltage (33 kV) underground and overhead electrical reticulation lines that link to the onsite substation and/or BESS.

4.3.3 Ancillary Infrastructure

4.3.3.1 Access Tracks

Approximately 65 km of internal access tracks would be established within the Project Site to allow for access to each WTG, the BESS, onsite substation, and other facilities during construction and operation of the Project.

Internal access tracks have been planned to follow existing farm tracks where practicable and would have an approximate trafficable width of 5.5 m (up to 6 m with passing bays), with adjacent drain and cut and fill batters (up to 10 m construction footprint for access tracks applied to assessments). Internal access tracks are planned to be co-located with placement of buried cables. All internal access tracks would be used during construction and must be safe for construction traffic loads. Internal access tracks may be retained dependent on the standard or partly reinstated for maintenance purposes during operation. Access to the Project Site via internal access tracks would be restricted from public access. Passing bays have also been incorporated into the access track design (increasing the standard trafficable width where sited accordingly) in accordance with the CFA Design Guidelines and Model Requirements for Renewable Energy Facilities (CFA, 2025) (CFA guidelines).

Detailed civil works designs would be prepared following contract award to the chosen Engineering, Procurement, and Construction (**EPC**) contractor for the internal road earthworks, cut and fill batters and pavement to stabilise the internal roads as well as drainage structures and suitable erosion and sediment control structures.

4.3.3.2 Operations and Maintenance (O&M) Facility

One O&M facility would be established for the day-to-day operation of the Project, similar to **Photo 4.9**. The area would be fully fenced with sufficient access to allow vehicle movement, storage of materials and containers, and office facilities. The O&M compound would be located adjacent to the onsite substation on Rankin Road adjacent to the BESS.

The O&M facility includes laydown areas, site operations facilities and services buildings, workshop, storage, parking and other facilities for operations staff. The buildings of the operations facility would house office space, toilet, kitchen, communications equipment, meeting room and routine maintenance stores. The O&M facility would require a standalone power supply from either the local distribution network, or an onsite generator (for back-up/emergency power).

Photo 4.9 **Sapphire Wind Farm O&M Compound (foreground) shown in front of the substation**

4.3.3.3 Permanent Meteorological Masts

Up to four permanent meteorological masts (met masts), up to hub height of the WTGs (approximately 166 m), would be installed within the Project Site. The locations are yet to be determined but it is likely there would be at least one permanent met mast in each of the Corangamite Shire and Golden Plains Shire. The purpose of these met masts is to aid in performance monitoring of the WTGs during operations. The permanent met masts would be of a guyed, narrow lattice or tubular steel design with concrete footings of approximately 10 m^2 for the mast and 1 m^2 for the guy wires. Guy wires may extend beyond 100 m from the base of the met mast. **Photo 4.10** and **Photo 4.11** shows both typical met mast designs.

Photo 4.10 **Lattice wind monitoring mast**

Photo 4.11 **Tubular wind monitoring mast**

For functional reasons they must be near to a selected few WTGs but separated from those WTGs by a distance allowing accurate wind measurements. The mast locations will be identified on the development plans submitted as a condition of the planning permits, prior to the commencement of construction. Met masts will be marked for visibility and coordinates also provided to the relevant aviation authorities prior to their erection, and 'as built' locations confirmed.

These masts would require a low voltage cable connection for power and a communications cable to be laid. The trench required for this would be approximately 1 m in width and would come directly from the closest WTG.

The met mast locations, once confirmed, will be identified on the development plans submitted as a condition of the planning permits, prior to the commencement of construction.

4.3.3.4 Road intersection modifications for component delivery

Logistics relating to the storage and movement of (a) wind turbine blades (overlength), and (b) tower units (typically over height) nominally is used to define external road upgrades for access and road safety. Transport is either from the port of arrival, or the location of domestic manufacture, to the remote wind farm site. A focus is on maximising Australian made componentry but many of the large elements would inevitably be imported.

The Port of Portland is considered the likely port of entry however other ports including (but not limited to) Geelong and Melbourne may also be considered pending post approval, procurement, and contracting decisions.

The Traffic Impact Assessment assessed the over-dimensional transport route proposed to transport wind turbine blades from the Port of Portland to the Project Site, to determine if upgrades are required to facilitate over-dimensional vehicle movement. No permanent upgrades are required as most of the route is suitable for transporting over-dimensional loads as it primarily utilises major roads.

Swept paths were undertaken for 29 intersections in total:

- 10 intersections between the Port of Portland and Skipton (temporary external intersection modifications).
- 11 intersections within and surrounding the Project Site (temporary intersection modifications within Corangamite and Golden Plains LGAs).
- 8 intersections associated with Project Site entry points.

Swept path assessments considered vehicles carrying a turbine blade length of up to 86 m. All intersections have been assessed as part of the Ecological Assessment (**Appendix C**).

Temporary external intersection modifications (not within Corangamite or Golden Plains LGAs)

Table 4.2 outlines the temporary works required at 10 intersections assessed between the Port of Portland and Skipton. No permanent upgrade works would be required at any of the intersections. Only minor temporary modification works would be required such as temporary removal of road furniture and the construction of temporary gravel hardstands where vehicles may exceed the road pavement. The extent of works required will be confirmed through detailed design and preparation of the Traffic Management Plan.

Table 4.2 Temporary External Intersection Modifications Required

Intersection	LGA	Temporary modifications required
Cliff street onto Madeira Packet Road	Glenelg Shire	Additional temporary gravel hardstands may be required where vehicles cut through the corner. Temporary removal of street signs and light poles.
Maderia Packet Road onto Madeira Packet Road	Glenelg Shire	Additional temporary gravel hardstands may be required where vehicles cut through the corner. Temporary removal of street signs and light poles. Existing low shrubs may require trimming. To be confirmed as part of TMP.
Maderia Packet Road onto Madeira Packet Road	Glenelg Shire	Additional temporary gravel hardstands may be required where vehicles cut through the corner. Temporary removal of street signs and light poles.
Maderia Packet Road onto Henty Highway	Glenelg Shire	Additional temporary gravel hardstands may be required where vehicles cut through the corner. Temporary removal of street signs and light poles.
Henty Highway left turn to stay on Henty Highway	Glenelg Shire	Additional temporary gravel hardstands may be required where vehicles cut through the corner. Temporary removal of street signs and light poles.
Henty Highway left turn onto Princes Highway	Glenelg Shire	Additional temporary gravel hardstands may be required where vehicles leave the existing road pavement.
Princes Highway right turn onto Portland-Casterton Road	Glenelg Shire	Temporary removal of street signage.
Portland-Casterton Road right turn onto Glenelg Highway	Glenelg Shire	Additional temporary gravel hardstands may be required where vehicles cut through the central island of the road. Temporary removal of street signs and light poles.
Glenelg Highway left turn onto Henty Highway	Southern Grampians Shire	Additional temporary gravel hardstands may be required where vehicles cut through the central island of the road. Temporary removal of street signs and light poles.
Dunkeld-Cavendish Road left turn onto Glenelg Highway	Southern Grampians Shire	Temporary removal of street signage.

Temporary intersection modifications (within Corangamite and Golden Plains LGAs)

Temporary modifications would be required at 9 of the 10 intersections assessed, that are internal and external to the Project Site (within Corangamite and Golden Plains LGAs) along the proposed overdimensional (OD) transport routes to each of the site entry points, as outlined in **Table 4.5.** No permanent upgrade works would be required at any of the intersections, only minor temporary modification works. One intersection near the O&M facility impacts on a minor amount of native vegetation. The extent of works required will be confirmed through detailed design and preparation of the Traffic Management Plan.

Table 4.3 Temporary Site Access Route Intersection Modifications (within Corangamite and Golden Plans LGAs)

Internal / external to the Project Site	Intersection	LGA	Temporary modifications required
External	Glenelg Highway right turn onto Spring Hill Road	Corangamite Shire	Additional temporary trafficable fill material to facilitate OD blade deliveries may be required where vehicles cut the corner of the intersection and overswing onto the side of the departure road. Temporary removal of street signage.
External	Glenelg Highway right turn onto Pittong-Lismore Road	Golden Plains Shire	Additional temporary trafficable fill material to facilitate OD blade deliveries may be required where vehicles cut the corner of the intersection and overswing on the approach and departure roads. Temporary removal of street signage.
External	Glenelg Highway/Montgomery Street right turn to Skipton-Geelong Road / Rokewood-Skipton Road	Corangamite Shire	Additional temporary trafficable fill material to facilitate OD blade deliveries may be required where vehicles cut the corner of the intersection and overswing on the approach and departure roads. Temporary removal of street signage.
External	Rokewood-Skipton Road left turn onto Spring Hill Road / Notmans Road	Corangamite Shire	Temporary removal of street signage.
External	Rokewood-Skipton Road right turn onto Mount Bute Road	Corangamite Shire	No works required.
External	Rokewood-Skipton Road right turn onto Lismore-Pittong Road	Golden Plains Shire	Additional temporary trafficable fill material to facilitate OD blade deliveries may be required where vehicles cut the corner of the intersection and overswing on the approach and departure roads. Temporary removal of street signage and fencing. Minor impact on native vegetation, see **Section 8.5.1.1**.
Internal	Egans Lane right turn onto Rowes Lane	Golden Plains Shire	Additional temporary trafficable fill material to facilitate OD blade deliveries may be required. Existing fence may require removal and reinstatement.
Internal	Stretchs Road left turn into Egans Lane	Golden Plains Shire	Additional temporary trafficable fill material to facilitate OD blade deliveries may be required. Existing fence may require removal and reinstatement.

Internal / external to the Project Site	Intersection	LGA	Temporary modifications required
Internal	Lismore Pittong Road right turn onto Lismore Pittong Road	Golden Plains Shire	Additional temporary trafficable fill material to facilitate OD blade deliveries may be required. Existing sign may require removal and reinstatement.
Internal	Lismore Pittong Road into WTG 62	Golden Plains Shire	Additional temporary trafficable fill material to facilitate OD blade deliveries may be required.
Internal	Hendersons Road left turn onto Rankin Road	Golden Plains Shire / Corangamite Shire	Additional temporary trafficable fill material to facilitate OD blade deliveries may be required. Existing fence will require removal and reinstatement. Minor impact on native vegetation, see **Section 8.5.1.1**.

Project Site Entry Points

The Project Site would have eight site entry points accessed primarily via Glenelg Highway and Rokewood-Skipton Road and several secondary local roads (see **Figure 4.3**).

Table 4.4 outlines the temporary modifications required at six of the eight site entry points to facilitate over-dimensional vehicle movements during construction. No permanent upgrades are required at any of the site entry points to accommodate over-dimensional vehicles. Temporary modification works include temporary removal and reinstatement of some farm fences and gates, and the construction of temporary gravel hardstands. Only one site entry point impacts on native vegetation. Water storage tanks are proposed at all site entrances, or at the nearest location practical, in accordance with the CFA guidelines.

Table 4.4 Project Site Entry Point Temporary Modifications

Site access points	Intersection	Temporary modifications required
1	Rokewood-Skipton Road / Rankin Road	Additional temporary trafficable fill material to facilitate OD blade deliveries may be required. Existing fence may require removal and reinstatement.
2	Notmans Road / private access	Additional temporary trafficable fill material to facilitate OD blade deliveries may be required. Existing fences may require removal and reinstatement.
3	Lismore Pittong Road / Francis Lane / private access	Additional temporary trafficable fill material to facilitate OD blade deliveries may be required. Existing fences may require removal and reinstatement. Minor impact on native vegetation, see **Section 8.6.1**.
4	Mount Bute Road / Parkers Road / Watkins Road	Additional temporary trafficable fill material to facilitate OD blade deliveries may be required. Existing fence will require removal and reinstatement.

Site access points	Intersection	Temporary modifications required
5	Spring Hill Road / private access	Additional temporary trafficable fill material to facilitate OD blade deliveries may be required. Existing fence will require removal and reinstatement. Minor impact on native vegetation, see **Section 8.6.1.**
6	Lismore Pittong Road / Parkers Road	Additional temporary trafficable fill material to facilitate OD blade deliveries may be required. Existing fence will require removal and reinstatement.
7	Lismore Pittong Road / private access	Additional temporary trafficable fill material to facilitate OD blade deliveries may be required. Existing fence will require removal and reinstatement.
8	Rokewood-Skipton Road / Stretchs Road	Additional temporary trafficable fill material to facilitate OD blade deliveries may be required. Several pine trees (*Pinus radiata*) in the Stretchs Road reserve will need to be removed.

An overview of which main site access points are proposed to be used to access each of the Project's WTG locations is provided in **Table 4.5,** and shown on **Figure 4.2.**

Table 4.5 Site Entry Points Proposed to Access Project WTG Locations

Site entry point	WTGs to be accessed
1	T37, T38, T39, T40, T41, T42, T43, T44, T45
2	T22, T27, T28, T31, T34, T35, T36,
3	T16, T11, T9, T5, T12, T14, T26, T23, T29, T30, T32, T33, T17, T25
4	T46, T47, T48
5	T1, T2, T3, T4, T7, T6, T8, T10, T13, T15, T21, T20, T18, T19
6	T53, T49, T56
7	T63, T57, T59, T55, T51, T58, T62
8	T50, T54, T52, T60, T61, T64, T66, T65, T68, T67

Table note: T24 is accessed directly off Notmans Road and therefore not listed in the table. Site access 2 can also provide access to T8, T15, T21, T10, T13, and T20.

4.3.3.5 Local Road Upgrades

The Project will require upgrades to relevant sections of local roads from dry weather to all weather roads to accommodate vehicle access and turbine component delivery, as detailed in **Table 4.6.** These local road upgrades are included in the construction footprint and have therefore been assessed in the Ecological Assessment.

Table 4.6 Local Road Upgrades

Road	Upgrades required
Rankin Road	Rankin Road will be upgraded to an all-weather gravel, from Rokewood-Skipton Road to Henderson Road.
Henderson Road	A section of Henderson Road will be upgraded (approx. 370 m) in a westerly direction from the Rankin Road intersection to the access track servicing T44 and T41.
Parkers Road	A short section (approx.150 m) of the road may require upgrading with temporary trafficable fill material to facilitate OD blade deliveries. Parkers Road west from Mt Bute Road is an unformed track and will require an upgrade for 980 m from Mt Bute Road to the wind farm access track servicing T46.
Watkins Road	Watkins Road from Mt Bute Road is a local dry weather only road with a gravel surface. It is proposed to upgrade a section (approx. 430 m) in a westerly direction from Mt Bute road to facilitate blade delivery of blades to T48.

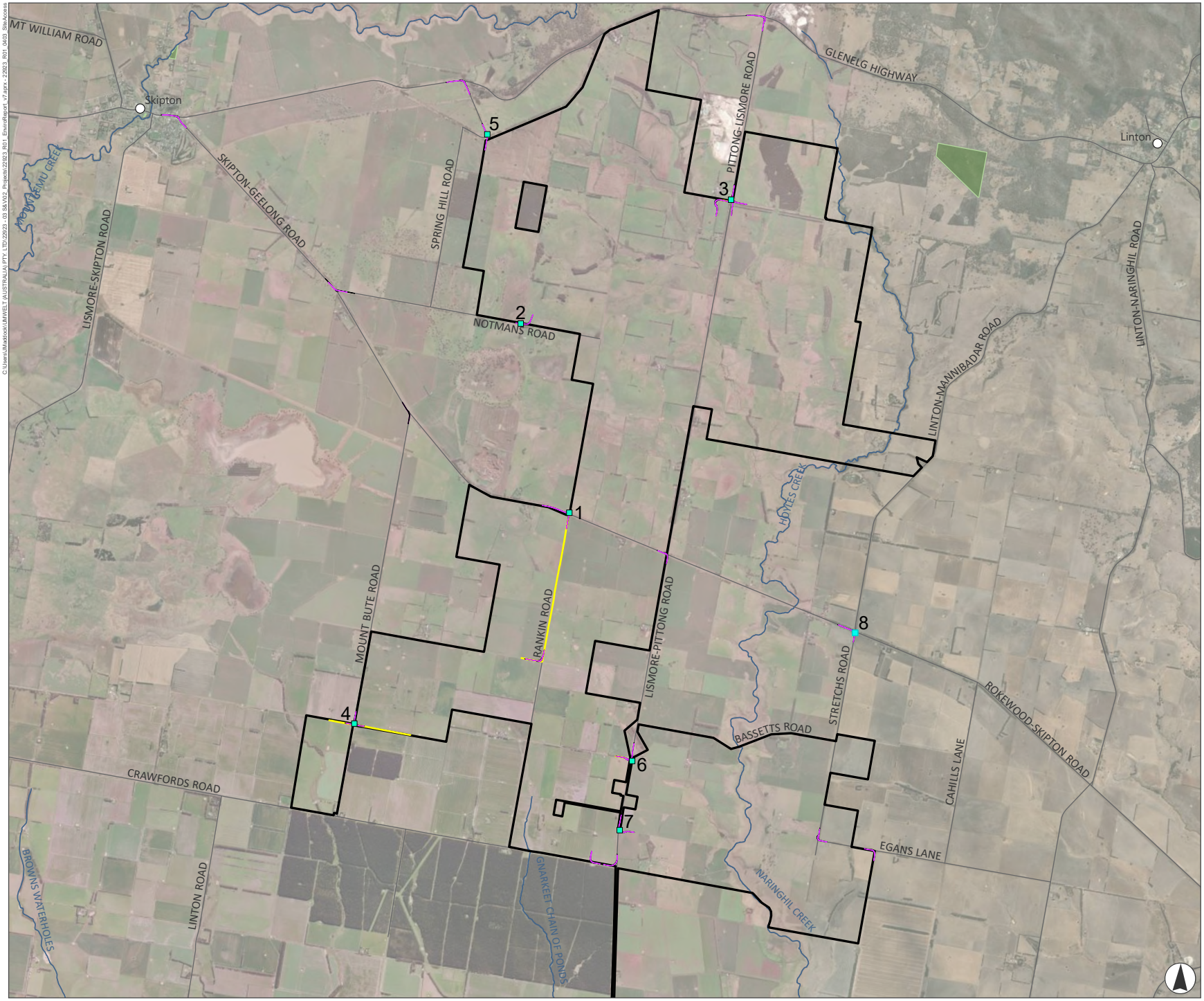

FIGURE 4.3

Site Access

Legend

- Project Site
- Site Entry Point
- Parks and Reserves
- Township
- Roads
- Major Watercourse
- Blade Sweep Envelope
- Tyre Impact Envelope
- Local Roads to be Upgraded

0 1 2

Kilometres

Scale 1:90,000 at A4
GDA2020 MGA Zone 54

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4.3.4 Electrical Components and Infrastructure

4.3.4.1 BESS

BESS forms part of the Project and would consist of infrastructure and technology designed to store and discharge energy. Storage of energy can add significant benefits to renewable generation because it allows for the dispatch of energy in accordance with market demand and overcomes potential issues associated with intermittency of output. These parameters allow for a range of size and storage duration alternatives which will be determined at the time of financing the BESS element of the Project. The Project BESS has been sized and assessed as 100 MW / 4 hrs. Due to consistent evolution in battery storage technology, the proposed BESS type is not yet decided.

The BESS would be in a compound and comprised of gravel hardstand or concrete slab, buildings, shipping containers and other infrastructure to contain the chosen technology and to connect the BESS, WTGs, and onsite substation via underground and overhead cables. The BESS would be designed and constructed in accordance with the Country Fire Authority (**CFA**) Design Guidelines and Model Requirements for Renewable Energy Facilities (CFA, 2025) including design of appropriate fire breaks, water tanks and fire water runoff collection infrastructure.

4.3.4.2 Turbine electrical reticulation

Each WTG would be connected to the onsite substation by a network of predominantly underground 33kV electrical and communication cabling.

Each circuit will collect the energy from 4 to 5 WTGs being connected per reticulation string. The cables will be placed in a trench with a minimum depth of 800 mm that will be backfilled with suitable fill and cable marking materials.

Approximately 67 km of underground cabling between turbines would be required. As with the access tracks, the alignment of the cables has been designed to minimise the removal of native vegetation by locating them, where possible, adjacent to the existing or proposed access tracks and in cropped paddocks. Where cable runs are longer than the maximum length available on a single drum, joints will need to be installed using underground joint pits or above ground joint boxes.

Underground cables will be laid in accordance with the relevant standards and specifications at the time of construction. The cables will involve trench excavations, conduit/bedding installation, cable pulling/laying and backfilling, and progressive rehabilitation (refer to **Figure 4.4**). If required, cables may be installed through underground boring (known as horizontal directional drilling (**HDD**)), however, this is expected to occur only in exceptional circumstances and would be determined during detailed design. Details on HDD beneath Rokewood-Skipton Road are provided below, as well as a detailed construction methodology for the crossing of waterways by underground reticulation.

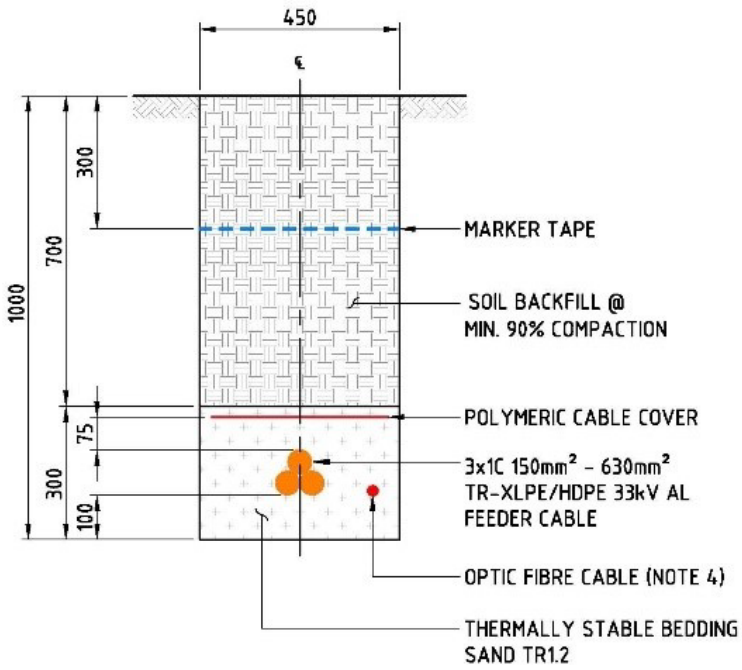

Figure 4.4 Indicative Cable Trench Design (measurements approximate and will be finalised in accordance with relevant standards and site conditions)

The electricity produced by each WTG would be transformed from low voltage to medium voltage (33 kV) by a transformer generally located within the nacelle or adjacent to each WTG. All reticulation cables will be underground except for a short section which will be an overhead line crossing Naringhil Creek between WTGs identified a T63 and T64 on **Figure 4.5** (to avoid cultural heritage significant land and significant flora patches). Control cables would be installed to conduct electricity between the WTGs, the BESS, and the substation. This overhead reticulation is located entirely within Golden Plains Shire.

An underground high voltage (220 kV) transmission line would then connect the Project from the onsite substation to the NEM at Berrybank Terminal Station (see **Section 4.3.4.4** and **Section 4.3.4.5**).

Horizontal Directional Drilling (HDD) beneath designated roads

HDD will be employed for the underground electrical reticulation crossing beneath Rokewood-Skipton Road and other minor local roads where required pursuant to secondary consents and based on a combination of design consideration and proposed traffic guidance systems. This trenchless installation technique preserves the road carriageway integrity and maintains continuous traffic operations, whilst also avoiding a patch of NTGVVP adjacent to Rokewood-Skipton Road (see **Figure 8.20**). The crossing will be oriented at the necessary angle to facilitate electrical connection between the proposed site boundaries in the shortest distance possible between point A and B. Excavation within the road reserve and sealed pavement will be avoided.

Entry and exit pits will be established clear of the carriageway on adjoining private land to minimise traffic disruptions and for maintenance access. The HDD alignment will be designed to achieve a minimum cover of 1,200–2,000 mm (as required by the responsible authority) from the finished road surface level to the top of the installed conduit as required in clause 706.03 of section 706, Installation or replacement of utility infrastructure within road reserves (*Road Management Act 2004*). All required clearances to existing underground services will be maintained.

The HDD works will comprise drilling a pilot bore beneath the carriageway along the approved alignment, followed by reaming to the required diameter. A protective conduit, typically High-Densityh Polyethylene (HDPE), will then be installed through the bore if required. Following installation of the conduit, the annulus between the bore and the conduit will be filled by pressure grouting, unless otherwise approved, to ensure ground stability and long-term integrity beneath the carriageway.

The 33 kV cables will be installed within the conduit/bore using a controlled winching process to prevent damage to the cables or conduit. Upon completion, entry and exit pits will be backfilled and reinstated to match surrounding ground levels, and all disturbed areas will be rehabilitated to pre-construction condition. The road pavement and traffic lanes will remain mostly unaffected for the duration of the works subject to detailed design and Traffic Management Plan construction requirements.

Construction methodology for waterway crossings

Only three major watercourses intersect the Project Site – Gnarkeet Chain of Ponds, Naringhil Creek, and Hoyles Creek. No project infrastructure intersects with Hoyles Creek, and direct interaction with Naringhil Creek has been avoided through the overhead reticulation. However, the underground transmission line crosses the Gnarkeet Chain of Ponds on Lismore-Pittong Road. To construct the underground transmission line where it crosses Gnarkeet Chain of Ponds, it will either be trenched during a dry period with topsoil reinstated to natural levels, or bored under the waterway to avoid impacts.

The Project also involves trafficking and trenching for underground reticulation through minor watercourses at 14 locations across the Project Site. These locations are all crossings of minor ephemeral watercourses.

The methodology below outlines the approach to constructing bed level/ford (or culvert crossings where required) and open cut trenching using an excavator or purpose-designed trenching equipment.

1. Waterway Assessment and Micro siting:
    a. Complete waterway visual assessments at the proposed crossing area to microsite away from/reduce points of erosion, cattle pads (if applicable) and riparian vegetation.
    b. Identify site-specific waterway constraints and potential impacts to inform design criteria and construction methodology.
    c. Comply with pre-crossing ecological, heritage and other aspect specific requirements in accordance with endorsed plans.
2. Detailed Design and Survey:
    a. Confirm alignment, levels, and extents of works during detailed design, including survey of the waterway bed and banks and confirmation of the preferred crossing type (e.g. ford or culvert), in consultation with the CMA where required.
    b. The design and installation of scour protection measures shall be undertaken in accordance with hydraulic design outputs.

3. Progressive ESC planning:
    a. Develop a site-specific A3 Progressive Erosion and Sediment Control Plan (ESCP) addressing both design- and construction-related risks to the waterway. The ESCP shall include baseline photographs, site-specific controls, and spill prevention and response measures for plant operating within or adjacent to the waterway.
4. Approvals:
    a. Obtain all required works-on-waterways permits relevant to the crossing type, design, and locality prior to commencement of construction.
5. Site Establishment and Flow Management:
    a. Install survey pegs to define the works area.
    b. Establish temporary erosion and sediment controls upstream and downstream of the works prior to construction.
    c. Where flows are present, install temporary diversion or isolation measures to provide a dry working area whilst maintaining flows unless otherwise approved. Any bypass pumping requires monitoring by a qualified fauna spotter catcher with aquatic ecology experience.
6. Construction of Bed-Level Access Track / Crossing[1]:
    a. Construct the bed-level access track as follows:
        i. Excavate bed and bank materials to the designed depth and slopes to provide adequate vertical clearance for vehicles and a foundation for imported pavement materials. Strip topsoil from banks and stockpile upslope outside the channel, protected from runoff.
        ii. Install geotextile or other approved separation layer to prevent migration of fines.
        iii. Construct the crossing using approved materials designed to withstand design flow velocities and vehicle loading, with plant positioned outside the channel where practicable. Import fill materials that are free of weeds.
        iv. Finish the surface flush with the existing bed level to avoid flow obstruction, afflux, or fish passage barriers.
        v. Install scour protection measures upstream and downstream of the crossing in accordance with design requirements.
        vi. Stabilise the bed and banks within the trafficable zone using suitable pavement materials, and revegetate cut and fill batters by tying into existing levels using stockpiled topsoil and binder.
        vii. Monitor post-construction conditions for visual signs of erosion, hydraulic change, or water quality impacts.
        viii. Remove temporary erosion and sediment controls when no longer required and once stability is achieved as determined through progressive rehabilitation monitoring.

[1] Culvert crossings shall be installed in accordance with approved design drawings and manufacturer specifications.

7. Trenching for Electrical Reticulation:
    a. When installing electrical reticulation via the ford or culvert crossing, excavate an open trench to the depth and width as per the design, in compliance with the Progressive ESCP in effect:
        i. Trenches shall not be left open overnight.
        ii. Bedding sand, free of weeds, shall be placed to the specified thickness.
        iii. Lay the conduit ensuring correct grade, alignment and jointing.
        iv. Backfill the trench with suitable excavated material, reinstating original soil horizons where practicable, and compact with the excavator bucket to prevent settlement and future exposure of the asset.
        v. Reinstate surface materials to match the original bed profile and maintain hydraulic continuity.
8. Weather and flow management:
    a. If rain is forecast within 7 days, reschedule works to a dry period.
    b. Cease works during high-flow events or unsafe conditions.
    c. Inspect controls after rainfall events of greater than 10 mm.
9. Post construction Survey and Verification:
    a. Following completion of the crossing and trenching works, undertake an as-built survey to confirm bed and bank levels, asset location, and crossing structure in accordance with approved design documentation.
    b. Develop and act on any correct actions to ensure execution is design and approval compliant.

FIGURE 4.5

Section of Overhead Reticulation that Crosses Naringhil Creek Between T63 and T64

Legend

- Project Site
- Major Watercourse
- Turbine
- Overhead Reticulation Pole
- Overhead Electrical Reticulation
- Underground Electrical Reticulation
- Passing Bay
- Wind Turbine Hardstand
- Access Tracks
- Underground Electrical Reticulation Footprint

0 100 200

Metres

Scale 1:6,500 at A4
GDA2020 MGA Zone 54

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4.3.4.3 Onsite substation

The Project would involve establishment of an onsite substation. Substations include the infrastructure required to collect the internal electrical reticulation from WTGs and increase the voltage for transmission lines to connect into the grid, and the infrastructure to physically connect to the grid (switching station). The electrical infrastructure has been designed to minimise the visual impact of the Project by siting the infrastructure away from residences and surrounding public viewpoints as far as practical, while maintaining the practical and operational needs of the infrastructure.

The typical substation arrangement would include step-up transformers, an array of cable marshalling, busbars, switchgear and protection, various voltage and current transformers, operation and facilities building with parking, communication facilities and tower, diesel generator, lighting, a buried earth grid, lightning masts, power conditioning equipment, a reactive power control system, and network support equipment as agreed with AusNet as the transmission network service provider. The ground surface within the substation enclosure would be covered partly with a layer of crushed rock and partly by concrete slabs. As the transformer(s) may each contain upwards of 50,000 L of oil (depending on operator requirements and final design), provision would be made in the design for an oil containment system for any oil that may leak or spill from the transformers or associated components.

4.3.4.4 Underground transmission line

The Project would connect to the 220 kV Ballarat to Terang transmission line at the existing Berrybank Terminal Station via a new 220 kV underground transmission line. The proposed underground transmission line extends from the onsite substation south on private land adjacent to Rankin and Gillespie Roads, east on private land adjacent to Lismore-Pittong Road, then south along the western side of Willowvale Road to the Ballarat to Terang 220 kV transmission line where it connects into Berrybank Terminal Station (see **Figure 4.2**). The overall length of the transmission line is approximately 15 km, of which 9.5 km is external to the wind farm site (but within the Project Site), south of Lismore-Pittong Road. A 7 m wide corridor is required for construction of the underground transmission line. Where located on private land, an easement would be established for the transmission line and determined during detailed design.

The underground transmission line would be constructed on the western side of the Willowvale Road within the existing road reserve. The Willowvale Road reserve has a total width of 40 m of which there is a width of approximately 20 m between the constructed road and the western boundary of the road reserve. The 7 m wide construction corridor for the underground transmission line would only take up a small portion of this western part of the road reserve. The construction corridor of up to 7 m wide would be adjacent to the existing roadway (within the road reserve) allowing for a road shoulder and drainage swale.

The transmission line would be buried in a trench at a depth of 1.4 m and a width of 3.15 m. Construction would involve excavating the trench, laying the cable and then backfilling the trench with the excavated spoil and protective membranes. Cable joining pits are required approximately every kilometre along the route and would be 2 m wide, 10 m long and 2 m deep. These joining pits would be within the 7 m wide construction corridor. During excavation works, temporary facilities would be required along the alignment for the purpose of storage of cables, movement of installation equipment and stockpiling. These activities would be contained within the 7 m wide corridor which is included in the construction footprint.

Placement of the 220 kV transmission line below ground avoids potential visual impacts typically associated with overhead transmission lines.

4.3.4.5 Terminal station

The Berrybank Terminal Station would require an upgrade to accommodate a new busbar configuration and associated infrastructure required to facilitate connection of the Project. Consultation with the asset owner (i.e. Lumea Transgrid Group) is currently underway for the extension of the terminal station. Upgrade works would be addressed as part of separate connection approvals and separate planning approval to ensure ongoing operation of the Terminal Station, facilitate the extension for the project and enable integrated operations post commissioning.

For the purposes of the environment report and planning permit applications, the terminal station upgrade works including the section of the transmission line connecting into the terminal station (within the Lumea site) have been excluded from the Project.

Assessment of impacts associated with the grid connection will be undertaken once the upgrade works and connection point are confirmed with the asset owner, and will then inform the associated approval triggers and pathway and assessment scope. Preliminary ecological assessment of the terminal station upgrade works area indicate no biodiversity values are present with most works proposed being within the existing terminal station footprint plus some in the adjacent cropped paddock. Despite this, native vegetation would be assessed on-ground and any permit triggers determined as part of the separate planning approval.

4.3.5 Temporary Facilities

The construction (and any major maintenance) phase would require temporary facilities. These temporary facilities would be located within the construction footprint defined for the Project (see **Figure 4.2**). Temporary facilities would consist, at a minimum, of areas dedicated for:

- Central site offices and compounds
- Centralised concrete batching plants to support turbine hardstand foundation construction based on a maximum of 30-minute travelling time to retain concrete quality specifications, and rock crushing facilities
- Laydowns and materials storage compounds
- Temporary meteorological masts.

The demand for temporary facilities is dependent on the construction methodology (refer to **Section 4.5**).

Temporary facilities will be sited within the construction footprint in accordance with a disturbance hierarchy that will preferentially locate temporary facilities:

- Within footprints of permanent infrastructure
- Co-located with proposed infrastructure
- In pre-existing cleared areas or areas of lower environmental value and
- Strategically to maximise service areas creating a least disturbance solution.

All temporary facility sites will be reinstated and rehabilitated once they are no longer required for construction, commissioning or for operations.

Temporary facilities may also include the use of offsite areas, approved for that purpose, for:

- Equipment staging at ports, strategic trade centres or nearest townships in line with existing zoning/planning provisions and
- Administration functions to deliver pre-construction requirements, social licence initiatives and regional economic development commitments.

4.3.5.1 Site offices and compounds

A construction compound is proposed to facilitate construction of the Project, located on Rankin Road near the corner of Hendersons Road. The construction compound would be adjacent to the BESS and onsite substation. This compound would include amenities such as field offices, kitchen/dining and sanitary facilities, and parking areas for Owner and contractor occupation. Arrangements will be made for power and communications at the site offices during the use period. The construction compound will be typical of that used at construction sites and may comprise onsite erection and fit out or delivery of pre-fabricated/portable units.

Compound construction would involve earthworks, hardstand construction (e.g. gravelling), drainage, security measures and environmental controls. The compound would include construction facilities such as fuel and waste storages.

Following the completion of construction, the construction compound will be converted to the permanent O&M facility (see **Section 4.3.3.2** above).

4.3.5.2 Concrete batching plants and rock crushing facilities

Two temporary concrete batching plants are proposed to be located within the Project Site, one located north of the existing quarry on the northern side of Notmans Road, and one south of Rokewood-Skipton Road on Rankin Road to enable maximum 30-min transport timeframes. Approximately 900 cubic metres of concrete would be required to construct each turbine foundation. Concrete batching material would be sourced offsite from local quarries and material suppliers. A detailed analysis of the potential sources of material will be carried out during preparation of the Traffic Management Plan to comply with conditions of the planning approval, which will include an assessment of potential impacts on the public road network.

An existing quarry adjacent to the Project Site on Rokewood-Skipton Road may be used to supply stone resource for construction of the turbine hardstands and road base material for access track upgrades, laydown areas, batching plant surfaces, and operation and maintenance areas. The existing Work Authority (WA139) indicates that there is sufficient stone resource to supply the Project during construction.

4.3.5.3 Laydowns/materials storage compounds

Five temporary laydown/material storage compounds are planned and will be set out to maximise construction efficiencies and minimise waste being exported from the Project Site.

Laydowns/materials storage compounds would be generally used for, but not limited to:

- Mobile contractor compounds/field offices (where not located at central facilities due to discrete work scope)
- Mobile concrete batching facilities to ensure concrete specifications are met
- Biosecurity hygiene facilities
- Strategic stores of construction materials located to service a number of work fronts
- Stockpiling engineered fill, excess soils for reuse, steel or timber for tower or pole construction, vegetation matter or commodities (e.g. resources, culverts and environmental supplies)
- Waste management, including waste classification and storage for removal offsite to an approved facility (landfill, recycling etc)
- Dangerous goods storage and use
- Staging facilities
- Traffic management including parking and turnarounds
- Water supply facilities.

4.3.5.4 Resources

Significant resources are required to support the Project's construction, with a reduced quantity required for ongoing operation and maintenance activities. Resources may include but not limited to:

- Aggregates (for access tracks and hardstands, for concrete batching for foundations)
- Rock (for drainage designs, waterway crossings)
- Sand (for bedding material for cabling)
- Engineered fill (for backfilling, filling where earthworks balancing has a shortfall)
- Landscaping materials (e.g. topsoil and vegetative matter)
- Non-potable water (for earthworks, dust suppression, hygiene and cleaning for example)
- Potable water (for drinking and cleaning facilities).

The Project would procure offsite resources for transport to site dependent on investigation, approvals and landholder consultation. See **Section 4.3.5.2**.

4.3.5.5 Temporary meteorological masts

Two temporary met masts have currently been installed on site. One temporary met mast is 160 m in height and installed on the eastern side of Rankin Road approximately 560 m north-east of the proposed BESS. The other temporary met mast is 110 m in height and is installed in the northern part of the Project Site approximately 1 km east of the end of Moreton Hill Road. These met masts are typically removed when construction of the WTG at that location has commenced. After three years on site, these met masts will either be taken down or separate planning approval will be sought to retain them. The temporary met masts were installed in April 2024 and July 2025.

4.4 Pre-construction

Pre-construction (i.e. early) activities are proposed to immediately commence following the procurement of planning and environmental approvals, permits and consents.

Pre-construction activities are required to be undertaken to enable the main construction works including access, environmental compliance and safety. Planning approval is required before any pre-construction works can occur. Pre-construction minor works are deemed minor in nature and scale and are necessary to address planning permit conditions including finalising management plans, support detailed design, procurement and scheduling. Some pre-construction minor works are able to be undertaken prior to addressing certain planning conditions being discharged and secondary consents being secured. These may include onsite surveys, geotechnical investigations, drone/aerial surveys, and landholder improvement works as committed to in agreements. Any pre-construction works that require secondary consents (such as native vegetation removal) will not be undertaken until such consents have been approved. A pre-construction minor works approval process will be established and followed prior to any work starting.

Pre-construction minor works would include (but are not limited to):

- Installation of survey markers (control points).
- Surveys including building/road dilapidation surveys, cadastral surveys.
- Drone/aerial surveys.
- Additional geotechnical investigations, including but not limited to:
    - Drilling/coring or the like
    - Test pitting (by excavator/drill/other)
    - Existing groundwater bore air lifts/pumping/retrofit (if required)
    - Installation of new groundwater monitoring bores (if required).
- Discharge of planning permit conditions and the preparation of environmental management plans.
- Ongoing environmental investigations required including but not limited to:
    - Additional baseline surveys
    - Pre-clearing surveys
    - Disturbance corridor and footprint survey marking
    - Non-disturbing inspections
    - Weed treatment and pest management.
- Establishment of Project Site:
    - Access points as specified and described in the Traffic Management Plan (**TMP**) and approval conditions
    - Relocation of existing services/utilities (where required).
    - Supply of services/utilities including power and communications, and water sources (where required).

- Establishment of temporary site offices and compounds, including associated vegetation clearing (noting native vegetation would not be cleared until relevant permit conditions have been discharged), heritage artefact salvage, earthworks, hardstand and facilities.

- Landholder improvement works and/or decommissioning/relocation of existing property infrastructure as committed to in agreements.
- Installation of environmental mitigation measures necessary to ensure compliance including but not limited to:
  - Biosecurity hygiene facilities
  - Erosion and sediment controls
  - Drainage features
  - Fencing, grids and gates
  - Signage
  - Temporary meteorological masts
- Intersection modifications and road upgrades on the public road network as approved by the road authority (following approval of the TMP and discharge of associated permit conditions).

4.5 Construction

It is anticipated that construction works will commence as soon as possible post-approval. The timing of construction will be driven by secondary approvals and plan authorisations, post-approval tendering, contractor selection, optimisation, detailed design and procurement processes, and a final investment decision. Construction is anticipated to take 1–3 years based on infrastructure combinations and resourcing.

Construction activities include all physical works to enable the operation, including, but not limited to, the construction and installation of WTGs, compounds, transmission lines, BESS, construction of ancillary infrastructure and establishment or construction of any temporary facilities which were not already established as part of the pre-construction minor works.

A general construction methodology for a wind farm comprising permanent and temporary facilities as defined herein includes the following key activities, but not limited to:

- Site preparation (where required and approved under the planning permits for native vegetation and access (e.g. mega mulching, dozer, scalloping, excavator or hand clearing, track construction).
- Civil works (e.g. earthworks for hardstands/tower pads, trenching etc., concrete pouring, equipment washing, rehabilitation, waste management).
- Assembly and erection activities (e.g. single rotor lift vs blade lifts, overhead reticulation pole assembly, stringing). Overhead reticulation will be strung by the use of a temporary 'pilot line' which is strung across (either manually or by use of helicopter / drone), tensioned, and then used to pull the actual conductors across into place.
- Contracting arrangements (e.g. productivities, work packages, emergency management and sequencing).

- Logistics (e.g. fatigue management, supply chain, quality specifications).

All construction activities will be contained within the construction footprint. Within the construction footprint, the buffers outlined in **Table 4.7** have been applied to project infrastructure to allow for construction activities.

Table 4.7 Project Infrastructure Buffers within the Construction Footprint

Project component	Footprint	Buffer applied
Access tracks	5.5 m wide	A 2 m buffer either side of proposed access tracks has been applied. Therefore, a 10 m width in total has been assessed to allow for the shoulder and drainage where required. The 5.5 m trafficable width extends to 6 m at the passing bays. The exception to this is on existing roads such as Spring Hill Road where no additional impacts are anticipated outside of the existing road.
Hardstand and other infrastructure	90 m x 50 m	N/A
Underground electrical reticulation	0.45 m wide trench	For a single circuit - 3 m wide corridor for access and spoil on one side (3.45 m wide in total). For 2 circuits of reticulation – 2 m wide thermal spacing required between each trench, with a 3 m wide corridor for access and spoil on one side (5.45 m wide in total).
Underground transmission line	3.15 m wide trench	7 m wide construction corridor.
Overhead electrical reticulation poles	1 m	3 m buffer around footprint.

4.6 Commissioning

Commissioning involves several grid/regulatory based tasks to energise and connect infrastructure to the external power network.

Commissioning is a ramp up process commencing at the substation, then at individual erected WTGs. The start-up and shut down of turbines is tested in accordance with a Commissioning Plan approved by AEMO and the relevant NSP.

It is relevant to note that commissioning substantially overlaps construction duration. Final commissioning means the operational phase of an asset commences, based on approval by AEMO and considered the target date from which environmental compliance with operational conditions must be met.

Commissioning commences when the first collector group of turbines is energised in accordance with the Commissioning Plan approved by AEMO and the NSP.

Prior to commissioning, there is a pre-commissioning phase, which involves checks that:

- the WTG controllers were successfully equipped with necessary programs
- WTG controllers' parameters are set-up to run in accordance with the local grid specifications
- all mechanical parts and electrical equipment are functioning normally

- setup of the protection settings for circuit breakers and check against WTG parameters
- all sensors are communicating correctly and normally with the WTG controllers
- all electrical motors are functioning and operational.

This pre-commissioning phase is part of the 'installation' of components of the wind turbines and usually occurs or is planned to occur prior to the "*full commissioning checks*" and commissioning. The extent that some turning of turbines occurs in this pre-commissioning phase is limited and note that no WTGs would be connected to the grid in this pre-commissioning phase.

4.7 Operations

The Project commences operations following commissioning approval by AEMO for WTGs and following practical completion hold point testing of the construction phase.

The Project's operation phase will conduct activities across the Project in line with its approval conditions and best operating practices. The Project would have an operational life of approximately 30 years and would require up to 10 direct FTEs. During operation, a smaller physical disturbance area is required compared to the construction footprint, defined as the operational footprint. This operational footprint allows for safe operations and in accordance with landholder agreements.

Activities undertaken during operation within the operational footprint includes, but is not limited to:

- Civil maintenance (of retained working areas) e.g. maintaining tracks.
- Vegetation and land management control within disturbed areas, including fire asset protection, invasive species management, progressive rehabilitation monitoring and rectification.
- Fencing and boundary maintenance including drainage.
- WTG and ancillary facilities maintenance scopes inclusive of heavy and over-sized over-mass (OSOM) vehicles that may be used to facilitate replacement of large components.
- Facilities management (e.g. compounds, office and amenities, water supply, waste disposal).
- Meteorological mast maintenance.
- High voltage services including inspections and repairs to infrastructure, underground services dig ups (cable excavations) and restringing powerlines for example.
- General mechanical and electrical services as per asset maintenance plans and schedules.
- Ongoing routine inspections and environmental monitoring in accordance with relevant approval conditions.

During operations it may be required to conduct installations or retrofit works across the Project in line with good operating practices or another mode of direction. These works would be aimed at improving operational performance/ensure ongoing asset efficiency or extend the design life of plant and equipment (particularly where there have been cost effective changes in technology).

4.8 Decommissioning

Decommissioning of the Project would involve either:

- Refurbishment or repowering

- Deconstruction and final rehabilitation.

If repowering is proposed, dependent on the scope it could include physical works required to construct, remove, replace or refurbish the Project infrastructure within the bounds of the approved construction phase scope of works for this Project. Consistency checks with this project description and conditions of approval will be undertaken to define key requirements for assessment.

Deconstruction and final rehabilitation would take effect if the Project is not extended at the end of its design life (including any maintenance/upgrades that extended the operational period beyond its original design years). Deconstruction could include either repurposing or complete removal of infrastructure subject to negotiations with landholders, community and regulators.

The scope of decommissioning could include:

- Retrofit or upgrade of existing infrastructure based on the approved design and approvals for the agreed purpose.
- Removal of above ground infrastructure.
- De-energisation of buried infrastructure.
- Burial of infrastructure.
- Rehabilitation activities on land to the agreed purpose, whether to its original or an alternative use, as agreed to by the landholders.

Decommissioning activities will be undertaken in accordance with planning approval and Decommissioning Plans developed for the Project (in accordance with planning permit conditions).

It is noted that rehabilitation requirements may extend beyond the decommissioning phase for the duration required to ensure final rehabilitation objectives are complied with. This may include both onsite and offsite locations.

4.9 Timing

It is intended that the Project may be constructed, operated, upgraded and/or decommissioned in stages of various sizes or arrangements within the parameters of the approvals. Staging of construction, if required, would be determined following post-approval tendering, contractor selection, optimisation, detailed design, and purchasing.

Indicatively, project phases are provided in **Table 4.8.**

Table 4.8 Project Phases

Project phase	Duration
Pre-construction	0–1 years depending on scope and pre-requisites
Construction	Approximately 1–3 years based on infrastructure combination and resourcing
Operations and maintenance	Approximately 30 years depending on original design life, maintenance and upgrades
Decommissioning	1–3 years depending on scope and final land use(s)

5.0 Approvals and Legislative Framework

5.1 Overview

The Project is being assessed under the EE Act through the environment report process. While an environment report is not a statutory approval for the Project, it informs the Minister's assessment on the acceptability of the Project's potential environmental effects. The Minister's assessment of the environment report then informs decisions to be made by relevant Commonwealth, Victorian and local government decision makers responsible for issuing statutory planning and environmental approvals for the Project.

The Project will require the following primary planning and environmental approvals (see **Section 5.3**):

- Approval under the EPBC Act.
- Planning approval under the Corangamite and Golden Plains Planning Schemes in accordance with the P&E Act.
- An approved Cultural Heritage Management Plan (**CHMP**) under the *Aboriginal Heritage Act* 2006 (**AH Act**).

The Project will also require a range of secondary approvals to permit the carrying out of specific aspects, such as works on public roads and waterways (see **Section 5.4**). These will be sought following receipt of primary approvals for the Project and will be informed by detailed design and further pre-construction investigations and infrastructure procurement decisions by the Proponent.

5.2 Environment Effects Act 1978 (Vic)

Under the Victorian EE Act a project is referred to the Minister for Planning (**the Minister**) if there is potential for significant environmental effects to occur. The Minister then decides whether an EES is required for the project, and will make one of the following decisions:

- An EES is needed. Approval decisions are put on hold until the EES process is completed.
- An EES is not needed. Decision makers can go ahead with their approval process.
- An EES is not needed but conditions must be met (such as an environment report).

Conditions might relate to the location or dimensions of the project or mitigation measures, or requirements for further studies or consultation.

5.2.1 Requirement for an Environment Report

The Project was referred to the Minister on 15 February 2024 in accordance with Section 8(3) of the EE Act, seeking the advice of the Minister as to whether an EES is required for the Project. On 24 September 2024, the Minister determined that the Project does not require an EES subject to conditions being met to assess and manage specific impacts. The conditions require an environment report process to be undertaken.

The following reasons were provided in the Minister's decision:

- There is potential for significant adverse effects to biodiversity values, including associated with wind turbine strike and cumulative impacts for some listed threatened species including Brolga, Grey-headed Flying-fox, Southern Bent-wing Bat, Eastern (common) Bent-wing Bat and White-throated Needletail.
- The conditions set out through this decision provide the most appropriate means for examining the uncertainties and potential impacts for the limited scope of potentially significant effects at a regional or state scale that may occur as a result of the delivery of the project.
- Other potential adverse effects of the project are more understood and will be readily addressed separately, through other existing statutory requirements under the *Planning and Environment Act 1987*, the *Aboriginal Heritage Act 2006*, *Heritage Act 2017*, *Water Act 1989* and *Environment Protection Act 2017*.

The environment report must be prepared in consultation with DTP IAU and the Department of Energy, Environment and Climate Action (**DEECA**) and completed to the satisfaction of the Minister for Planning before it is exhibited for public comment.

The Project was also determined to be a 'controlled action' under the EPBC Act due to the potential for significant impact on MNES, including listed threatened species and communities, and listed migratory species. As the environment report process is an accredited process under the EPBC Act Bilateral Agreement between the Commonwealth and Victorian Governments, the environment report is also required to assess the Project's potential impacts on MNES. See **Section 5.3.1** below for further details.

5.2.2 Environment Report Process

Following the Minister's decision that an EES was not required, with the condition that an environment report is prepared, the first step in the environment report process is preparation of the scoping document. DTP IAU prepared the scoping document, in consultation with DEECA and DCCEEW, and issued a final version in March 2025. The environment report has been prepared in accordance with the scoping document.

An Ecological Assessment (**Appendix C)** has been prepared to assess the Project's potential impacts on biodiversity values and to inform the preparation of the environment report.

Following formal submission of the environment report, to the satisfaction of the Minister, the environment report will be placed on exhibition for public comment. The environment report is required to be on public notice for a minimum of 14 business days in accordance with the Minister's decision. The environment report will be on public notice alongside the Project's planning permit applications for a period of 28 business days. A public notice period of 28 business days was agreed to by the Proponent, DTP IAU and DTP Energy Assessment to provide an aligned process where the public can view and comment on the Project's approval documentation at the same time. During this time, the public can read the environment report and planning permit applications and make written submissions about matters presented within these documents. Public exhibition allows for stakeholder-identified concerns and issues to be reflected in environment report decision making. Both the environment report and planning permit applications will be exhibited together on the Engage Victoria website.

Submissions received during the exhibition period will be addressed by the Proponent and responded to in an addendum report to this environment report, and then submitted to the Minister to inform their assessment of the Project's impacts.

The Minister will then provide an 'Assessment Report' to the Commonwealth Minister for the Environment and Water, which will inform the Commonwealth Minister's decision on whether the Project is approved, approved with conditions, or refused under the EPBC Act. The Assessment Report will also be considered by relevant Victorian Government decision makers to inform decisions on the Project including the Minister's decision on the planning permit applications under the P&E Act.

The main steps in the environment report process and the statutory approvals required for the Project are shown in **Figure 5.1**.

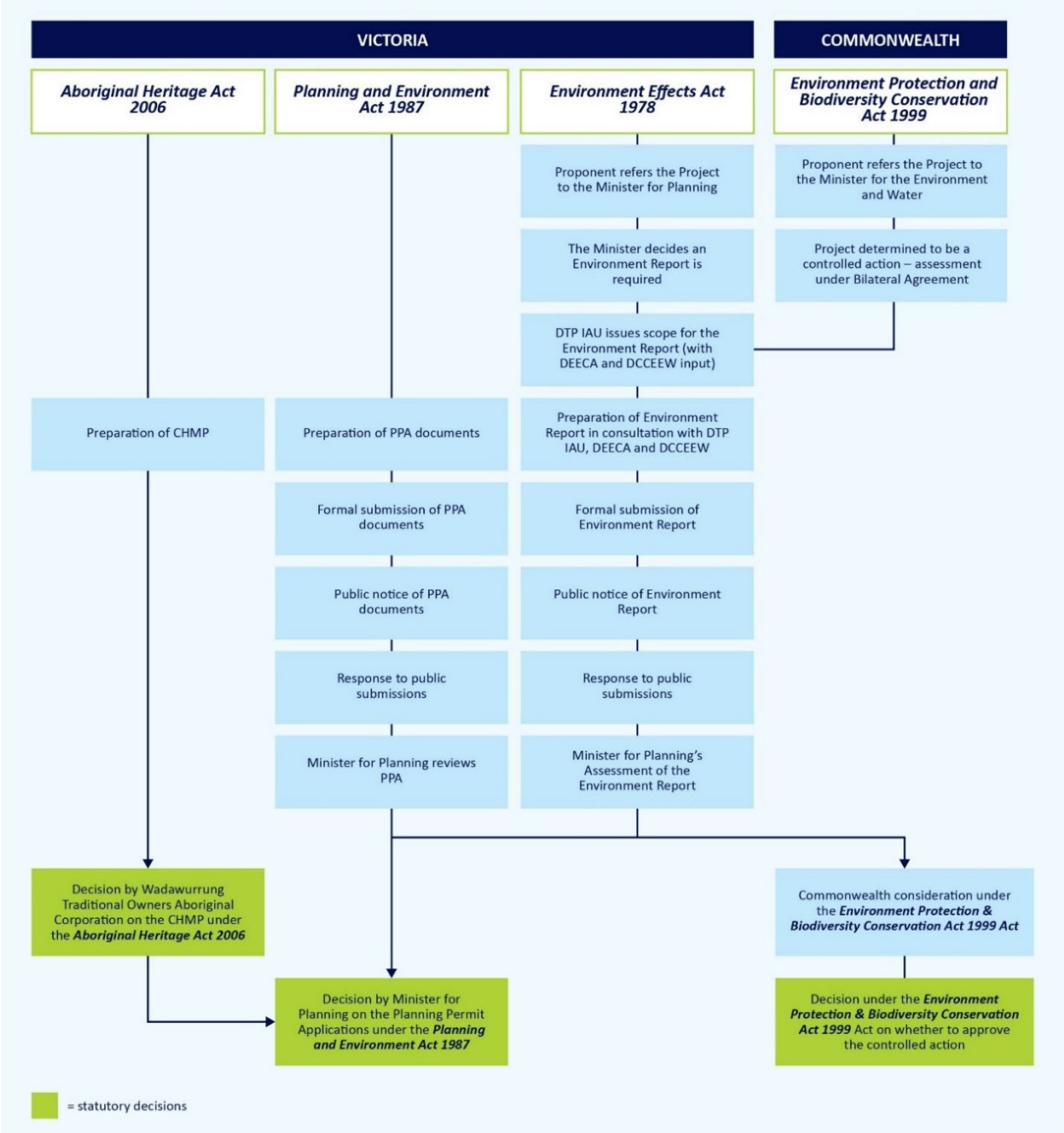


Figure 5.1 Environment Report Process and Primary Approvals

5.3 Primary Approvals

5.3.1 Environment Protection and Biodiversity Conservation Act 1999 (Cth)

The EPBC Act is the Commonwealth's principal environmental protection and biodiversity conservation legislation. It provides for the conservation of biodiversity and the protection of the environment, particularly those aspects which are among the nine MNES protected under Part 3 of the EPBC Act, including World Heritage Properties, National Heritage Places, Ramsar wetlands, nationally listed threatened species and ecological communities and listed migratory species. A 'controlled action' (i.e., actions that are determined as likely to have a significant impact on a MNES) are subject to assessment and approval under the EPBC Act.

The Project was referred under the EPBC Act on 20 February 2024 and on 17 July 2024, a delegate of the Commonwealth Minister for the Environment and Water decided under Section 75 of the EPBC Act that the Project is a 'controlled action' requiring assessment and approval under Parts 8 and 9 of the EPBC Act due to the potential for significant impacts on MNES.

The relevant controlling provisions for MNES under the EPBC Act are listed threatened species and communities (sections 18 and 18A) and listed migratory species (sections 20 and 20A), including:

- Blue-winged Parrot (*Neophema chrysostoma*) – Vulnerable
- Brown Treecreeper (*Climacteris picumnus victoriae*) – Vulnerable
- White-throated Needletail (*Hirundapus caudacutus*) – Vulnerable
- Grey-headed Flying-fox (*Pteropus poliocephalus*) – Vulnerable.

A decision by the delegate confirmed the Project is to be assessed by way of the accredited Victorian Environment Report process set out in Part 5 of Schedule 1 of the Bilateral Agreement and in accordance with Section 45 of the EPBC Act. The Bilateral Agreement between the Commonwealth and State has been applied to enable a single coordinated assessment to be undertaken for the Project and to enable integrated consideration of related impacts on relevant matters of state and national significance, including MNES.

5.3.2 Planning and Environment Act 1987 (Vic)

The P&E Act is the primary legislative framework for planning the use, development, and protection of land in Victoria. In particular, the P&E Act provides the framework for planning schemes, which contain State and local government policy, together with a suite of zone, overlay and particular provisions that apply to each municipality in Victoria and which manage land use and development. Development must have regard to the objectives of planning in Victoria as set out in Section 4 of the P&E Act.

Two planning permit applications have been prepared to seek approval for the use and development of land for a wind energy facility (wind farm) and utility installation (BESS and transmission line) in accordance with Corangamite Planning Scheme and the Golden Plains Planning Scheme.

The Project is seeking planning permit approval via the Development Facilitation Program (**DFP**) with assessment under Clause 53.22 Significant Economic Development due to the scale of the renewable energy facility generation being greater than one megawatt and the significant economic benefits the Project will provide to Victoria. The Minister for Planning is the Responsible Authority for an application under Clause 53.22 and is therefore responsible for the assessment and determination of the planning permit applications for the Project. The planning permit applications for the Project will be placed on public exhibition concurrently with this environment report to allow for a coordinated consultation period.

See **Section 5.2.2** for additional information regarding the approval process under the P&E Act in alignment with this environment report prepared under the EE Act and EPBC Act.

5.3.3 Aboriginal Heritage Act 2006 (Vic)

The AH Act provides protection for all Aboriginal cultural heritage places and objects including both tangible and intangible. Aboriginal cultural heritage is being assessed and managed through the preparation of a Project CHMP (CHMP 19190) pursuant to the AH Act and Aboriginal Heritage Regulations 2018 (AH Regulations) due to the Project comprising high impact activities and intersecting areas of cultural heritage sensitivity. Pursuant to regulation 43(1)(a) and (b)(xxvi) of the AH Regulations, construction of a wind energy facility is considered a high impact activity that triggers the requirement for a mandatory CHMP.

CHMP 19190 is being prepared in consultation with WTOAC as the RAP with responsibility for the Project Site. Once the assessment has been completed and the extent, nature and significance of the Aboriginal places within the Project Site have been determined, consultation will occur between the Proponent and the WTOAC to determine the management conditions of the Aboriginal places to the satisfaction of the WTOAC. CHMP 19190 will then be submitted to the WTOAC for evaluation and approval.

In accordance with Section 52 of the AH Act, the planning permits cannot be issued by the Minister until the CHMP for the Project has been approved.

5.4 Secondary Approvals

Several other permits and approvals may be required for specific aspects of the construction and operation of the Project, as detailed in **Table 5.1.** Required secondary approvals would be secured following issue of approved planning permits, or at the applicable time during Project construction, operation and/or decommissioning.

Table 5.1 Summary of Secondary Approvals

Legislation	Responsible Authority	Approval	Requirement
Heritage Act 2017	Heritage Victoria	Heritage Permit/ Heritage Consent	The Project does not require approval under the Heritage Act as no known heritage places listed on the Victorian Heritage Register (**VHR**) or Victorian Heritage Inventory (**VHI**) have been identified within the Project Site. However, the Heritage Act also protects previously unknown archaeological sites not listed on the VHI. If a potential archaeological site (i.e. artefact, feature or deposit 75 or more years old) is identified during the Project, Heritage Victoria would need to be notified of the find and a determination made on whether the material meets the definition of an archaeological site for which a consent would be required under the Heritage Act. A consent or consent exemption would need to be obtained from Heritage Victoria prior to disturbance of any archaeological site.
Flora and Fauna Guarantee Act 1988	DEECA	Permit to take Protected Flora from public land	A permit to take will be required under section 48 of the FFG Act to remove protected flora from public land, including road reserves. Protected flora includes listed threatened flora, listed vegetation communities and other declared general protected flora. Protected flora requiring a permit to take for the Project includes: • 0.339 ha of Western (Basalt) Plains Grassland community impacted in road reserve • Seven Pale Swamp Everlasting individuals impacted on Rankin Road and Willowvale Road. • Generally protected flora being members of the *Orchidaceae* family (Common Onion-orchid and Slender Sun-orchid) and *Dirius* family (Common Golden Moths) impacted in road reserve. Impacts to FFG Act listed threatened flora recorded during the ecological field surveys have largely been avoided by the Project (see **Appendix C**).
Wildlife Act 1975	DEECA	Management Authorisation Permit	The Project would require authorisation from DEECA pursuant to Sections 22, 28A and 28G of the *Wildlife Act 1975* should any wildlife encountered during construction require salvage and relocation. A suitably qualified wildlife handler holding a current management authorisation under the *Wildlife Act 1975* may be engaged to salvage wildlife if required.

Legislation	Responsible Authority	Approval	Requirement
Catchment and Land Protection Act 1994	DEECA	Permit to remove or sell soil, sand, gravel or stone that contains or is likely to contain any part of a noxious weed, or which comes from land on which noxious weeds grow (if required).	The Project may require a permit to remove soil if it is likely to contain a noxious weed. Discussion with the authority will be undertaken to determine requirements. Three noxious weeds listed under the *Catchment and Land Protection Act 1994* were recorded during vegetation assessments for the Project (see **Appendix C**). A weed and pest management plant will be prepared for the Project to appropriately manage and control noxious weeds and pest animals.
Road Management Act 2004	DTP Transport Local Councils	Consent to work on, in, under, or over a road	Written consent is required from the relevant coordinating road authority (i.e. DTP Transport for State arterial roads and the relevant Council for local roads within their LGA) for any construction works within, on or under public (open) roads. Refer to **Section 4.3.3.1** and **Section 4.3.3.4** for details on road upgrades required. As the Project will involve a series of upgrades to local roads and intersections for the transport of construction materials and to provide access to the Project Site, consent would be sought from the relevant authority as required prior to works commencing.
Crown Land (Reserves) Act 1978	DEECA	Licence or lease for use and development of reserved Crown land	The Project involves a section of overhead reticulation crossing a parcel of reserved Crown land (SPI 2002\PP3054) along Hoyles Creek / Naringhil Creek. The relevant lease or licence arrangements (where applicable) will be finalised with DEECA as the relevant Crown land manager once planning approval for the Project is obtained.
Land Act 1958	DEECA	Licence of lease for use and development of unreserved Crown land	Unreserved Crown land comprising unnamed roads (also called 'paper roads') is located within the Project Site. Some of these paper roads are subject to unused road licences that enable their use for other purposes, such as farming. There are several instances where access tracks and underground cabling proposed by the Project will cross paper roads with and without unused road licences. The relevant lease or licence arrangements (where applicable) will be finalised with DEECA (in consultation with existing licence holders) once planning approval for the Project is obtained.

Legislation	Responsible Authority	Approval	Requirement
Water Act 1989	Corangamite Catchment Management Authority (**CMA**)	Works on Waterways Permit	The Project would involve works (e.g. culverts, bed level crossings) on multiple designated waterways occurring within the Project Site mainly for access track and electrical reticulation cable crossings. A small section of overhead electrical reticulation will also cross Naringhil Creek (a designated waterway) between WTGs identified a T63 and T64. A works on waterways permit will be required from Corangamite CMA prior to construction of any works for the Project in, on, over or under a designated waterway.
	Southern Rural Water	Take and Use Licence, Works Licence	If the Project requires groundwater extraction for use during construction, a licence would be required under Section 51 of the *Water Act 1989*. If construction of a bore is required to facilitate groundwater extraction, a works licence would be required under Section 67 of the *Water Act 1989*.
Environment Protection Act 2017	Environment Protection Authority (**EPA**)	Comply with the general environmental duty (**GED**) and other relevant duties under the EP Act.	The Proponent will comply with the GED to understand the risks of harm from the Project to human health and the environment and minimise these risks so far as reasonably practicable.
		Implement obligations and requirements under the Environment Protection Regulations 2021, made under the EP Act.	The design and delivery of the Project will comply with appropriate regulations and guidelines under the EP Act where they apply to works and other Project activities, including both construction and operation.
		Comply with the duties under the EP Act.	The design and delivery of the Project will comply with Section 166 of the EP Act in relation to the emittance of unreasonable noise.

5.5 Policies, Plans, Guidelines and Instruments

The following section summarises the main state, regional and local policies, plans, guidelines and instruments that have been considered in assessing impacts as part of this environment report, which are focussed on biodiversity impacts. In addition, a range of relevant species and community specific listing descriptions, conservation advice, recovery plans and action statements have been considered in the assessment of biodiversity impacts as referenced in the Ecological Assessment (**Appendix C**).

5.5.1 Interim Guidelines for the Assessment, Avoidance, Mitigation and Offsetting of Potential Wind Farm Impacts on the Victorian Brolga Population 2011

The *Interim guidelines for the assessment, avoidance, mitigation and offsetting of potential wind farm impacts on the Victorian Brolga population 2011* (DSE, 2012) (**the interim guidelines**) were developed by the Brolga Scientific Panel in collaboration with the South-West Victorian Brolga Research Project in response to risks posed to Brolga (*Antigone rubicunda* - 'Threatened' under the FFG Act) by the development of individual wind energy facilities as well as the broader wind energy generation industry in Victoria.

The interim guidelines aim to protect the Brolga population and ensure responsible wind farm development by providing guidance on an assessment methodology for impact assessments on Brolga and for suitable mitigation measures supporting sustainable wind farm development and Victorian Brolga populations. The specific objective of these guidelines is that individual wind farms have, at a minimum, a zero net impact on the Victorian Brolga population.

As required by the scoping document, the Project has assessed the potential impacts on Brolga in accordance with the interim guidelines. A Level 1, Level 2 and Level 3 Assessment have been completed under the interim guidelines and in detailed in **Section 8.0** and **Appendix D.**

5.5.2 Guidelines for the Removal, Destruction or Lopping of Native Vegetation

The *Guidelines for the removal, destruction or lopping of native vegetation* (DELWP, 2017a) (**native vegetation guidelines**) set out and describe the application of Victoria's state-wide policy in relation to assessing and compensating for the removal of native vegetation. This includes the assessment of impacts from removing native vegetation on biodiversity and other values and how offsets are calculated and established to compensate for the loss in biodiversity value from the removal of native vegetation. The native vegetation guidelines are incorporated into all planning schemes in Victoria.

The native vegetation guidelines are underpinned by applying a three-step approach to achieve no net loss to biodiversity as a result of the removal, destruction or lopping of native vegetation. The three-step approach is as follows:

- 'Avoid the removal, destruction or lopping of native vegetation
- Minimise impacts from the removal, destruction or lopping of native vegetation that cannot be avoided

- Provide an offset to compensate for the biodiversity impact if a permit is granted to remove, destroy or lop native vegetation'.

The assessment of native vegetation and the planning permit applications to remove native vegetation have been prepared to meet the application requirements that are outlined in the native vegetation guidelines. Native vegetation will be removed where required within the construction footprint of the Project, with suitable offsets proposed for this removal in accordance with the native vegetation guidelines.

Proposed native vegetation removal, impacts and offsets are described in **Section 8.6.1.**

5.5.3 EPBC Act Significant Impact Guidelines 1.1 – Matters of National Environmental Significance

The *EPBC Act Significant Impact Guidelines 1.1 – Matters of National Environmental Significance* (DoE, 2013) provide overarching guidance on determining whether an action is likely to have a significant impact on a MNES protected under the EPBC Act. These guidelines have been used as part of the Ecological Assessment to determine if the Project is likely to have a significant impact on MNES (see **Section 8.6**).

5.5.4 EPBC Act Policy Statement 2.3 – Wind Farm Industry

The *EPBC Act Policy Statement 2.3 – Wind farm industry* (DEWHA, 2009) aims to assist developers in determining whether their projects have potential to impact on MNES. It is recommended this policy statement is read in conjunction with the EPBC Act *Significant Impact Guidelines 1.1 – Matters of National Environment Significance*.

These guidelines were utilised as part of the Ecological Assessment to determine potential significant impacts on MNES (see **Section 8.6**).

EPBC Act Policy Statement 2.3 is to be replaced by the *Draft Onshore Wind Farm Guidance - Best practice approaches when seeking approval under Australia's national environmental law* (see **Section 5.5.5**).

5.5.5 Draft Onshore Wind Farm Guidance – Best Practice Approaches when Seeking Approval under Australia's National Environmental Law

The purpose of this guidance document is to describe best practice approaches to assist the Australian onshore wind farm industry when bringing projects forward for approval under the EPBC Act. The document provides high level guidance on the referral, assessment, and approval process for proposed onshore wind farm projects under the EPBC Act, with a particular focus on bird and bat management.

This guidance outlines that assessment documentation will need to demonstrate that the Project can:

- avoid, minimise and/or mitigate impacts on MNES, particularly through initial site selection, informed by available best practice statistical methodology and survey data and/or modelling that is site-specific.

- propose feasible mitigation measures that reduce impacts.
- apply survey data and mitigation strategies to deliver adaptive site-specific management plans for impacted MNES with corrective actions to be undertaken if mitigation measures are not effective and commitments of regular review cycles that will be used to adapt the management plans to industry best practices.
- as a last resort, propose offsets that deliver gains for the MNES and Australia's environment.

This guidance document was used as part of the Ecological Assessment to determine assess significant impacts on MNES and develop feasible mitigation measures, particularly in relation to birds and bats.

5.5.6 Onshore Wind Farms – Interim Guidance on Bird and Bat Management

The Commonwealth *Onshore Wind Farms - Interim Guidance on Bird and Bat Management* (DAWE, 2021) has been developed to provide guidance for wind farm proponents on the expectations of DCCEEW for assessments under the EPBC Act, with a focus on the requirements of a Bird and Bat Management Plan. The purpose of a Bird and Bat Management Plan is to support the assessment and management of impacts associated with collision, barotrauma and site utilisation, to enable a robust long-term approach to mitigate and manage impacts of wind farms on relevant listed threatened and migratory bird and bat species.

The guidance document provides information for the three key phases of developing a package comprising:

1. 'An initial desktop assessment (a species and site characterisation to get an overview of potential risks and impacts).
2. Assessment requirements where potential significant impacts to listed bird and/or bat species are identified.
3. Post commissioning requirements, including monitoring and adaptive management to identify any impacts and ongoing improvement measures.'

See **Appendix E** for the draft Bat and Avifauna Management (**BAM Plan**) prepared for this Project. The BAM Plan for the Project has considered this guidance in the development of proposed mitigation and management measures for the Project.

5.5.7 Planning Guidelines for the Development of Wind Energy Facilities in Victoria

The *Planning Guidelines for Development of Wind Energy Facilities in Victoria* (**the wind energy guidelines**) (DTP, 2023) is a reference document listed under Clause 19.01 (Renewable Energy) and in the decision guidelines for Clause 52.32 (Wind Energy Facility) of the Corangamite Planning Scheme and Golden Plains Planning Scheme. In recognition that Victoria's abundant wind resources support the development of large-scale, grid-connected wind energy facilities, the wind energy guidelines provide advice for relevant authorities, proponents or applicants, and the community towards suitable locations for wind energy facilities in Victoria.

The purpose of the wind energy guidelines is to establish:

- A framework for a consistent and balanced approach to the assessment of wind energy facility projects.
- A series of consistent operational performance standards for informing the assessment and operation of wind energy facilities.
- Guidance towards how planning permit application requirements related to wind energy facilities is met.

The wind energy guidelines inform planning decisions for wind energy facility proposals, including what information and assessment should be provided with an application for a wind energy facility. This includes the following considerations which have been addressed in the environment report:

- Impacts to flora, fauna, and ecological systems, ensuring proponents accurately identify potential impact pathways and appropriate mitigation measures through suitable survey regimes. The removal of native vegetation also requires the consideration of the extent and type of native vegetation to be removed, and efforts made to protect native vegetation in the future.

In line with the wind energy guidelines, the overall objective of the BAMP is to establish an outcome-focused adaptive monitoring and management program designed to identify, quantify, minimise, and where necessary offset, potential impacts on biodiversity values, especially regarding threatened bid and bat species, to ensure that the net impact of wind energy facility is, at worst, neutral.

5.6 Planning Considerations

Table 5.2 details the planning considerations under the Corangamite Planning Scheme and Golden Plains Planning Scheme (**the Planning Schemes**) of relevance to this environment report and required by the scoping document, which are focussed on biodiversity impacts.

The planning permit applications under the Planning Schemes assess how the Project complies with the objectives and application requirements of the clauses detailed in **Table 5.2**. For details regarding all planning controls affecting the Project and Project Site, refer to the planning permit applications prepared for the Project.

Table 5.2 Planning Considerations Relevant to this Environment Report

Clause	Planning Scheme	Implications for the Project
Clause 02.03-2 (Environmental and Landscape Values)	Corangamite and Golden Plains	Clause 02.03-2 of both Planning Schemes seeks to protect biodiversity and environmentally significant landscapes while ensuring development is managed to minimise environmental impacts and balance conservation with land use and bushfire considerations.
Clause 12.01-1S (Protection of Biodiversity)	Corangamite and Golden Plains	Clause 12.01-1S of both Planning Schemes has the objective to protect and enhance Victoria's biodiversity. All strategies listed under this clause are relevant to the Project.
Clause 12.01-2S (Native Vegetation Management)	Corangamite and Golden Plains	Clause 12.01-2S of both Planning Schemes has the objective to ensure that there is no net loss to biodiversity as a result of the

Clause	Planning Scheme	Implications for the Project
		removal, destruction or lopping of native vegetation. All strategies listed under this clause are relevant to the Project.
Clause 42.01 (Environmental Significance Overlay – Schedule 1 (Watercourses, water body and wetland protection overlay)) (**ESO1)**	Corangamite	A small section of ESO1 associated with the upper catchment of the Gnarkeet Chain of Ponds is intersected by the underground transmission line on Rankin Road and Lismore-Pittong Road (see **Figure 5.2)**. A permit is not required for the removal of vegetation within ESO1 under Clause 42.01 of the Corangamite Planning Scheme, as the area of the Project Site covered by ESO1 is wholly within a cropped paddock, and no vegetation removal other than removal of 'planted vegetation' is proposed within ESO1. A permit is required to construct a building or carry out works within ESO1 associated with the underground transmission line.
Clause 42.01 (Environmental Significance Overlay – Schedule 2 (Watercourse protection) (**ESO2**)	Golden Plains	ESO2 affects areas within the south-east of the Project Site along Hoyles Creek, Naringhil Creek and Gnarkeet Chain of Ponds. The small section of overhead reticulation between WTGs 63 and 64 crosses Hoyles Creek and Naringhil Creek within the ESO2. Two overhead transmission poles are located within this section of ESO2. The underground transmission line also crosses the ESO2 associated with Gnarkeet Chain of Ponds on Gillespies Road and Lismore-Pittong Road. The area of the Project Site covered by ESO2 is mostly within a cropped paddock. No native vegetation removal is proposed within the ESO2. Some removal of non-native vegetation comprised of degraded grassland will be required for three power poles associated with the section of overhead reticulation across Naringhil Creek. As such, a permit will be required for the Project for removal of non-native vegetation within the ESO2 for the three power poles. A permit will be required to construct a building or carry out works within ESO2 associated with the underground transmission line and the overhead reticulation crossing of Hoyles Creek and Naringhil Creek.
Clause 42.02 (Vegetation Protection Overlay – Schedule 2 (Roadside vegetation protection area)) (**VPO2**)	Corangamite	Spring Hill Road to the north-west of the Project Site is subject to VPO2 under the Corangamite Planning Scheme. The Project Site is accessed via Spring Hill Road, with entry point 5 crossing over the VPO2, as shown on **Figure 5.2.** 0.063 ha of native vegetation is proposed to be impacted at this site entry point within the VPO2, and therefore a permit is required for vegetation removal within the VPO2 under Clause 42.02 of the Corangamite Planning Scheme.

Clause	Planning Scheme	Implications for the Project
Clause 42.02 (Vegetation Protection Overlay – Schedule 2 (Bushland reserves and roadside vegetation areas)) (**VPO2**)	Golden Plains	Parts of Rokewood-Skipton Road, Rankin Road, Pittong-Lismore Road and Willowvale Road are located within the VPO2 and therefore are subject to sections of VPO2 under the Golden Plains Planning Scheme, as shown in **Figure 5.2**. Specifically, the Project intersects the VPO2 in the following locations: • The section of underground transmission line along Willowvale Road from south of Lismore-Pittong Road to Crambs Road • A section of underground transmission line and underground electrical reticulation crossing Rankin Road south of the BESS facility and north of Parker Road • A section of underground electrical reticulation crossing Rokewood-Skipton Road and works associated with the site access point off Rokewood-Skipton Road Pursuant to Clause 42.02-2 (Permit requirement), a permit is required to remove, destroy, or lop any vegetation specified in a schedule to this overlay. As no vegetation is specified in Section 3.0 (Permit requirement) of Schedule 2 to the VPO under the Golden Plains Planning Scheme, it is understood that there is technically no planning permit required to remove, destroy, or lop any vegetation within the VPO2. However, it is noted that the vegetation protection objectives stated in Part 2.0 (Vegetation protection objectives to be protected) of Schedule 2 of the VPO is to 'protect significant remnant vegetation species'. As such, it has been assumed that a permit may be required for impacts to native vegetation, as defined in the native vegetation guidelines. Native vegetation mapped along Willowvale Road between Lismore-Pittong Road and Crambs Road and within the VPO2 will be impacted for the installation of the underground electrical reticulation, as well as a small section of native vegetation at the intersection of Lismore-Pittong Road and Rokewood-Skipton Road within the VPO2.
Clause 52.17 (Native Vegetation)	Corangamite and Golden Plains	In accordance with Clause 52.17-1 (Permit requirement) of the Planning Schemes, a planning permit is required to remove, destroy or lop native vegetation (including dead native vegetation). Two planning permit applications have been prepared to seek approval (and of relevance to this environment report) for the removal of 1.64 ha of native vegetation for Project construction works. Of the 1.64 ha of proposed native vegetation removal: • 0.219 ha of native vegetation, including one large, scattered tree will be removed within Corangamite LGA • 1.421 ha of native vegetation patches will be removed within Golden Plains LGA.

Clause	Planning Scheme	Implications for the Project
		Refer to **Section 8.6.1** for additional information regarding the native vegetation proposed for removal under the Planning Schemes and the P&E Act. Clause 52.17-5 (Offset requirements) outlines the offset requirements if a permit is required to remove, destroy, or lop native vegetation. The offset requirement for native vegetation removal for the Project is 0.704 General Habitat Units overall. This consists of 0.073 General Habitat Units with a minimum strategic biodiversity value of 0.395 under the Corangamite Shire, and 0.631 General Habitat Units with a minimum strategic biodiversity value of 0.286 under the Golden Plains Shire. Refer to **Section 8.6.1** for additional information regarding the offset requirements.

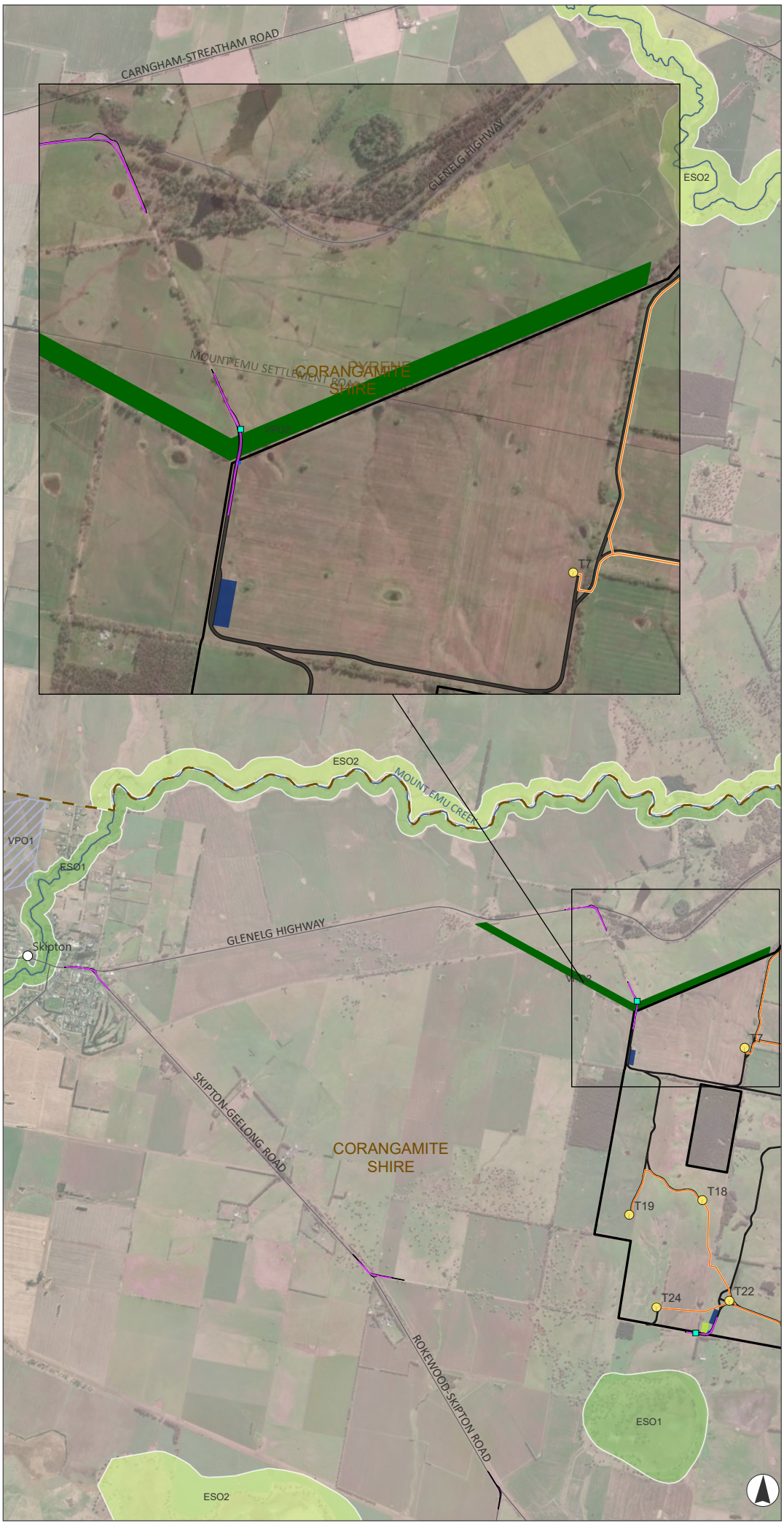


FIGURE 5.2a

Environmental planning overlays

Legend

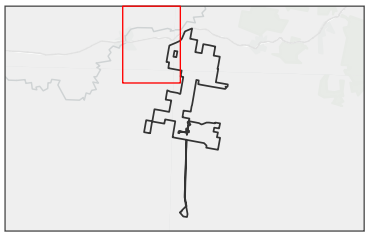
- Project Site
- Local Government Area
- Roads
- Major Watercourse
- Tyre Impact Envelope - Swept Path
- Blade Sweep Envelope

Project Infrastructure

- Site Entry Point
- Turbine
- Watertank
- Underground Electrical Reticulation
- Temporary Concrete Batch Plant
- Laydown Area
- Access Tracks
- Underground Electrical Reticulation Footprint
- Township

Planning Overlays

- ESO1 – Environmental Significance Overlay – Schedule 1
- ESO2 – Environmental Significance Overlay – Schedule 2
- VPO1 – Vegetation Protection Overlay - Schedule 1
- VPO2 – Vegetation Protection Overlay - Schedule 2



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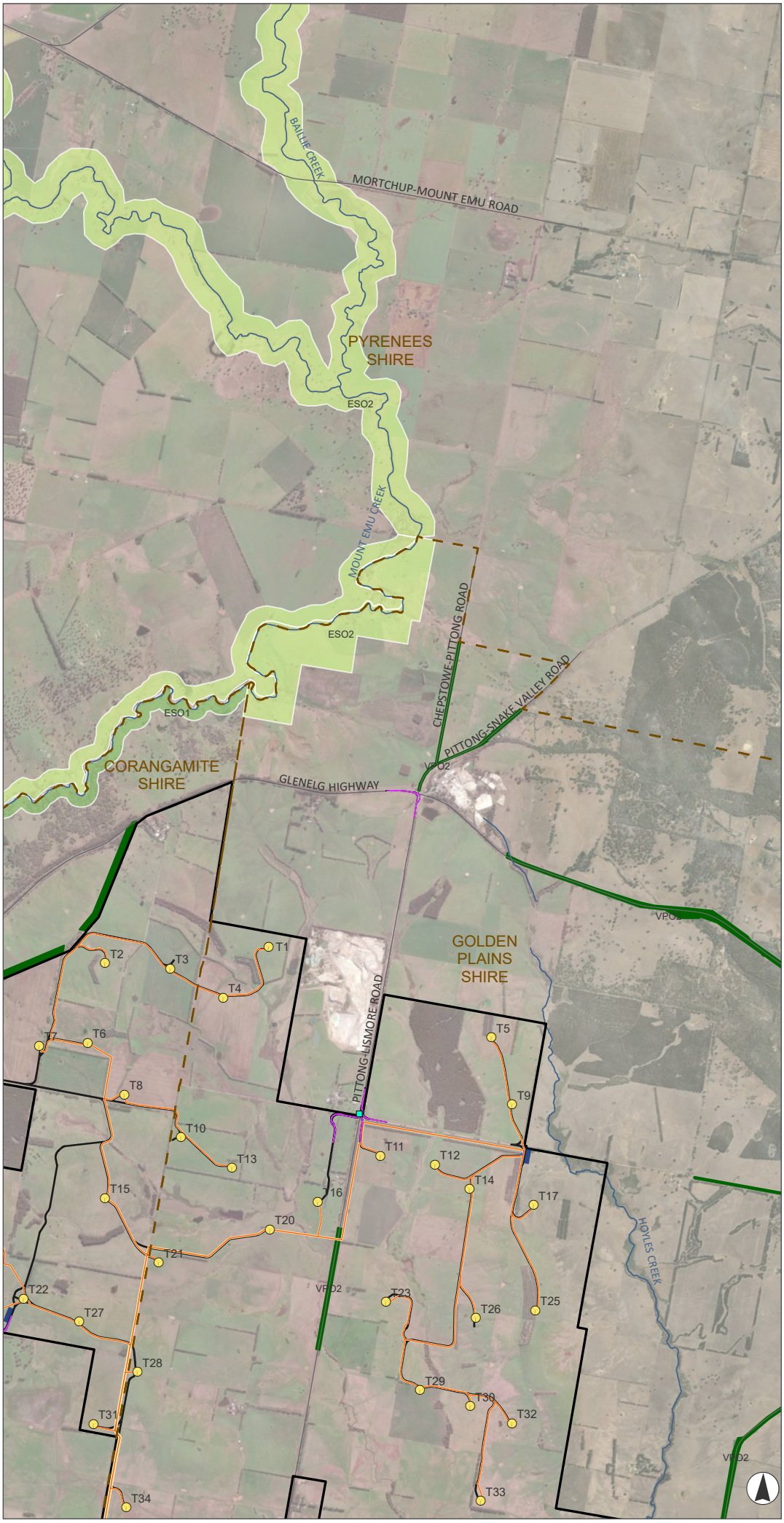

FIGURE 5.2b

Environmental planning overlays

Legend

- Project Site
- Local Government Area
- Roads
- Major Watercourse
- Blade Sweep Envelope
- Tyre Impact Envelope - Swept Path

Project Infrastructure

- Site Entry Point
- Turbine
- Watertank
- Underground Electrical Reticulation
- Temporary Concrete Batch Plant
- Laydown Area
- Access Tracks
- Underground Electrical Reticulation Footprint

Planning Overlays

- ESO1 – Environmental Significance Overlay – Schedule 1
- ESO2 – Environmental Significance Overlay – Schedule 2
- VPO2 – Vegetation Protection Overlay - Schedule 2

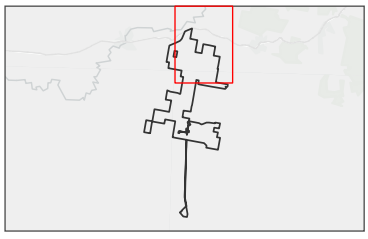

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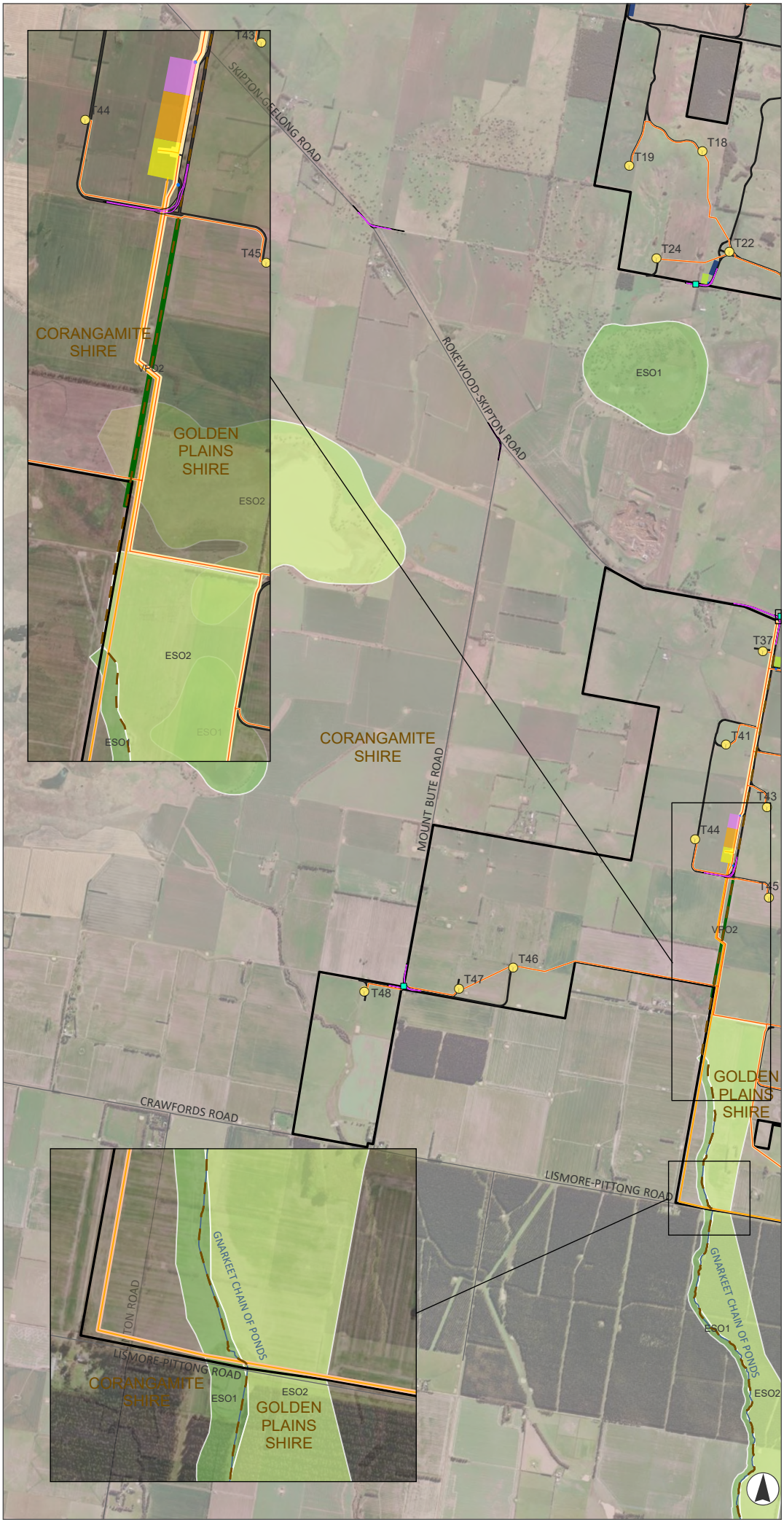
FIGURE 5.2c

Environmental planning overlays



Legend

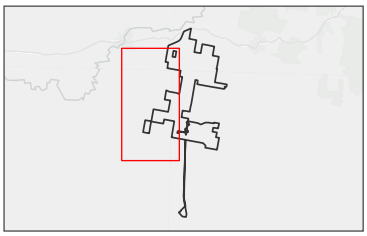
- Project Site
- Local Government Area
- Roads
- Major Watercourse
- Blade Sweep Envelope
- Tyre Impact Envelope - Swept Path

Project Infrastructure

- Site Entry Point
- Turbine
- Watertank
- Transmission Line
- Underground Electrical Reticulation
- Current Onsite Substation Location
- Current O&M Facility Location
- Current BESS Location
- Temporary Concrete Batch Plant
- Laydown Area
- Access Tracks
- Underground Transmission Line Footprint
- Underground Electrical Reticulation Footprint

Planning Overlays

- ESO1 – Environmental Significance Overlay – Schedule 1
- ESO2 – Environmental Significance Overlay – Schedule 2
- VPO2 – Vegetation Protection Overlay - Schedule 2



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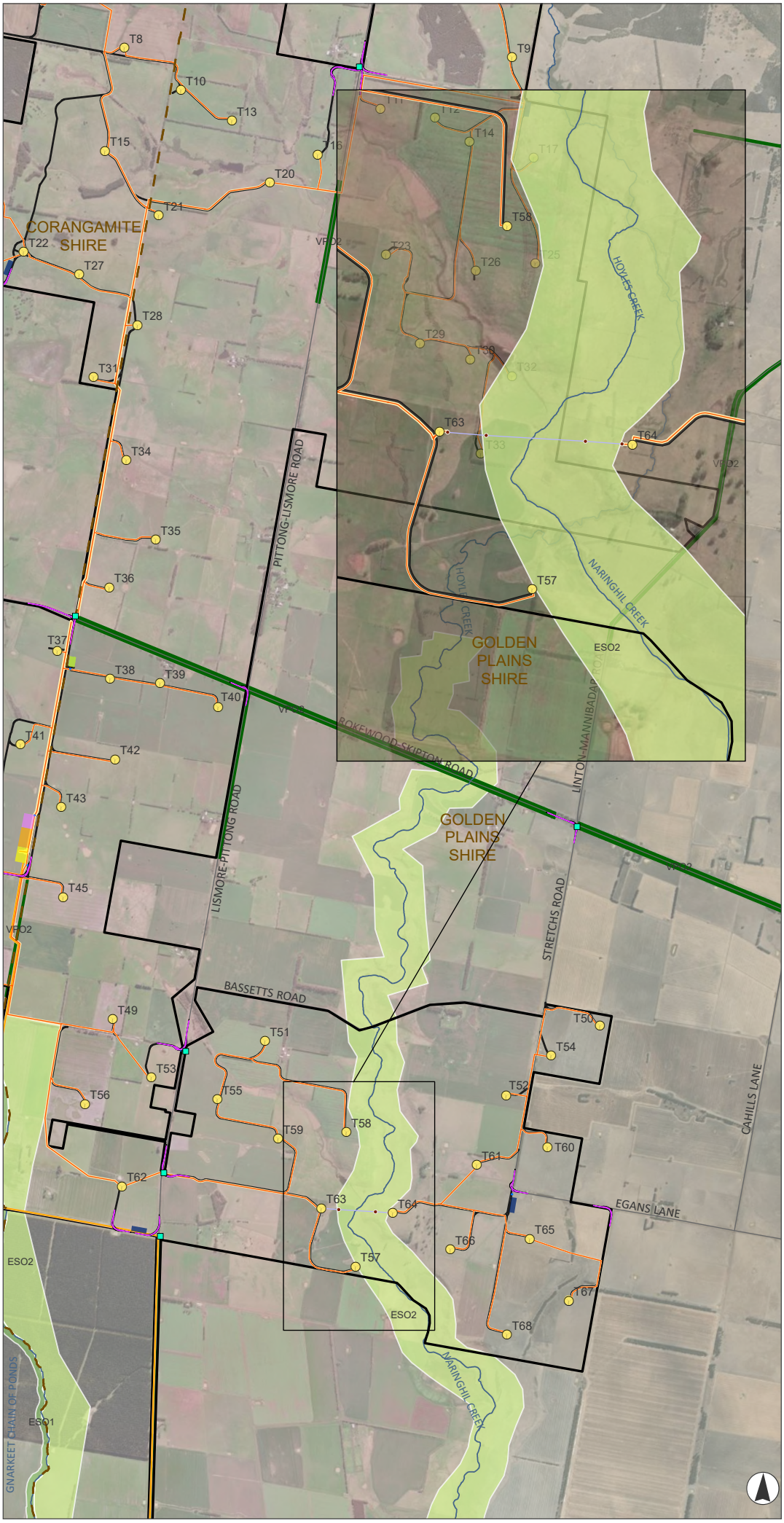


FIGURE 5.2d

Environmental planning overlays

Legend

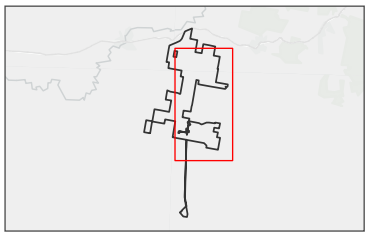
- Project Site
- Local Government Area
- Roads
- Major Watercourse
- Blade Sweep Envelope
- Tyre Impact Envelope - Swept Path

Project Infrastructure

- Site Entry Point
- Turbine
- Watertank
- Transmission Line
- Underground Electrical Reticulation
- Electrical Pole
- Overhead Electrical Reticulation
- Current Onsite Substation Location
- Current O&M Facility Location
- Current BESS Location
- Temporary Concrete Batch Plant
- Laydown Area
- Access Tracks
- Underground Electrical Reticulation Footprint
- Underground Transmission Line Footprint

Planning Overlays

- ESO1 – Environmental Significance Overlay – Schedule 1
- ESO2 – Environmental Significance Overlay – Schedule 2
- VPO2 – Vegetation Protection Overlay - Schedule 2



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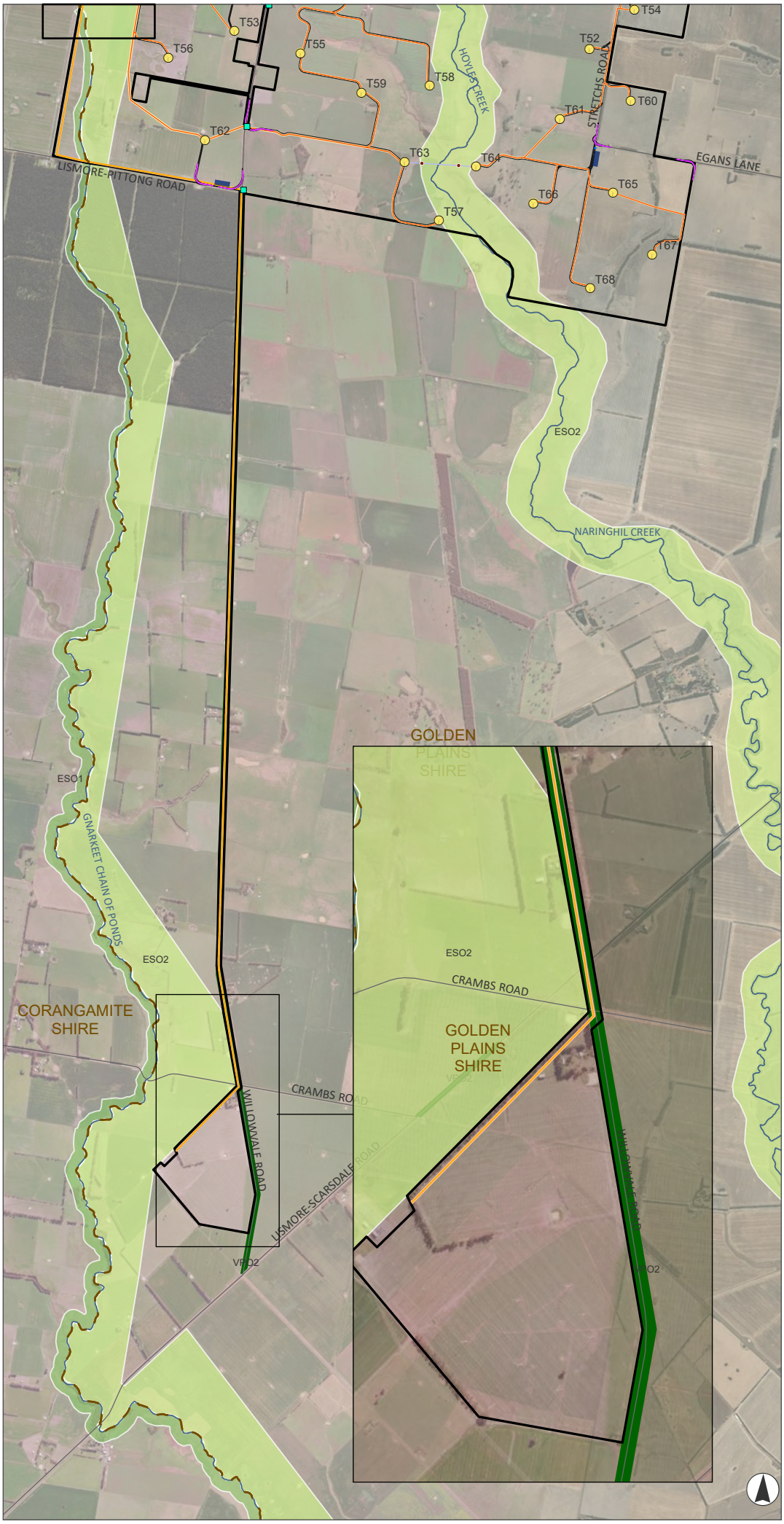

FIGURE 5.2e

Environmental planning overlays

Legend

- Project Site
- Local Government Area
- Roads
- Major Watercourse
- Blade Sweep Envelope
- Tyre Impact Envelope - Swept Path

Project Infrastructure

- Site Entry Point
- Turbine
- Watertank
- Transmission Line
- Underground Electrical Reticulation
- Electrical Pole
- Overhead Electrical Reticulation
- Laydown Area
- Access Tracks
- Underground Electrical Reticulation Footprint
- Underground Transmission Line Footprint

Planning Overlays

- ESO1 – Environmental Significance Overlay – Schedule 1
- ESO2 – Environmental Significance Overlay – Schedule 2
- VPO2 – Vegetation Protection Overlay - Schedule 2

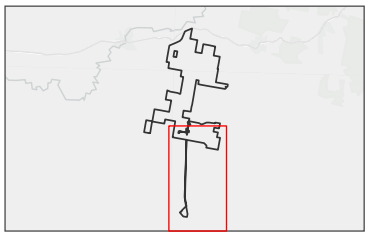

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Image Source: ESRI Basemap (2026) | **Data Source:** DEECA (2025), Squadron Energy (2026)

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6.0 Consultation and Engagement

6.1 Overview

Community and stakeholder consultation for the Project has been ongoing since October 2023 in accordance with the Proponent's Stakeholder Engagement Plan (**SEP**).

Stakeholders vary and can include host and neighbouring landowners, Traditional Owners, local communities, community interest groups, government representatives, industry groups and media. The Proponent's approach is multi-faceted, to ensure comprehensive engagement across all groups. Landowners and hosts will mostly be engaging directly with the Proponent's project team, who are those closest to the detail, involved in developing the project design and delivery. Broader stakeholder groups may also be engaged by technical or engagement specialists, including First Nations engagement, bushfire and water specialists to the CFA and CMA and government relations.

6.2 Stakeholder Engagement Approach

The Proponent's approach to stakeholder engagement prioritises building trusting relationships between the people on the ground who are involved in the Project on a day-to-day basis, and the stakeholders that are part of, and connected to, their local community and region. The overall approach to consultation for the Project is proactive and genuine, aiming to build trust in the community by being transparent, flexible and responsive.

The Proponent begins the engagement process by undertaking robust stakeholder mapping and analysis to understand the needs of the community and to build relationships from project inception. This allows them to work collaboratively with communities and stakeholders to identify impacts, mitigate these, and also identify mutually beneficial legacy opportunities in areas where their projects are located.

6.2.1 Stakeholder Engagement Objectives

The Proponent is committed to undertaking genuine and meaningful community and stakeholder engagement and consultation for the Project. Success is critical to earning and maintaining social licence within the community. The communication and engagement objectives for the Project are to:

- Seek feedback from the local community regarding the Project and integrate this feedback into the Project planning and design as far as possible.
- Keep the community informed about the Project, its likely impacts, and likely benefits, through the provision of early, accurate and timely information.
- Understand the potential social impact of the Project to inform and implement mitigation measures.
- Provide multiple opportunities and mechanisms for meaningful engagement with all stakeholders.
- Ensure that the team developing the Project fully understands the local context, including any local impacts that it may have or opportunities that it could provide.
- Enable a smooth transition from the development to delivery and operational phases, maintaining community links and information.

The core company values underpinning the Proponent's stakeholder engagement are illustrated in **Figure 6.1.**

Figure 6.1 The Proponent's Company Values

In addition to incorporating the company values in engagement with the community, the Proponent is committed applying the four best practice principles outlined in the Clean Energy Council Community Engagement Guidelines (CEC, 2018) - **openness, inclusiveness, responsiveness**, and **accountability**. Further details can be found in the Proponent's Clean Energy Council Best Practice Charter Report.

6.3 Stakeholder Groups

As part of the preparation of the SEP, the Proponent undertook stakeholder mapping and analysis to identify key stakeholder groups for consultation. These identified stakeholders are detailed in **Table 6.1**. To address the different needs of the community and key stakeholders, a stakeholder analysis was also carried out to determine the level of engagement required for each stakeholder group, as identified in **Table 6.1**. The level of engagement is based on the IAP2 Public Participation Spectrum, a generally accepted framework for guiding engagement activities.

Table 6.1 Identified Stakeholders

Stakeholder group	Stakeholders	Level of engagement (IAP2)
Traditional Owners	Wadawurrung Traditional Owners Aboriginal Corporation and First Nations peoples in Wadawurrung Country.	Involve
Host landholders	28 landholders hosting WTGs and/or Project infrastructure	Collaborate
Neighbouring landholders	Up to 86 neighbouring properties within 4 km of proposed WTG locations	Collaborate
Broader community	Residents of Skipton, Linton, and other neighbouring townships	Consult
Local council	• Corangamite Shire • Golden Plains Shire • Pyrenees Shire	Consult
Government – State	• DTP • DEECA • Corangamite Catchment Management Authority • CFA • Environment Protection Authority (EPA) • VicRoads • Air Ambulance Victoria (AAV)	Consult
Government – Federal	• DCCEEW • Airservices Australia • Bureau of Meteorology (BoM) • Civil Aviation Safety Authority (CASA) • Department of Defence • Australian Energy Market Operator (AEMO) • Wind Farm Commissioner	Consult
Council - Elected representatives	• Corangamite Shire – Mayor Cr Kate Makin • Golden Plains Shire – Mayor Cr Owen Sharkey Hayden • Pyrenees Shire – Mayor Cr Tanya Kehoe	Consult
State Government – Elected representatives	• Victorian Minister for Planning (Sonya Kilkenny) • Victorian Minister for Climate Action and Energy and Resources (The Hon Lily D'Ambrosio) • Victorian Minister for Regional Development (Jaclyn Symes) • Member for Ripon (Ms Martha Haylett) • Member for Polwarth (Mr Richard Riordan) • Member for Eureka – Ms Michaela Settle	Consult

Stakeholder group	Stakeholders	Level of engagement (IAP2)
Federal Government – Elected representatives	• Federal Member for Wannon, Shadow Minister for Energy and Emissions Reduction (Dan Tehan) • Commonwealth Minister for Environment and Water (The Hon Murray Watt) • Commonwealth Minister for Climate Change and Energy (The Hon Chris Bowen MP) • Member for Ballarat (The Hon Catherine King, MP)	
Community interest groups and community services	• Skipton and Linton Men's Sheds • Skipton Probus • Skipton Cricket Club • Skipton Football and Netball Club • Skipton Tennis Club • Skipton Golf Club • Skipton Lions Club • Skipton District Historical Society • Linton & District Bowling Club • Linton Cricket Club • Linton District Men's Shed • Linton District Progress Association • Carngham Linton Football Netball Club • Skipton Progress Association • Berrybank and District Community Group • Mannibadar Hall	Consult
`Schools	• Skipton Primary School • Linton Primary School	Consult
Industry and local business	Local employers, service providers, quarries, and health services including: • Beaufort and Skipton Health Service • SUVO Mining • Eldridge Quarry • AusNet	Consult

Other stakeholders	• Local media, including:
	  ○ Skipton Community Newsletter
	  ○ Ballarat Courier
	  ○ Golden Plains Times
	  ○ Camperdown Chronicle
	  ○ Pyrenees Advocate
	  ○ Linton News
		Inform

6.4 Stakeholder Engagement Methods

IAP2 Australasia's Community Engagement model outlines that the methods used for engagement will vary based on the sector, purpose of the engagement and expectation of stakeholders. It is important to select the right method of engagement to successfully design, deliver and evaluate genuine stakeholder engagement, noting that more than one method is likely to be required.

The Proponent has used, and will continue to use, the following tools to engage with stakeholders throughout all stages of the Project lifecycle:

- Letters, newsletters and factsheets
- Face-to-face meetings
- Group meetings
- Phone calls
- Emails, including email blasts and targeted emails
- Project newsletters
- Landowner letters
- Doorknocking
- Advertising in local newspapers
- Drop-in community information sessions
- Community workshops and community group meetings
- Surveys (online and paper form)
- Dedicated Project email address, website and phone number
- Attend fairs and festivals and community events
- Social media posts
- Tours of operational Squadron Energy wind farms.

6.5 Overview of Engagement to Date

The Proponent has engaged with a broad range of stakeholders using a variety of mechanisms throughout the design and planning stages of the Project. **Table 6.2** provides an overview of the stakeholder engagement activities undertaken for the Project to date. This includes all engagement undertaken between October 2023 and February 2026.

Table 6.2 Community and Stakeholder Engagement Activity to Date (October 2023 to end of February 2026)

Method	Total / quantity / recurrence	Stakeholder groups	Timing
Phone calls and text messages* (including voicemail and text)	~ 80	Host landowners, neighbours, broader community Primarily arranging landowner meetings and access to host landowner's property for environmental assessments	Ongoing, since October 2023
Face-to-face meetings	~ 180	Host landowners, neighbours. 25 neighbours met with in July and August 2025 alone.	Ongoing, since October 2023
Meetings with Traditional Owners	~ 15	Traditional Owners (WTOAC). Plus regular communication between meetings.	Ongoing, since 14 March 2023
Emails	~ 580	All stakeholder groups	Ongoing, since October 2023
Letters (letterbox drop and direct mail)	~ 900	At the launch of the project a letter drop was conducted to every neighbour withing 4 km of the project (86), providing information on the project and a request to meet to discuss the project.	Ongoing, since October 2023
Community newsletters	6	All stakeholder groups 3 x Community newsletters have been dropped in Linton and Skipton Post office Boxes to date (300 each time). There are 160+ email addresses on the email database for community newsletters.	October 2023, April 2024, February 2025 and August 2025, December 2025, March 2026
Project stakeholder engagement plan	1 (external updated annually and as project details change)	All stakeholder groups	Ongoing
Community sponsorship application	24 applications 16 Supported ($70,000)	Host landowners, neighbours and broader community	Ongoing

Method	Total / quantity / recurrence	Stakeholder groups	Timing
Project website **https://www.squadronenergy.com/our-projects/moreton-hill-wind-farm**	1	All	Ongoing since October 2023
Drop-in community information sessions	2 – held in Skipton and Linton	All – neutral to positive sentiment with approximately 50 community members attending	April 2024
Group meetings	2 – with one planned for April 2026	Host landowners	Since September 2023
Briefings	8	Federal MP, State MP, Councils	Since October 2023
Advertising in local media	Weekly since September 2024	Skipton and Linton News	Ongoing
Video display in local cafés	Displayed in cafes in Linton and Skipton	Broader community	Since December 2024
Community sentiment survey	1	Broader community	2024
Community Benefit Workshop/s	2	Broader community	1 completed in March 2026 1 to be scheduled

6.6 Consultation Outcomes

Engagement conducted to date identified key interests, concerns and feedback for Project stakeholders. An overview of these outcomes is summarised in **Table 6.3.**

Table 6.3 Themes Raised by Stakeholder Groups During Consultation

Stakeholder group	Interests, concerns and feedback received
Host landowners	• Decommissioning • Neighbour benefits • Community benefits • Project design • Project schedule • Original location of BESS, substation and working compound
Neighbours within 4km of a turbine	• Visual • Noise • Traffic and access points to Project Site • Neighbour benefits • Project schedule
Corangamite Shire Council	• Management of community investment program • Project design • Approvals process • No negative community sentiment raised with Council • Project schedule • Landowner/farmer financial security • Benefits from the Payment in Lieu of Rates (**PiLoR**) • Bushfire Recovery Planning
Golden Plains Shire Council	• Management and visibility of community investment program • Community benefit realisation • Project design • Approvals process • Community sentiment – generally wind farms are well accepted and understood • Project schedule • Safety related to fire or WTG failure/collapse • Road closures / diversions during construction • Landowner/farmer financial security • Benefits from the PiLoR

Stakeholder group	Interests, concerns and feedback received
Hon Dan Tehan MP, Member for Wannon	• Engaging in the 'right way' • Learning lessons from Ballyrogan Wind Farm • Likes the community investment program
Ms Martha Haylett – Member for Ripon	• Likes local shop front idea • Positive feedback on community investment program • Has not received any enquiries to her office about the Project
Wadawurrung Traditional Owners Group	• Concerns around other proponent engagement • Interested in innovative investment options • Requested Cultural Values Assessment – underway
Members of the broader community	• Biodiversity, specifically Brolga protection and avoidance • Visual • Property values • Land use and access • Noise • Physical and mental health • Community sponsorship • Traffic and access • Renewable energy benefits • Agreement negotiations • Community investment fund • Stakeholder engagement approach • Project layout/design

6.6.1 Community Sentiment Survey

A community survey (with 76 responses) was conducted by Squadron Energy in 2024, to collect further data on community sentiment of the Project.

Overall, community sentiment showed that a majority of consultation participants have a neutral position on the Project (53%), followed by people with a positive position (25%) (see **Figure 6.2**). Community members with a negative position were less common yet comprised a substantial proportion of engaged stakeholders (17%).

Community sponsorship was the most significant subject raised through the survey, followed by traffic and access (see **Figure 6.3**). Property value was also a concern, followed by further stakeholder engagement.

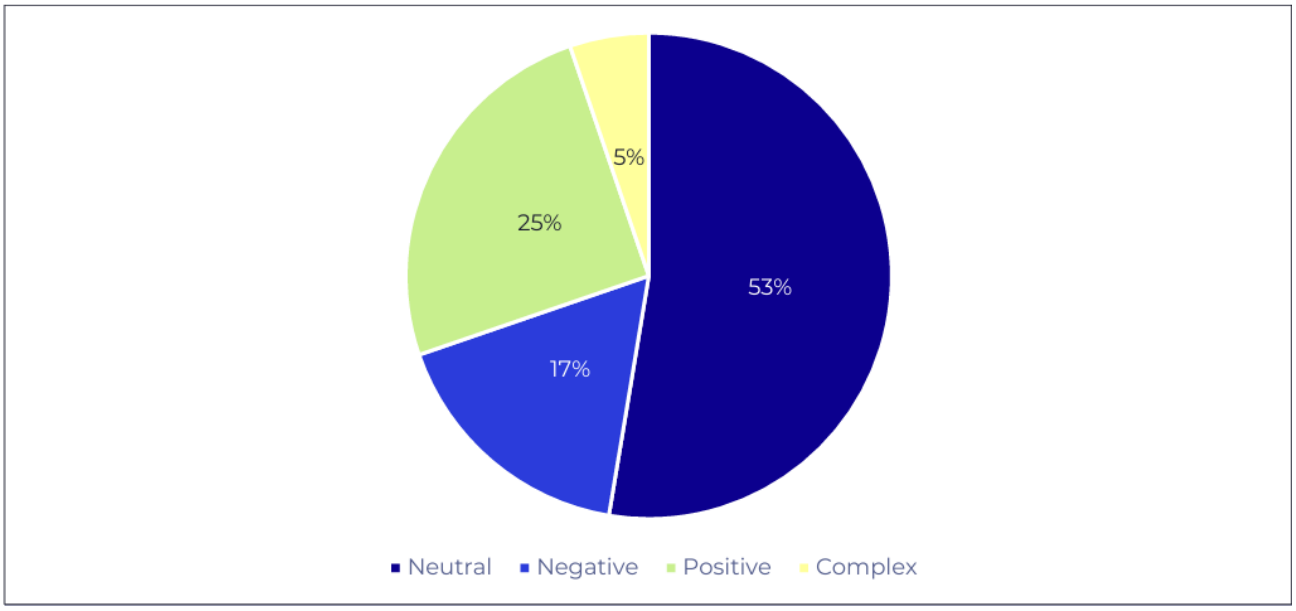

Figure 6.2 Community Sentiment from the Community Survey Conducted in 2024 (76 responses) (Squadron Energy, 2025)

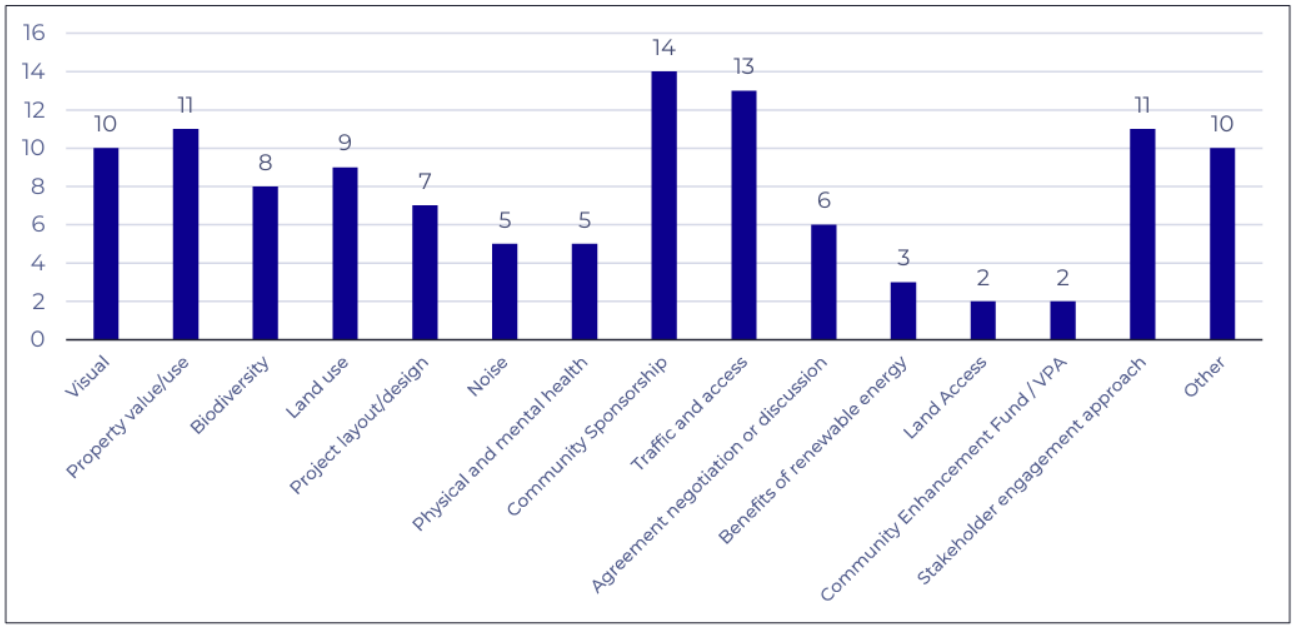

Figure 6.3 Key Issues Raised by Participants in the Community Survey Conducted in 2024 (76 responses) (Squadron Energy, 2025)

6.6.2 Targeted Stakeholder Interviews

A small number of targeted stakeholder interviews were undertaken by Ethos Urban in 2025 to inform the Social and Economic Impact Assessment (**SEIA**) (see **Appendix B**). A range of stakeholders were interviewed to understand community sentiment and key issues relating to the Project.

The following five key stakeholders participated in 30-45-minute interviews (in person and via phone):

- Corangamite Shire CEO (in person)

- Golden Plain Shire Coordinator of Economic Development (online meeting)
- Skipton community representative (phone call)
- Two participating landholders (one via phone, one in person).

6.6.2.1 Golden Plains Shire interview outcomes

Golden Plains Shire maintain a formal neutral position on wind farm developments. They recognise community concerns and emphasise effective consultation as key to creating project understanding and building social license. Outcomes of the interview and the Golden Plains Shire perspective on socio-economic impacts from the Project are detailed in **Table 6.4.**

Table 6.4 Golden Plains Shire Interview Outcomes

Theme	Consultation outcomes
Role of council and position	• Council works to educate the local community on the planning process of wind farms, directing information requests or submissions to relevant state authorities. • Council's position is to remain neutral on wind farm development, acting as a facilitator of state government-led initiatives. • Community members often approach Council when concerned about wind farm development. Council provides up-to-date and accurate information to address potential concerns when based on misinformation. Residents are encouraged to consider the long term benefits of wind farm developments and how they help contribute to Council's provision of services. • Council has been effective at articulating how wind farm benefits have been spread across the community by highlighting social infrastructure funded by wind farm community funds and PiLoR (e.g., Berry Bank Wind Farm, Golden Plain Wind Farm)
Community issues	• Community concern in relation to wind farm development is common. However, consultation with Council often works to improve community understanding of wind farm projects. • A loss of community cohesion has not been a strong feature of wind farm development in the LGA. This is due to a relatively strong community understanding of wind energy development and experience of hosting wind turbines for over 15 years. • Community members sometimes feel left out if benefits are not visible in their immediate area. • Occasional road closures caused by wind farm construction and maintenance across the LGA. Golden Plains Wind Farm semi-regularly requires the closing of roads for maintenance work, causing delays or diversions.
Safety	• Recent attention has been brought to the importance of WTG exclusion zones and safety protocols after recent incidents (Feb 2025) wherein a WTG collapsed in Berrybank Wind Farm.
Financial and community benefits	• Wind farm developments significantly contribute to Council through PiLoR contributions. This has been critical in Golden Plains in the context of Council Rates caps, which would have made upkeeping current levels of service or providing community improvement impressive without additional rates from wind farms.

Theme	Consultation outcomes
	• Wind farm projects often provide initial upgrades to community facilities to be seen as contributors to the community. This direct investment has benefited Council and the local community. • The Berrybank Wind Farm community benefits program directly involves Council. This is highly beneficial as Council has an intimate knowledge of community needs and can most effectively allocate funds. • Council recognises the benefit to farmers by providing long-term stable income, assisting during variable years and contributing to financial security during retirement. • Wind farms have often supported local events like Twilight Markets and small-town festivals. This has helped support regional tourism.
Workforce and accommodation	• Council's experience with Golden Plain and Berrybank wind farms has been that most wind farm workers commute to the Project Area from Geelong or Ballarat. Very few workers stay in smaller towns such as Linton, Smythesdale, Skipton as there is very little on offer to workers in terms of services and entertainment, and there is very little visitor accommodation. • Benefits to smaller towns associated with hosting non-local workers is low, with the exception of lunchtime spending in general stores
Education and training	• Council support education links and advocates for building local skills through apprenticeships and school engagement

6.6.2.2 Corangamite Shire interview outcomes

Corangamite Shire also maintain a formal neutral position on wind farm developments. They recognise community concerns and emphasise effective consultation as key to creating project understanding and building social license. Outcomes of the interview and the Corangamite Shire perspective on socio-economic impacts from the Project are detailed in **Table 6.5.**

Table 6.5 Corangamite Shire Interview Outcomes

Theme	Consultation outcomes

Role of council and position	• Council has not adopted position on wind farms
	• Council generally supports wind farms when sited in appropriate locations, including:
	  ○ North of Hamilton Highway, away from high-value landscapes and agricultural to the south of the LGA
	  ○ Wind farms will not be supported if they significantly impact agricultural land
	  ○ Council will be more likely to support wind farms if the transmission infrastructure is underground.
	• If there is community opposition to a wind farm project, Council will generally reflect the view of those who oppose the project.

Community issues	• No negative community sentiment has been brought to Council in relation to Moreton Hill Wind Farm. • Council does not see a significant risk to community cohesion associated with the Project.

Theme	Consultation outcomes
	• Historically community opposition to wind farms has occurred due to inappropriate siting in the south of the LGA (towards the Great Ocean Road area). • Investment in the community by the Proponent is key to building social licence.
Financial and community benefits	• Council sees the main benefits as Payment in Lieu of Rate (PiLoR). • Council acknowledges the benefits to landholders and inquired about the benefits to neighbouring landholders.
Workforce and accommodation	• Council anticipates that a majority of the workforce will commute from Geelong or Ballarat and therefore not place pressure on accommodation. • Council does not expect a construction workforce and accommodation strategy, as they view the project as low risk in terms of impacts on visitor accommodation.

6.6.2.3 Participating landholder interview outcomes

Two participating landholders were interviewed to discuss the Project's potential social impacts and benefits, as well as suggested mitigation measures and community sentiment. Participating landholders were generally supportive because of the significant financial incentives offered to host wind turbines. However, they also highlighted the wider community benefits, climate benefits and impacts on community cohesion. Key outcomes are summarised in **Table 6.6.**

Table 6.6 Participating Landholder Interview Outcomes

Theme	Consultation outcomes
Community profile and local challenges	• The area is described as a close-knit rural community, with a strong sense of local identity (specifically around Mannibadar and Skipton). • Ongoing concerns around generational shifts, with fewer farming families due to property amalgamations. • The Skipton area is described as deteriorating, with limited opportunities for young people. • Local infrastructure, like hospitals, is seen as key community asset.
Key local resources	• Skipton is a regional hub, with essential services like a medical centre. • For major health issues, residents travel to Ballarat.
Positive benefits	• Primary support for the wind farm is because of financial benefits. The landholder appreciates the stability of regular income, especially in retirement and supporting succession planning. • There is hope that the wind farm might stimulate local work, particularly in construction and support services. • Recognition that local businesses like quarries and trades might benefit, though employment is expected to be limited and specialised. • Landholders believe the community benefit fund will support local assets like clubs and infrastructure. • The landholder supports the idea of compensating neighbouring properties that are visually or operationally affected but do not host turbines.

Theme	Consultation outcomes
	• Perception of wind farms as important initiatives that could revitalise the local regional area.
Negative benefits	• The landholder is aware of and concerned about the social divisions wind farms can cause in tight-knit communities, citing examples from other regions. • Potential for generational divides: older family members are sceptical, while younger ones are more climate-aware and accepting. • Visually, the landholder does not mind turbines at a distance but would be uncomfortable if they were too close to the home. • Fire management concerns were raised, particularly about potential limitations for aerial firefighting around turbines. • Worries about gates being left open, affecting livestock. • Concerns about access roads and how construction will interfere with daily farm operations.
Stakeholder suggested enhancement or mitigation	• More transparent and timely communication about neighbour compensation. ○ Potential to provide free power for nearby towns. ○ Support for the local tennis club. ○ Bureaucracy and delays are frustrating and hope the project moves forward quickly.

6.6.2.4 Community representative interview outcomes

The Skipton community group representative provided key insights into local social resources, community perceptions of wind farms, and potential community benefits associated with the Project in Skipton and the surrounding area. Key outcomes are summarised below in **Table 6.7.**

Table 6.7 Community Representative Interview Outcomes

Theme	Consultation outcomes
Community profile and local challenges	• A key concern is the outward-bound migration of younger people, largely due to limited job opportunities in the area. • Most local employment is tied to agriculture and related services, which do not appeal to many younger, technology-oriented job seekers. • An unreliable power supply is a significant issue for residents of Skipton and the surrounding area, often cutting out during storms or heavy rain.
Key local resources	• Despite being small, Skipton is relatively well-resourced with a hospital, primary school, kindergarten, pool, and emergency services. • The hospital is historically significant and has been strongly supported by the State Government.
Perceptions of wind farms	• The community has previous experience with wind farms (e.g., Berrybank and Stockyard Hill) and is largely accepting of them. • There is a vocal minority opposing wind farms; however, these concerns are not widely supported in the broader community. • Opposition groups are sometimes linked to wider anti-wind movements (e.g. Landscape Guardians) but are not influential.

Theme	Consultation outcomes
	• Initial resistance to wind farms has mostly faded as predicted negative impacts did not materialise. • The stakeholder highlights the inevitability of change and the community's ability to adapt positively. • A sense of pragmatism and forward-thinking is evident, recognising that while the town will not remain the same, it can evolve beneficially.
Community benefits	• Tangible benefits have already been seen, such as buses for the local football club and hospital, funded by wind farm contributions.
Workforce and accommodation	• During previous wind farm project construction periods, temporary workers during construction had little negative impact, largely commuting from Ballarat or staying quietly in town. • Some works were even integrated into community life (e.g., attending local sports clubs), which was seen positively.

6.6.3 Community Benefits Workshop

A community benefits workshops was held in late March 2026, in the township of Linton. The aim of the workshop was to gather feedback from the local community to inform the design of the Proponent's community benefits program for the Project.

The workshop brought together local community members to begin a conversation about community benefits, including identifying priorities for investment and exploring how funding could be allocated and governed. This provided an opportunity to identify a broad range of perspectives and ideas to start informing the program.

Participants raised a wide range of ideas for possible investment. While some common themes emerged, the diversity in priorities reflected different local experiences, needs and expectations. The following common themes were raised (noting these don't represent unanimous views):

- Strengthening local infrastructure
- Investing in community facilities and spaces
- Supporting community wellbeing and connection
- Building local economic resilience
- Environmental stewardship and resilience.

Participants also expressed a wide range of views on how funding should be structured and governed. While some common principles emerged, different preferences also emerged from spreading funding across multiple smaller initiatives to concentrating on fewer larger projects. Possible ways of structuring fundings, as well as timing, were also discussed with varied feedback provided. Preferences for governance also varied, with some participants suggesting minimal government / council involvement, with others suggesting formal oversight by an appropriate entity.

Overall, the workshop provided a useful starting point for shaping the Moreton Hill Wind Farm community benefits program. It revealed a broad range of ideas and perspectives on both what could be funded and how funding could be managed. Findings of this workshop will inform the next stage, which involved further engagement and opportunities for community input as the program takes shape.

6.6.4 Project Design Changes in Response to Consultation

Feedback and outcomes of consultation undertaken to date have been integrated into the Project design. A summary of the key design changes that have resulted from consultation outcomes is detailed in **Table 6.8.**

Table 6.8 Summary of Key Project Design Changes in Response to Consultation

Timeframe	Summary of key design changes
2020–2023 - From project inception to submission of referrals	Since project inception in 2020, several design changes were made in response to stakeholder feedback. This included: • Ongoing design revisions based on host landowner feedback from 2020–2022. This allowed host landholders to have direct input on the location and design of infrastructure on their property. • The Project size and footprint was expanded based on available grid connection solutions from 2020 - to late 2022. This was based on consultation with AusNet. • The transmission line proposed to connect the project into the grid, was revised from an overhead line to an underground line in response to neighbour and local government (Golden Plains) feedback to avoid visual impacts. This design change occurred in 2023. • Relocating the BESS, onsite substation, and the O&M facility north of Henderson Road as a result of community feedback in 2023.
2023–2025 From submission of referrals to submission of the environment report and planning permit application	Following submission of referrals under the EPBC Act and EE Act, several design changes were made in response to stakeholder feedback. This included: • Ongoing minor adjustments to the Project layout from ongoing host landowner feedback. Including revisions to access tracks and underground reticulation. • Addition of new host landowners after expression of interest during neighbour consultation. This resulted in additional land being added to the Project Site in the south-east. • Engagement with neighbours led to further detailed investigation of Brolga usage of Lake Widderin. Subsequent detailed flocking assessment led to the implementation of significant buffering and layout alteration.

6.7 Community Investment to Date

The Project has launched its community sponsorship program donating so far to groups outlined in **Table 6.9.** Since 2023, $95,000 in funding has been provided to local community groups and initiatives.

Table 6.9 Community Investment to Date

Month/Year	Club/Group	Description
April 2023	Skipton Football Netball Club	Support of a night game and naming rights on scoreboard
October 2023	Linton Bowls Club	Supply new shirts for all players with Squadron Energy logo
December 2023	Mannibadar Hall	Purchase defibrillator
February 2024	Skipton PS	Contribution to new netball courts

Month/Year	Club/Group	Description
May 2024	Lismore Landcare	Contribution to new works
September 2024	Skipton Football Netball Club	Support the installation of heaters at the netball courts
September 2024	Skipton Progress Association	Support the Skipton Spring Festival
October 2024	Skipton Golf Club	Support an event
October 2024	Skipton Football Netball Club	Support an independent Paint & Sip Night
November 2024	Skipton Bowls Club	Triple bowls event
April 2025	Skipton Golf Club	Sponsoring the installation of disabled toilets
March 2025	Skipton Football Netball Club	New scoreboard
July 2025	Skipton Primary School	Sponsor accessible equipment
July 2025	Friends of the RSL	Upgrades to Veterans graves and Remembrance Walk
August 2025	Linton Cricket Club	Sponsor the senior and junior boys and girls cricket sides in the GCA for the 2025/2026 season
August 2025	Skipton Progress Association	Support for the Skipton Spring Festival
January 2026	Skipton Progress Association	Support for BlazeAid for immediate 2026 bushfire recovery efforts
February 2026	Skipton Progress Association	Funding to purchase a hydraulic post driver to support post 2026 bushfire recovery fence installation with BlazeAid

6.8 Ongoing Engagement

Leading up to and following lodgement of the environment report, the project team will continue to carry out the following stakeholder engagement activities:

- Ongoing weekly host landowner consultation, including a group meeting with hosts (or more as appropriate).
- Continue meeting with all neighbours to discuss potential impacts, the community benefit scheme, and offer voluntary neighbour agreements.
- Liaison with Corangamite and Golden Plains Shire Council on project timelines and benefit sharing initiatives. Meetings with Councillors to be offered as required, with a target of quarterly.
- Ongoing engagement with Federal MP Dan Tehan (Shadow Minister for Energy and Emissions Reduction) and Federal MP the Hon Catherine King.
- Regular meetings with State MP Martha Haylett.
- Set up briefings with State MPs (Richard Riordan and Michaela Settle)
- Continue to meet with representatives from WTOAC to discuss CHMP progress and potential benefit sharing opportunities.
- Project newsletters, at least quarterly or after major project milestones.

- Broader community engagement through project team presence attendance at community events.
- Maintaining and updating the project-specific contact details and the Stakeholder Engagement Plan.
- Community Benefit Workshops, to be coordinated with Council and local stakeholders.
- Notice of the environment report and planning permit applications when on public notice through newspaper advertisements and notification to the community and key stakeholders by the Proponent.

6.9 Enquiry and Complaints

The Moreton Hill Wind Farm team is committed to providing reliable and consistent opportunities for the community to make enquiries and/or complaints about the project. Throughout the project lifecycle, stakeholders and members of the community can contact the Proponent via the project specific email address and phone number listed below.

The project team will respond to and resolve all complaints and enquiries as soon as possible. The Proponent tracks complaints, enquiries and action items.

Email: moretonhillwind@squadronenergy.com

Phone: 0483 902 842

All community complaints, interactions, phone calls, and emails, are recorded in Squadron Energy's Consultation Manager (**CM**) database. CM, in its role as the central stakeholder relationship management system, is also used to track the recording, investigation and handling of all community and stakeholder complaints and communications, including those relating to Moreton Hill Wind Farm

For complaints, the following details are recorded:

- date and time of complaint
- whether it is a corporate complaint or related to the Project
- type of communication (telephone, letter, email etc.)
- name, address, contact telephone number of contact or, if no details were provided, a note to that effect
- an allocated number to the person making complaint, which will remain with them for all their complaints, if any
- nature of the complaint and issues raised
- record of operational and meteorological conditions contributing to the comment or complaint
- the number of people affected in relation to the complaint
- actions taken in response including follow up contact
- details of whether resolution was reached
- any monitoring to confirm that the complaint was satisfactorily resolved.

The Proponent's complaints management procedure outlines how the Proponent manage any complaints. During the development phase (this current phase), complaints will be responded to within the nominated timeframes detailed in **Table 6.10.**

Table 6.10 Target Response Time for Address in Complaints from Reciept during the Development Phase

Complaint classification	Summary	Timing
Phone call or personal contact	During standard business hours Monday to Friday	Verbal response immediately (if the call can be answered) to determine the nature of the complaint. If not answered immediately, at least within two working days.
	Out of standard business hours	Verbal response within 3 working days (if possible).
Written complaint (email, text, or letter)	Any written complaint from the community or a stakeholder	Written response as soon as possible but within ten (10) working days unless otherwise agreed with the Proponent and the stakeholder.

7.0 Social and Economic

7.1 Overview

A Social and Economic Impact Assessment (**SEIA**) has been prepared by Ethos Urban (see **Appendix B**) to satisfy the requirements set out in the scoping document (see **Table 1.1**).

Social impacts vary in nature and can be positive or negative. They include all issues associated with a renewable energy project that may affect local and regional communities, both directly and indirectly. The impacts can be perceived or physical and can be felt by individuals, families, social groups, workplaces, and other segments of the community. Social impacts also include changes which occur to communities (as a result of the Project) and may relate to impacts on quality and way of life, health, safety and well-being, livelihoods or economic prospects, access to cultural resources, community services, infrastructure, and social values (DELWP, 2021).

An economic impact is a financial effect that something, especially something new such as development of a wind farm, has on a situation, person or industry. Similar to social impacts, economic impacts can be positive or negative.

7.2 Methodology

In the absence of a specific Victorian Government framework or prescribed methodology for social impact assessment, the NSW Department of Planning Housing and Infrastructure SIA Guideline (NSW DPHI, 2023) (**SIA guideline**) was used for the SIA.

The following methodology was used for the SEIA:

- Identified relevant social localities for the Project, which is the area considered to be potentially impacted by the Project.
- Established the economic study area (**ESA**) to reflect likely labour force, accommodation, and supply chain linkages available to support the Project.
- Established a social and economic baseline of the social localities and ESA through:
    - Desktop assessment to collect primary and secondary data including population, labour markets, occupational structure and business structure.
    - Targeted stakeholder engagement through interviews with five key stakeholders (see **Section 6.6.2**).
    - A site visit was undertaken to establish capacity of, and opportunities for, townships in the ESA to participate and service the Project.
- Identified and quantified potential impacts (both positive and negative) of the Project on local and regional economies.
- Identified mitigation measures to reduce negative impacts and maximise benefits for identified social and economic impacts.
- Undertook a residual impact assessment of social and economic impacts following the implementation of mitigation measures.

- The significance rating of each identified social impact is determined by assessing the likelihood (see **Table 7.1**) and magnitude (see **Table 7.2**) of each impact to determine an overall social impact significance rating (see **Table 7.3**).

- Assessed potential cumulative social impacts with nearby developments.

Table 7.1 Defining Likelihood Levels of Social Impacts

Likelihood level	Meaning
Almost certain	Definite or almost definitely expected (e.g. has happened on similar projects)
Likely	High probability
Possible	Medium probability
Unlikely	Low probability
Very unlikely	Improbable or remote probability

Table 7.2 Defining Magnitude Levels for Social Impacts

Magnitude level	Meaning
Transformational	Substantial change experienced in community wellbeing, livelihood, infrastructure, services, health, and/or heritage values. permanent displacement or addition of at least 20% of a community.
Major	Substantial deterioration/improvement to something that people value highly, either lasting for an indefinite time or affecting many people in a widespread area.
Moderate	Noticeable deterioration/ improvement to something that people value highly, either lasting for an extensive time or affecting a group of people.
Minor	Mild deterioration/ improvement, for a reasonably short time, for a small number of people who are generally adaptable and not vulnerable.
Minimal	Little noticeable change experienced by people in the locality.

Table 7.3 Social Impact Significance Matrix

Likelihood	Magnitude				
	Minimal	**Minor**	**Moderate**	**Major**	**Transformational**
Very unlikely	Low	Low	Low	Medium	Medium
Unlikely	Low	Low	Medium	Medium	High
Possible	Low	Medium	Medium	High	High
Likely	Low	Medium	High	High	Very high
Almost certain	Low	Medium	High	Very high	Very high

7.2.1 Study Areas

7.2.1.1 Social localities

The term 'social locality' is commonly used in social impact assessment (**SIA**) practice to describe an area of social impact. There is no fixed meaning or predefined geographic boundary to a social locality (e.g., the local suburb, or 'within 500 m'). Instead, the scale of the social locality is established on a case-by-case basis, having regard to the nature of the Project and its potential impacts.

Social localities have been determined for the Project based on the consideration of:

- Construction and operational activities associated with the Project.
- Likely scale and extent of potential direct and indirect impacts and benefits of the Project.
- Cumulative impacts that may affect communities because of planned major renewable energy projects both under construction and operating within the region.
- Built or natural features with potential social value near the sites, and the social characteristics of nearby areas, based on the social baseline study and other project assessments. Community and stakeholder groups that would be most likely affected by the direct and indirect impacts.

Table 7.4 outlines the social localities defined for the Project (see **Figure 7.1** and **Figure 7.2**).

Table 7.4 Project Social Localities

Study Area	Relevance to SIA	Definition (for this SIA)
Primary Social Locality (**PSL**)	• Likely to be localised social impacts relating to the immediate surroundings of the Project Site, for example, impacts associated with the construction of new buildings (i.e., amenity values, access, noise, air quality). • Longer-term impacts such as potential operational noise, traffic and/or increased activity in the area may occur within the close proximity to the Project.	• The PSL is defined using a **6 km buffer from the wind farm site**. This represents the visual impact catchment as identified in the Landscape and Visual Impact Assessment (see **Figure 7.1**). This boundary has been chosen to define the PSL because of the visual prominence of WTGs and scoping of visual landscape change as a key social impact. • To understand the demographic profile of the PSL, Statistical Area Level 1 (**SA1**) (as used by the Australian Bureau of Statistics (**ABS**) which align with the 6 km wind farm site buffer have been identified.
Secondary Social Locality (**SSL**)	Understand the broader impacts and benefits that the Project will likely have on the surrounding region.	The ESA has been used to define the SSL. Alignment between the SSL and ESA recognises the joint social and economic impacts that will occur at a regional scale. The ESA is defined in **Section 7.2.**

7.2.1.2 Economic study area

The ESA (see **Figure 7.2**) has been defined to include the following LGAs:

- Ararat Rural City
- Ballarat City
- Corangamite Shire
- Golden Plains Shire
- Greater Geelong City
- Pyrenees Shire.

The main regional cities/townships/settlements in the ESA are all located within a 60-minute drive (approximately) of the Project Site.

The ESA's local and regional communities, to differing extents, have the potential to contribute to the Project and derive economic benefits from both the construction and operational phases of the Project. From a regional perspective, the LGAs of the City of Greater Geelong and Glenelg Shire (outside of the ESA) are also anticipated to play an important role in the delivery of components and procurement of goods and services.

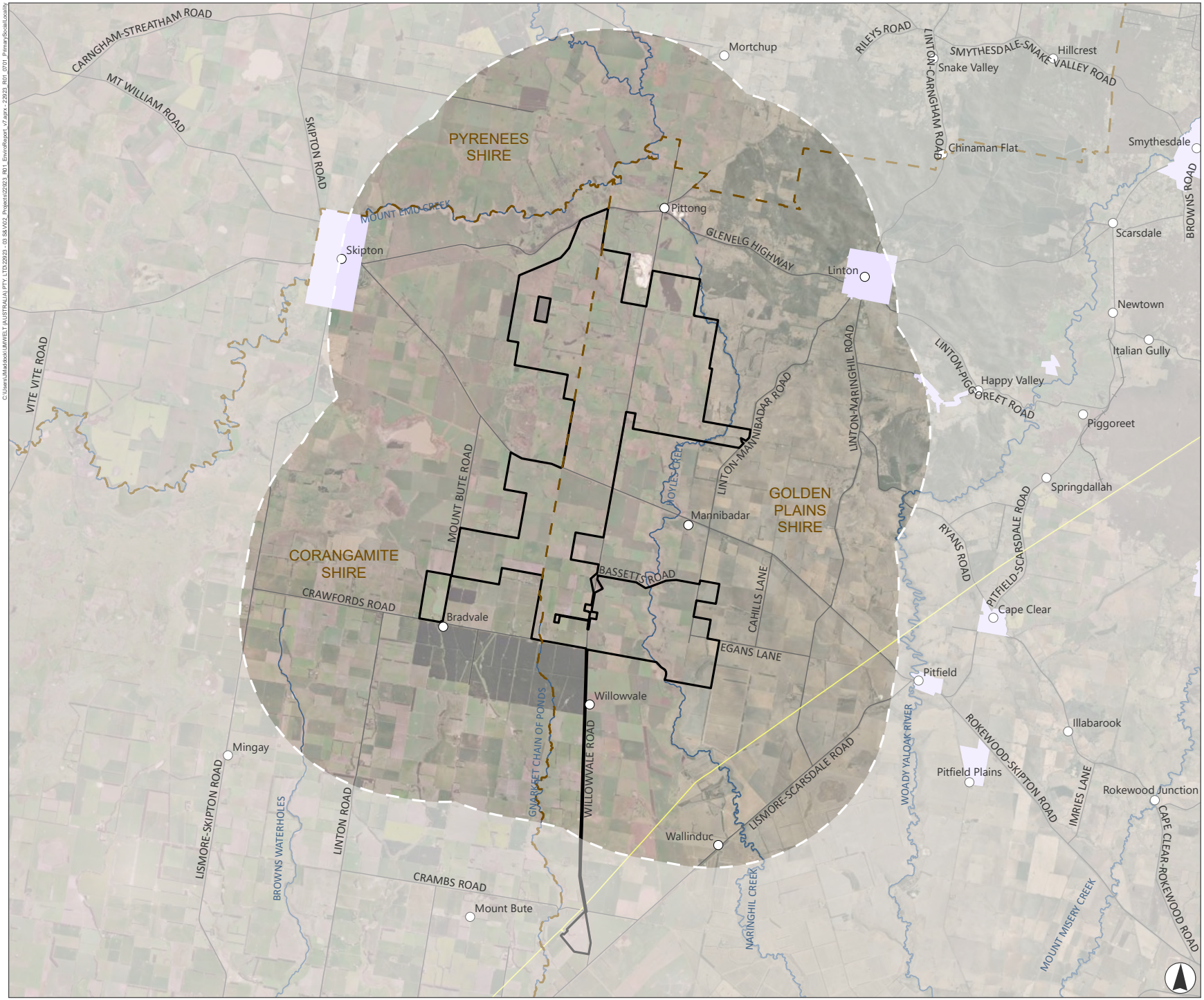

FIGURE 7.1
Primary Social Locality

Legend

- Project Site
- 6km Buffer
- Populated Area
- Local Government Area
- Existing 220kV Transmission Line
- Railway
- Roads
- Major Watercourse

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Kilometres

Scale 1:175,000 at A4
GDA2020 MGA Zone 54

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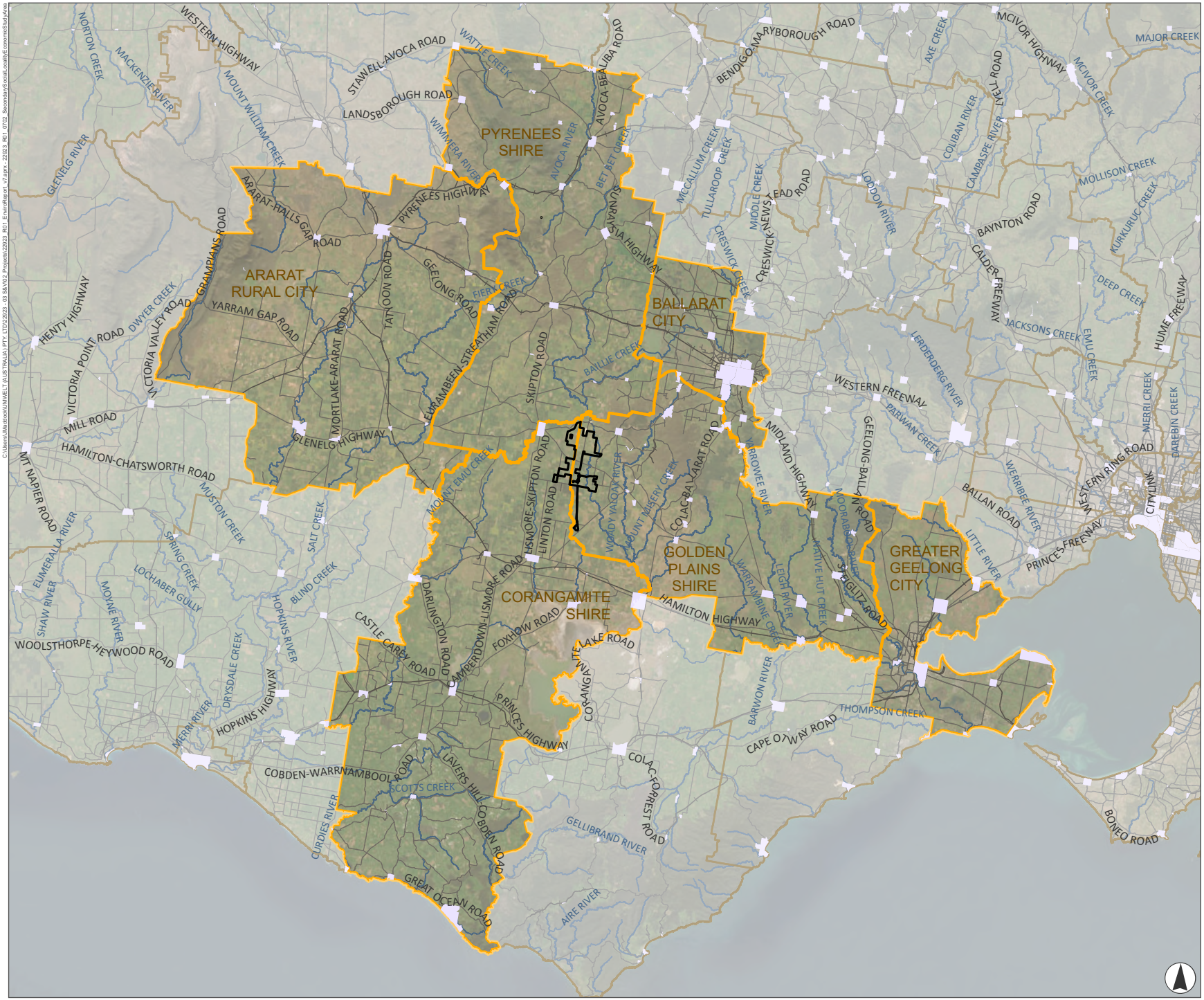

FIGURE 7.2

Secondary Social Locality and Economic Study Area

Legend

- Project Site
- Economic Study Area/ Secondary Study Area
- Local Government Area
- Populated Area
- Railway
- Roads
- Major Watercourse

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7.3 Social and Economic Baseline

7.3.1 Regional Context

The Project is located on the border of the Corangamite and Golden Plains LGAs. The Project is in a predominantly rural setting with a small surrounding population. Ballarat serves as the primary service centre for the surrounding rural areas, being the closest major regional centre approximately 35 km to the northeast of the Project.

Key settlements within a 60-minute drive of the Project Site include Ballarat, Ararat, Smythesdale, Bannockburn, Camperdown and Beaufort, which each support a mix of residential, commercial and industrial sectors.

Beyond this local region, the major city of Geelong is located approximately 65 minutes drive from the Project Site. Geelong, while more distant, is part of the broader regional setting and has an established role in industry, transport and logistics (including the Port of Geelong and Avalon Airport) and services, and has the potential to support many aspects of the Project.

For more information regarding the regional context of the Project, see **Section 4.1**.

7.3.2 Demographic Profile

Table 7.5 provides an overview of the social localities' demographic profiles compared to the Regional Victorian Baseline. See Appendix B of the SEIA (**Appendix B**) for a detailed demographic profile.

Table 7.5 Overview of General Population Characteristics

Characteristic	Summary
Age structure	The median age in the PSL is 46.2 years, older than the Regional Victoria baseline median of 42.8 years. The median age in the SSL, is younger than the PSL and baseline at 39.8 years. Older age cohorts (50-84 years) make up a higher proportion of the PSL population (45.7%), as opposed to the SSL (35.5%). There is a lower proportion of young adults aged between 18-24 in the PSL (6.5%) in comparison to the SSL and the baseline (8.4% and 7.2% respectively).
Median income	The PSL has a lower median household income of $63,770, less than both the SSL ($79,530) and the Regional Victoria baseline ($72,730). Most individuals in the PSL are identified as medium income earners (48.3%), which is marginally higher than that of the SSL and baseline (45.1% and 44.8% respectively).
Long-term health conditions	The PSL has high rates of long-term health conditions (85%). This trend is reflected across the SSL (84.2%). The top four conditions in the SSL are asthma (20.7%), cancer (19.2%), stroke (18.6%), and kidney disease (9.3%). By contrast, only 52% of the regional Victorian population have a long-term health condition.

7.3.3 Population Trends and Projections

The population of the ESA totalled 444,800 persons in June 2021 (Australian Bureau of Statistics, 2021). Over the period 2021-2036, population growth in the ESA is expected to be +1.7% per annum (p.a.) (or +8,430 persons p.a. over 15 years) which is the same as Victoria's growth rate of +1.7% p.a.

Population growth within the ESA is largely driven by significant expansion in the City of Greater Geelong, which is projected to grow by approximately 88,720 people over the next 15 years. In contrast, minimal growth is expected in the Ararat and Pyrenees Shires, while the Corangamite Shire is projected to experience a decline in population.

However, major infrastructure projects (such as state-significant resource projects, transmission and renewable energy initiatives in western Victoria) are expected to generate new employment opportunities. These projects may help attract new residents to the region.

7.3.4 Stakeholder Identification

Table 7.6 outlines the stakeholders who would be affected by social impacts and benefits from the Project.

Table 7.6 Stakeholder Matrix

PSL	SSL/ESA
• Participating landholders • Non-participating landholders within 6 km of the Project Site • Farmers in the PSL • Residents of Skipton • Residents of Linton • Community facilities in the PSL	• Community groups across the SSL • People accessing community infrastructure • Sports and community clubs • Visitor economy businesses • Construction/Trades workers • Retail trade and hospitality businesses • Construction supply businesses • Traditional Owners • Visitors/tourists to the region • People who live in rented housing

Residents of the PSL are considered key stakeholders. There are 24 host landholders who will host Project infrastructure on their land. There are 131 non-involved neighbours located within six km of a Project WTG. Distances from the Project Site for host and non-associated receivers are detailed in **Figure 7.3.** Stakeholder and community engagement methods and outcomes are described in **Section 6.0**.

7.3.5 Business Structure and Labour Force

Corangamite Shire's economy is driven by Agriculture, Forestry and Fishing, which makes up 36% of its $3.5 billion output, with tourism also playing a key role. In Golden Plains Shire, the same sector contributes 20% of its $2.1 billion economy and is the largest employer.

The ESA includes around 7,929 construction businesses which comprise 20% of all businesses located in the ESA (Australian Bureau of Statistics, 2024). The ESA has a labour force of 252,170 people, with 10,950 residents currently unemployed (Australian Government National Skills Commission, 2024).

There is a solid presence of firms within the ESA capable of supporting the Project's service needs, with businesses across various sectors likely to benefit both directly and indirectly from the Project. Approximately 30.6% (64,470) employed residents in the ESA have a skills base broadly aligned with the types of skills required for the construction of major utility-scale renewable energy projects (Australian Bureau of Statistics, 2021).

7.3.6 Accommodation Capacity

The Proponent anticipates that approximately 50% of the construction workforce are likely to be sourced from beyond the ESA. This means that on average, around 70 FTE workers will require accommodation per month across the construction phase (i.e. a period of 24 months), increasing to approximately 160 FTE workers at peak construction (which will last for several months)

Accommodation options for non-local construction workers in the ESA include commercial accommodation such as rooms/cabins, as well as private accommodation such as short/long-term rental properties. The ESA currently has a capacity of approximately 10,270 rooms and cabins in commercial / private accommodation in locations within a 60-minute drive of the Project Site.

7.3.6.1 Commercial Accommodation Capacity

The ESA's commercial accommodation capacity is currently approximately 2,811 rooms/cabins. Most of the accommodation within the ESA is concentrated in Geelong and Ballarat, highlighting their importance as regional hubs and popular tourist destinations. In contrast, Ararat, Camperdown, and Avoca offer fewer options for visitors. Across the ESA, there is a wide variety of short-term commercial accommodation, including hotels, motels, and caravan or holiday parks.

7.3.6.2 Private Accommodation Capacity

The ESA has a slightly lower proportion of unoccupied dwellings (10%, or 19,010 unoccupied dwellings) compared to the Victorian average (11.1%). However, Corangamite Shire and Pyrenees Shire have notably higher rates of unoccupied homes, at 14.6% and 18.8% respectively. Depending on factors like condition and ownership, some of these vacant properties could potentially be made available to support the Project and other major infrastructure initiatives in the region.

The vacancy rate for long-term rental properties within 60-minutes of the Project Site in the ESA was 1.4% in March 2025, with around 202 rental properties available. This indicates a constrained rental market in the ESA and as such the local rental market is likely to play a role in accommodating non-local workers in the Project's construction phase.

The ESA's 2,810 listings for short-term rental properties are estimated to account for approximately 7,460 rooms. It is likely that many of these rooms already play a role in servicing a range of visitor sectors. Short-term rentals in the ESA generally operate at an average occupancy of 40-50%, which is slightly lower than standard operating occupancy (approx. 60%).

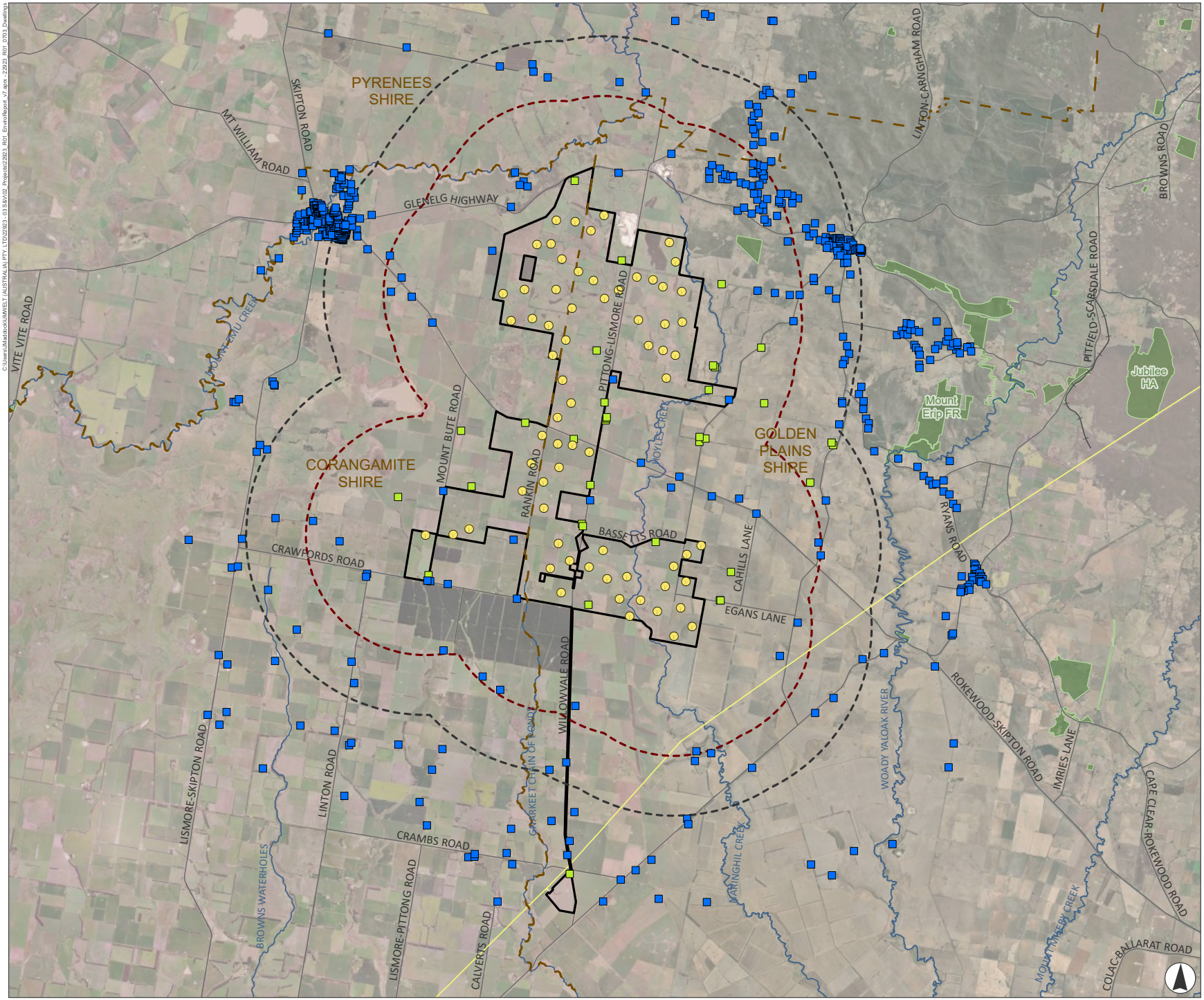

FIGURE 7.3

Involved and Non-involved Dwellings

Legend

- Project Site
- Turbine
- Non-involved Dwelling
- Involved Dwelling
- 4km Turbine Buffer
- 6km Turbine Buffer
- Local Government Area
- Existing 220kV Transmission Line
- Parks and Reserves
- Roads
- Major Watercourse
- Railway

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Kilometres

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7.4 Potential Impacts

Construction, operation and decommissioning of the Project has potential to impact on socio-economic matters, with these impacts mainly experienced both during the construction and operational phases of the Project. The impact pathways relating to socio-economic matters are outlined in .

Table 7.7 which provides a summary of the positive (blue) and negative (orange) potential impacts from the Project.

Table 7.7 Socio-economic Impact Pathways

Impact pathway	Type of impact	Project phase	Section reference
Social impacts			
Increased employment opportunities and flow on effects to local businesses		Construction, Operation, Decommissioning	**Section 7.6.1.1**
Improved livelihoods for participating landholders and neighbours		Construction, Operation, Decommissioning	**Section 7.6.1.2**
Increased investment in social infrastructure and community groups across Golden Plains and Corangamite LGAs		Construction, Operation, Decommissioning	**Section 7.6.1.3**
Contribution to emission reduction in the State of Victoria		Construction, Operation, Decommissioning	**Section 7.6.1.4**
Change in the locality's landscape character and people's connection to place caused by the visual impact of wind turbines		Construction, Operation, Decommissioning	**Section 7.6.2.1**
Way of life and accessibility impacts from temporary construction related noise, dust, vibration, traffic, and disruption		Construction	**Section 7.6.2.2**
Risk of reduced social cohesion and community resilience due to conflicting perspectives on wind farm development		Pre-construction, Construction, Operation, Decommissioning	**Section 7.6.2.3**
Annoyance caused by wind turbines noise and shadow flickering		Operation	See Appendix C of the SEIA (**Appendix B**)
Fear of bushfires caused by the onsite BESS and WTG failure		Operation	
Fears of decreasing property values		Pre-construction, Construction, Operation	
Diminished ability to connect to Country, due to construction activities and changed landscapes		Construction	
Risk of increased pressure on rental housing, services and social infrastructure		Construction	
Economic impacts			
Capital investment from the Project		Construction, Operation, Decommissioning	**Section 7.6.1.5**

Impact pathway	Type of impact	Project phase	Section reference
Employment during construction and operation		Construction, Operation, Decommissioning	**Section 7.6.1.6**
Economic stimulus during construction		Construction	**Section 7.6.1.7**
Economic stimulus during operation		Operation	**Section 7.6.1.8**
Labour supply constraints during construction		Construction	**Section 7.6.2.4**
Housing and commercial accommodation sector strain from incoming workforce		Construction	**Section 7.6.2.4**
Disruption to agricultural operations		Construction, Operation	**Section 7.6.2.6**

7.5 Mitigation

Table 7.8 outlines the proposed mitigation measures and management strategies to minimise and manage potential negative impacts and enhance the positive impacts on socio-economic values.

Table 7.8 Socio-economic Mitigation Measures and Strategies

<table>
<tr><th>MM-ID</th><th>Mitigation Measure/ Strategy</th><th>Description</th></tr>
<tr><td>MM-SE01</td><td>Employment strategy</td><td>The Proponent will implement an employment strategy to direct employment benefits to the local community and support a diverse workforce during the construction and operation of the Project. This will include:
An Aboriginal Participation Plan aiming to encourage Aboriginal workforce participation.
Align with Victoria’s Social Procurement Framework when selecting local and social procurement objectives and designing procurement processes to meet these objectives.
Align with Victoria’s Women in Construction Strategy by encouraging greater participation of women in the Project’s construction workforce.</td></tr>
<tr><td>MM-SE02</td><td>Community commercial arrangements</td><td>The Proponent will implement a community commercial arrangement to deliver payments to neighbouring and participating landholders
Host landowner payments – Commercial in confidence
Neighbouring landowner payments – The proposed annual payments structure (see below) will start from the construction phase and continue through the 30-year operational period (adjusted for consumer price index (CPI)).
<table>
<tr><th>Zone (Distance from turbines)</th><th>Payment per turbine (per annum</th><th>Minimum Payment (per annum)</th></tr>
<tr><td>Zone 1: 0–3 km</td><td>$2,000</td><td>$5,000</td></tr>
<tr><td>Zone 2: 3–4 km</td><td>$1,000</td><td>$5,000</td></tr>
</table>
</td></tr>
</table>

MM-ID	Mitigation Measure/ Strategy	Description
MM-SE03	Community investment program	The Proponent will also invest at least $1,050 per megawatt of the final capacity of the Project per annum through a dedicated community investment program to support local community priorities. This program will commence at the start of construction and continue for the life of the Project. Based on the current expected capacity of the project, an estimated $13 million would be paid to the community over the life of the project. A local community sponsorship program will be available to local organisations, events and initiatives throughout the project lifecycle, from development through to the end of operations. The Moreton Hill Wind Farm community sponsorship program has been ongoing since 2023, providing up to $40,000 per annum. The distribution mechanism for the community investment program has yet to be determined, but may take the form of a Community Fund which could provide grants to local organisations/programs or direct support for priority community initiatives identified through consultation with the community and key stakeholders.
MM-SE04	Payment in Lieu of Rates	Established under section 96(6A) of the *Electricity Industry Act 2000* (Vic), the Payment in Lieu of Rates (**PiLoR**) framework allows councils and electricity generators to negotiate annual payments. The Proponent will make PiLoR payments to the host Councils, during the operating phase. PiLOR payments to Council are estimated at $15.5 million. The uplift in rates revenues generated from the operation of the Project will therefore result in a net return to Council, providing additional revenue can be re-invested by the host councils into local infrastructure and services, which will benefit the community more generally.
MM-SE05	Procurement strategy	The Proponent will prioritise procurement for local businesses, industry and workers, through the development of a Procurement Strategy to guide the construction phase. The strategy would also identify opportunities to collaborate with TAFE training organisations across the region to identify local opportunities for apprentice upskilling through working on the Project.
MM-SE06	Construction workforce accommodation strategy	In the lead up to construction commencing, the Proponent will prepare a high-level Construction Workforce Accommodation Strategy. This strategy will identify cumulative impacts at that time which have the potential to negatively affect regional labour and accommodation markets. The strategy will include management options for potential cumulative impacts on the local housing/accommodation market that the Project could contribute to, associated with other users, sectors/industries or other projects.
MM-SE07	Stakeholder Engagement Plan	The Proponent will continue to implement the Project's Stakeholder Engagement Plan throughout all phases of the Project, with regular Project updates and information sessions to inform the community about project details and potential impact and benefits.

7.6 Residual Impact Assessment

The following sections summarise the perceived socio-economic impacts (positive and negative) that may be experienced by different stakeholders due to anticipated changes associated with the Project.

Only impact pathways (as discussed in **Table 7.7**) with a residual impact of high to very-high are discussed below. Assessment of less significant social impacts ("medium" and "low" in rating) are detailed in Appendix C of the SEIA (**Appendix B**).

Residual social impacts have been assessed using the social impact significance matrix outlined in **Table 7.3.** Residual economic impacts are based on quantified economic modelling and have not been assessed using the same approach as social impacts. Therefore, residual economic impacts have been discussed without a significance rating.

7.6.1 Positive Impacts

7.6.1.1 Increased employment opportunities and flow on effects to local businesses

The Project is expected to generate increased employment opportunities for workers across the region (SSL), positively influencing livelihood outcomes during both the construction and operational phases. Local business owners in Skipton, Linton, and surrounding areas are also likely to benefit from heightened economic activity and spending, which can improve wellbeing by easing financial pressures such as housing and food insecurity. These impacts are particularly meaningful considering broader cost-of-living challenges and the socio-economic conditions specific to the area.

Given that households within the PSL population typically earn less than the Regional Victorian median (see **Section 7.3**), the economic benefit, especially from local spending by construction workers, is especially significant in this context. Additionally, expanding access to regionally significant construction jobs offers a pathway to increased income and improved financial stability for participating workers and their families.

The Proponent will implement an Employment Strategy to direct employment benefits to the local community and support a diverse workforce during the construction and operation of the Project (see mitigation measure MM-SE01). With the implementation of this strategy, the Project is considered to have the potential to deliver a **very high positive** impact in relation to improved livelihoods for involved workers, with positive flow on effects contributing to the local business across the PSL and surrounding region.

Initial impact rating	Residual impact rating
High (positive)	**Very high (positive)**

7.6.1.2 Improved livelihood for participating landholders and neighbours

24 participating landholders will receive long-term livelihood benefits through confidential commercial agreements with the Proponent (see **Section 7.3.4**). These arrangements provide a stable source of income over 30 years, offering financial security for farming households that typically face income variability due to seasonal and market conditions. This consistent revenue is particularly valuable in the context of drought risk and an ageing farming population, with many landholders' nearing retirement (see **Section 7.3.2**). Local stakeholders and Golden Plains Shire have identified this stable income as a key benefit of the Project (see **Section 6.6.2**).

Beyond host landholders, neighbouring farmers will also benefit from additional commercial agreements, helping to extend the Project's positive impact across the broader community. These arrangements support financial resilience and help safeguard rural lifestyles, especially during low-income years. International evidence further supports the role of wind farm developments in strengthening the economic sustainability of farming communities by diversifying and stabilising income streams

With the implementation of the community commercial arrangements (see mitigation measure MM-SE02), the residual **positive** impact of the Project on the livelihoods of participating and neighbouring landholders is expected to be **very high**.

Initial impact rating	Residual impact rating
High (positive)	**Very high (positive)**

7.6.1.3 Increased investment in social infrastructure and community groups across Golden Plains and Corangamite LGAs

Community infrastructure and programs will benefit from long-term term sustained investment over the course of a 30-year period because of the Project's development. The Project will support social infrastructure and community groups through a dedicated community investment program, contributing up to $442,050 annually (about $13 million over the Project lifecycle) based on the current expected capacity of the Project (see mitigation measure MM-SE03), alongside direct payments in lieu of rates totalling about $15.5 million for Golden Plains and Corangamite Shires (see mitigation measure MM-SE04). This will provide additional funding for community programs and infrastructure, such as (but not limited to) sports clubs, community services and health organisations, and tourist attractions.

This investment is expected to strengthen wellbeing and quality of life in rural communities, particularly in regions where council revenue may be limited due to stagnant or declining population growth (see **Section 7.3.2**). All stakeholders interviewed for the SIA have emphasised the Project's importance in sustaining essential infrastructure and services (see **Section 6.6.2**). Similar benefits have been observed in other wind farm developments, with research showing that such projects can significantly boost regional economies and help future-proof community assets.

With the implementation of the community investment program and the PiLoR contributions (see mitigation measures MM-SE03 and MM-SE04), residual **positive** impacts from increased investment in social infrastructure are anticipated to be **very high.**

Initial impact rating	Residual impact rating
High	**Very high (positive)**

7.6.1.4 Contribution to emission reduction in the State of Victoria

The Project will help reduce carbon emissions by generating clean, renewable energy to power homes, businesses, and industries locally and across wider Victoria. It will produce enough renewable energy to supply around 260,000 households, supporting the State's transition toward a low-carbon energy system. This large-scale wind farm development may also foster community pride in contributing to climate action.

See **Section 2.4.5** for more information regarding the energy and security benefits of the Project.

The residual positive impacts from contributions of the Project to emission reductions in Victoria are anticipated to be **high**.

Initial impact rating	Residual impact rating
High	**High (positive)**

7.6.1.5 Capital investment from the Project

The Project is expected to cost around $1.5 billion (excluding GST), primarily for turbine components, battery storage, and infrastructure works. 10% of construction investment is likely to stay within the ESA including regional hubs like Ballarat and Geelong resulting in an estimated $150 million in local economic benefits (wages, contracts, services) during the 24-month construction phase.

This is a significant economic benefit for the ESA which will positively affect a range of industries and services across the region.

7.6.1.6 Employment during Project construction and operation

Construction and operation of the Project is anticipated to support additional jobs in the region. Project employment is assessed in terms of direct jobs and indirect jobs in the local and wider economies. Direct jobs related to onsite construction or operation activities, and indirect jobs related to employment generated from supplying or supporting industries (such as accommodation, food, trade supplies, mechanical support).

Based on experience of wind farm construction projects in western Victoria, the anticipated demands of multiple concurrent projects likely to be constructed in the surrounding region, and the existing local workforce, the following target for local and non-local construction employment split is considered likely:

- Local employment: 50% of total jobs expected to be sourced from within the ESA.
- Non-local employment: 50% of total jobs expected to be sourced from outside the ESA.

During construction, the Project is expected to support a workforce of 360 full-time equivalent (FTE) jobs om average each month, including 140 direct FTE jobs and 220 indirect FTE jobs. These numbers would rise to 320 direct FTEs and 510 indirect FTEs during peak construction (estimated to last several months).

Construction of the Project is expected to source 50% of its total direct FTEs locally (within the ESA), averaging 70 FTE jobs, and increasing to 160 FTE local jobs at peak, with the remaining 50% sourced from outside the region (also averaging 70 FTE jobs and rising to 160 FTE non-local jobs at peak). Additionally, the Project will support 40 FTE operational jobs (10 direct and 30 indirect), with 16 FTE jobs supported in the region. This includes 10 FTE jobs directly onsite (6 of which would be sourced locally).

The generation of employment is a positive economic benefit for the region through the provision of wages for local employees.

7.6.1.7 Economic stimulus during construction

During the 24-month construction period, the temporary migration of non-local workers is expected to inject approximately $7.0 million (2025 dollars) into the ESA economy through spending on accommodation, meals, personal services, and living away from home allowances. This expenditure, funded by workers or the contracted EPC, is projected to support around 18 FTE in the services sector. The additional spending will support jobs in the ESA, particularly in sectors such as retail, accommodation, trade supplies, health services, fuel supplies, cafes, and restaurants. These 18 FTEs are captured in the indirect construction employment detailed in **Section 7.6.1.6.**

7.6.1.8 Economic stimulus during operation

Operation of the Project will generate ongoing economic stimulus into the community and ESA, through the following:

- **Landholder agreements:** The Proponent will be paying annual lease payments to the 28 involved host landholders. These payments are confidential.
- **Voluntary neighbour agreements:** 86 neighbours within 4 km of a WTG have been offered an annual payment, depending on the location of turbines in relation to a dwelling (see mitigation measure MM-SE02), totalling up to $30 million over the Project's life (CPI adjusted).
- **Community investment program:** Implementation of a community investment fund will see at least $1,050 per MW per annum delivered from the start of construction and for the operational life of the Project. Over the life of the project, this will amount to approximately $13 million (CPI adjusted).
- **Community sponsorship program:** $40,000 in annual small grant funding available to local community groups and initiatives. This program commenced since 2023.
- **PiLoR Scheme:** The Proponent will contribute to supporting social infrastructure and community by contributing $15.5 million to Golden Plain Shire and Corangamite Shire over the operational life of the Project. This additional revenue can be re-invested by the host councils into local infrastructure and services, which will benefit the community more generally.
- **Ongoing local wages (16 FTEs):** Over the 30-year operational lifespan, the 16 FTE jobs in the ESA supported by the Project will generate an economic stimulus of $35.3 million (CPI adjusted).

The total economic stimulus associated with operation of the Project is estimated at approximately **$200 million** over 30 years (2025 dollars, CPI adjusted) including host and neighbouring landowner payments, PiLoR returns to the host councils, community investment funds, and operational wage stimulus.

7.6.2 Negative Impacts

7.6.2.1 Change in the locality's landscape character caused by the visual impact of wind turbines

While the Project would become a feature of the visual landscape, it is likely the broader character of the area (which is highly modified due to the agricultural land use) will remain intact. However, the degree to which the existing landscape character and significance is altered because of the Project, is determined by the dominance of the WTGs in relation to the existing landscape features.

The Project could potentially affect how some residents and visitors connect with their surroundings. This change in the visual landscape may lead to a reduced sense of place due to the introduction of industrial infrastructure.

A number of non-involved dwellings are located within varying distances of the proposed turbines, with those closest likely to experience direct visual impacts. While many of these homes are partially screened by vegetation, visual change remains a potential social impact. Stakeholders acknowledged the visual impact as an expected part of the development, with wind farms increasingly seen as part of the evolving landscape (see **Section 6.6.2**).

Visual impact and changing landscape character are inherent aspects of wind farm development. However, receivers of the most substantial changes to visual landscape character will be compensated for their proximity to the Project via voluntary neighbour agreements. In addition, landscape screening would be offered to residences subject to a moderate or high level of visual impact to assist in mitigating views of WTGs.

Community commercial arrangements will allow for compensation of neighbouring landholders within 4 km of the Project Site (see mitigation measure MM-SE01).

The potential visual impact of an overhead transmission line has been avoided by locating the Project's 220 kV transmission line underground. Considering the unavoidable nature of landscape change associated with WTGs, the residual impact will remain **medium**.

Initial impact rating	Residual impact rating
Very high	**Medium**

7.6.2.2 Way of life and accessibility impacts from temporary construction related noise, dust, vibration, traffic, and disruption

Construction related noise, dust, vibration, traffic, and disruption may cause irritation, annoyance or disturbance to the way of life, health and wellbeing and accessibility for people living in PSL. This may impact the health and well-being of some receivers, especially those with pre-existing conditions, which may make them sensitive to construction activities, such as people with respiratory and auditory conditions, people with long-term health conditions, young children or older people. Construction related heavy vehicle traffic has the potential to disrupt the daily routines of residents across the PSL and road users along transport routes selected to transport the WTG components from the Port of Portland to the Project Site. However, these disruptions would only be temporary for the duration of construction works. Participating landholders are the most likely affected receivers, as construction works will be located closer to and on their properties.

Temporary amenity related impacts associated with noise, dust, vibration and traffic would be managed through the Construction Environment Management Plan (**CEMP**), as well as various sub-plans such as a Traffic Management Plan and Construction Noise Management and Monitoring Plan.

Whilst some temporary minor impacts are anticipated due to the scale of the Project, with the implementation of these plans and mitigation measures, the residual impacts on way of life and accessibility from temporary construction are expected to be **medium**.

Initial impact rating	Residual impact rating
High	**Medium**

7.6.2.3 Risk of reduced social cohesion and community resilience due to conflicting perspectives on wind farm development

Differences in community support for the Project have the potential to lead to social conflict, particularly between participating landholders who benefit financially and neighbouring residents who may oppose the development. This divide could strain relationships and affect community cohesion, especially if some feel the benefits and impacts are unfairly distributed, such as those outside the compensation zone who still experience visual impacts.

Stakeholder views on community cohesion varied (see **Section 6.6.2**). While some landholders expressed concern and preferred to avoid discussing the Project to prevent conflict, others (including local councils and community groups) felt the region was well-prepared for wind farm development due to past experience and early engagement efforts. The arrival of around 70 non-local workers during construction may also affect social dynamics, with concerns about housing, behaviour, and income differences. However, previous experiences in the surrounding region show that workers have positively contributed to local communities by participating in social and sporting activities.

To help manage potential conflict, the Project includes standardised commercial arrangements for host and neighbouring landholders, a long-term community investment program, and a robust engagement and communications strategy. These measures aim to promote shared benefits, reduce misinformation, and support community unity. While the risk of reduced cohesion remains due to differing views on wind farm development, proactive engagement and inclusive benefit-sharing are expected to mitigate this, with residual impacts considered to be **medium**.

Initial impact rating	Residual impact rating
High	**Medium**

7.6.2.4 Labour supply constraints during construction

As indicated by the ESA's workforce structure (see **Section 7.3.5**) construction is a major industry. There are approximately 10,950 unemployed labour force participants in the ESA, some of whom potential to work on the Project. In isolation, the labour force requirement of 115 FTE local workers should not present a constraint to labour supply for the Project. However, there is potential for cumulative impacts with other large infrastructure projects in the region (see **Section 7.7**).

The Proponent would support the ESA economy by providing ESA employment and business opportunities wherever possible. The Proponent will consider developing a Procurement Strategy to guide the Project's construction phase, and also explore opportunities to collaborate with TAFE training organisations across the region to identify local opportunities for apprentice upskilling through working on the Project (see mitigation measure MM-SE05).

7.6.2.5 Housing and commercial accommodation sector strain from incoming workforce

At peak construction, around 160 non-local workers may need accommodation in the region comprising a mix of accommodation options. Based on a desktop review of available commercial and private accommodation in the ESA (see **Section 7.3.6**), it is considered that there is sufficient capacity to house the number of non-local workers expected at the peak of the Project. When considering seasonal accommodation demands relating to tourism, agriculture etc., accommodation, capacity is still likely to be adequate given the large amount of commercial/private stock available.

However, given the shortage of rental stock within the ESA, the Proponent will avoid this type of housing for Project workers given its relative scarcity and the potential to inflate local rental costs exacerbating affordability challenges.

7.6.2.6 Disruption to agricultural operations

The Project Site includes approximately 6,697 ha of agricultural land, with only 99 ha (1.4%) affected by the construction footprint. The operational footprint representing the permanent Project infrastructure would be much less than construction, covering approximately 69 ha and equating to approximately 1% of the Project Site.

No job losses are expected, either directly (on-site) or through agricultural supply chains. Construction will likely result in some disruption on agricultural operations however, the scale of current activities can continue mostly similar following construction.

The Project will co-exist with agricultural activities, and host landowners will benefit from 65 km of new internal access tracks, improving farm access, efficiency, and reducing bushfire risks to assets like buildings and livestock.

7.7 Cumulative Impact Assessment

There are several other renewable energy developments in the region that could contribute to cumulative impacts in combination with Moreton Hill Wind Farm. Other renewable energy projects that have potential to or are considered likely to result in cumulative impacts within the ESA/SSL are detailed in **Table 7.9**. As renewable energy and other projects increase in number and scale, impacts can combine and multiply, and so may community and stakeholder concern.

There are two key potential cumulative socio-economic impacts that could occur:

- Overlapping construction timeframes for developments close to the Project could result in an influx of workers and need for services and accommodation that could create greater pressure on the social locality.
- Change in the landscape character across the Central Highlands REZ due to the concurrent operation of wind farms, affecting the visual amenity of the region.

7.7.1 Overlapping Construction Timeframes

The Project has the potential to compete for labour, accommodation, and other resources with other major infrastructure projects (mainly renewable energy projects) if constructed concurrently in the ESA.

The potential for cumulative impacts is based on the proposed construction timeframes for this Project as well as other proposed developments. The Project's indicative timing for the construction is spread across 24 months, expected to commence in mid-2029 and be completed by the end of 2030.

There is potential for the Project's construction to overlap with the construction of Western Renewables Link, as detailed in **Table 7.9**. If construction phases coincide, cumulative impacts could arise, particularly economic pressures on local labour availability, essential services, and accommodation in nearby towns.

In scenarios where construction timelines overlap, the cumulative impact is rated as **medium** (negative). If there is no overlap, the impact is considered **low** (negative). Should overlap occur, targeted mitigation strategies will be necessary to ensure adequate labour supply and worker accommodation across all three major projects in the region. This will be addressed through preparation of a high-level Construction Workforce Accommodation Strategy, which will include management options for potential cumulative impacts on the local housing/accommodation market that the Project could contribute to, associated with other users, sectors/industries or other projects (see mitigation measure MM-SE06).

7.7.2 Change in Landscape Character across the Central Highlands REZ

The Project will contribute to a gradual transformation of the rural landscape across the Central Highlands REZ (see **Section 2.1.2.3**). This evolving change may influence how residents and visitors perceive and connect with the region, with experiences varying from positive to negative.

The continued development of wind farms may be viewed as a symbol of progress toward a net zero energy system. This can enhance community wellbeing by reinforcing efforts to address climate change. For some residents, wind energy projects also represent significant capital investment in the region, fostering optimism around future employment, business growth, and broader economic development.

Conversely, those opposed to wind farm development may feel negatively affected by the cumulative changes to the landscape. Concerns may stem from the visual impact of turbines and perceived effects on health and wellbeing, contributing to a diminished sense of place and personal comfort.

Overall, the cumulative social impact rating for landscape character impact is assessed as **medium** (negative). This is primarily due to the visual prominence of the proposed WTGs, and other wind farms that will be operating in the region at the same time including Stockyard Hill Wind Farm, Berrybank Wind Farm and Golden Plains Wind Farm (see **Table 7.9**). However, this impact is moderated by the presence of existing wind farms, which have become a familiar part of the regional landscape over the past two decades.

Table 7.9 Renewable Energy Projects with Potential for Cumulative Socio-economic Impacts (ESA/SSL)

Project	Approximate location to the Project Site	Status	Description	Likelihood of Combined Impact	Cumulative impact
Ballyrogan Wind Farm	40 km to the north-west	Proposed	1GW / 115 turbines	Unlikely	Construction period overlap is unlikely due to a coordinated planning between the two projects. Limited impact once operational as located some distance from the proposed Project.
Western Renewables Link	45 km to the north	Proposed	500 kV/190 km renewable energy transmission line from Victoria's west to Sydenham in Melbourne's north-west.	Possible	Potential construction period to overlap which has the potential to cause workforce and accommodation shortfalls across the region.
Golden Plains Wind Farm	10 km to the south-east	Under construction	1,330 MW / 228 turbines 16,000 ha	Almost certain	Construction likely to be completed prior to the Project's construction phase commencing. Cumulative visual impact changing the visual character of the area. Potential cumulative benefit to the local economy from the community benefit sharing scheme, providing additional funds to community groups and/or infrastructure within Golden Plain LGA.
Berrybank wind Farm	9.5 km to the south	Operating	332 MW/79 turbines 5,000 ha	Almost certain	Cumulative visual impact changing the visual character of the area. Potential cumulative benefit to the local economy from the community benefit sharing scheme providing additional funds to community groups and/or infrastructure within Golden Plains and Corangamite LGAs.
Stockyard Hill Wind Farm	5 km to the north	Operating	539 MW/149 turbines 15,600 ha	Almost certain	Cumulative visual impact changing the visual character of the area Potential cumulative benefit related to operational staff and site visitors accessing local services.

8.0 Biodiversity

8.1 Overview

Ecology and Heritage Partners Pty Ltd (**EHP**) completed a series of ecological investigations and prepared an Ecological Assessment (see **Appendix C**) and Brolga Level 1, 2 and 3 Assessment (**Appendix D**) for the Project to inform this environment report. A summary of the methodology, existing conditions, proposed design avoidance and mitigation measures, and residual impact assessment outcomes are provided in this section.

Ecological investigations have been ongoing since 2020, with several years of onsite field investigations to characterise the existing ecological conditions within and around the Project Site, and to assess potential impacts from the Project. The findings of the onsite investigations have continually informed the Project design, with several design refinements implemented to avoid impacts on biodiversity values, particularly Brolga habitat. Where predicted impacts could not be avoided, management and mitigation measures were developed (including adaptive management responses) to manage potential residual impacts.

Land located within and surrounding the Project Site has been substantially modified over time to accommodate agricultural operations. This has resulted in much of the native vegetation within private land being removed, with native vegetation predominantly restricted to roadsides or isolated clusters.

A total of 15.80 ha of native vegetation was recorded in the Flora Assessment Area used in the Ecological Assessment. However, construction of the Project is only anticipated to result in the direct removal of 1.64 ha of native vegetation, including 1.571 ha of native vegetation patches and one large scattered tree (equating to 0.069 ha). Native vegetation impacts are primarily associated with road and access track upgrades, underground reticulation and the underground transmission line.

Construction works are also anticipated to directly impact on two threatened ecological communities (**TECs**) – EPBC Act listed Natural Temperate Grassland of the Victorian Volcanic Plain and FFG Act listed Western (Basalt) Plains Grassland. No flora species listed under the EPBC Act would be directly impacted by construction of the Project, however there will be impacts on up to seven individuals of FFG Act listed Pale Swamp Everlasting (critically endangered). All other listed threatened flora species recorded during targeted surveys will be avoided by the construction footprint.

Of the 4.06 ha of Natural Temperate Grassland of the Victorian Volcanic Plain recorded within the Flora Assessment Area, the Project would result in a residual impact of 1.23 ha on the community. The western edge of the construction footprint would only impact on the eastern edge of 13 discrete low to moderate quality patches of the community along the road reserve of Willowvale Road. These edge impacts would only slightly reduce the extent of each patch, but no patches would be removed entirely, therefore no fragmentation would occur. However, as the minimum patch size threshold for NTGVVP is 0.05 ha or 0.5 ha, any patches that have been reduced to a retained area of less than 0.05 ha has been included in the impact assessment and assumed lost. As the Project would reduce the extent of this TEC, it is considered a significant impact. Offsets will be secured in accordance with the EPBC Act offsets policy.

The Project would also impact on 1.42 ha of the total 6.03 ha recorded extent of Western (Basalt) Plains Grassland. Impacted patches are all located within the road reserve. While the Project would slightly reduce the extent of this community by 1.42 ha, this is spread across 35 patches. The remaining 4.61 ha of the community recorded within the Flora Assessment Area will be retained. The Project has been assessed as not likely to have a significant impact on this TEC.

Lake Widderin was confirmed as a Brolga flocking and breeding site through Project investigations. Turbine-free buffers around confirmed breeding and flocking sites have been applied to reduce the potential for Brolga to collide with WTGs as an Endangered species listed under the Victorian FFG Act. Implementation of these buffers resulted in seven previously proposed turbines being relocated outside of these buffer areas in the current Project design. The resulting predicted collision risk, with the implementation of these buffers is 0.016 collisions annually at a 90% avoidance rate, and 0.003 collisions annually at a 98% avoidance rate. While the statistical risk of the Project impacting on Brolga through turbine collision is considered very low, additional mitigation is proposed to be implemented to further minimise potential impacts. This includes investigating the use and suitability of automated detection systems during the Project's operation through developing and implementing a targeted research trial. A Trial Plan will be developed and incorporated into the Bat and Avifauna Management Plan (**BAM Plan**) (**Appendix E**), that will involve an on-site trial of a selected technology at proposed WTGs located within 5 km of Lake Widderin which would explore tailored turbine operations response to the detection of Brolga.

The Project will also investigate the ability to increase the height of the minimum rotor swept area (RSA) from 44 m above ground to 61 m above ground (to avoid typical Brolga flight heights). The Project has conservatively assessed a minimum RSA of 44 m to provide a worst-case assessment of potential impacts. The final WTG model and specifications will be determined during detailed design.

Other bird and bat species observed during bird utilisation surveys and microbat surveys also have a low collision risk with WTGs. Most birds were recorded flying below RSA height or at ground level (92.3% of all observed flights), with only 3.1% of all observed flights at RSA height. Listed bird and bat species recorded during project surveys include EPBC Act listed Brown Treecreeper, Blue-winged Parrot, Grey-headed Flying-fox, White-throated Needletail and FFG Act listed Brolga, Little Eagle, Black Falcon and Eastern Bent-wing bat. A Bat and Avifauna Management Plan (**BAM Plan**) will be implemented for the Project to minimise, manage and mitigate residual collision risk for listed bird and bat species arising from the operation of the wind farm and to ensure unexpected bird mortalities are responded to appropriately. This includes a five-year monitoring plan, as well as species specific monitoring programs over several years for Brolga and White-throated Needletail.

With the implementation of design avoidance and mitigation measures, the Project is not expected to significantly impact on Commonwealth or State matters of environmental significance, except for residual impacts on EPBC Act-listed Natural Temperate Grassland of the Victorian Volcanic Plain. This residual impact has been assessed as significant, as the Project would reduce the extent of this TEC by 1.234 ha.

8.2 Methodology

This section provides an overview of the approach and methods used to prepare the Ecological Assessment (**Appendix C**).

8.2.1 Study Areas

Database searches of previous flora and fauna species records were undertaken for the Project Site plus a 10 km buffer, called the Radius of Investigation (**ROI**) (**Figure 8.1**). Desktop assessments used the ROI to assist in understanding the likelihood of occurrence for significant species.

Native vegetation surveys (including habitat hectare assessment) were undertaken within a defined 'Flora Assessment Area' (see **Figure 8.1**), which included:

- The construction footprint within the Project Site, with a 50 m buffer around proposed WTGs and associated hardstands, and a 25 m buffer around all other Project infrastructure (including access tracks) and ancillary works.
- The underground transmission line construction corridor of 7 m wide.
- 18 swept paths associated with Project Site entry points and nearby intersections within Corangamite and Golden Plains LGAs (see **Section 4.3.3.4**).

The intent of the Flora Assessment Area was to capture the vegetation values in the immediate vicinity of the proposed construction footprint and swept paths, and to allow for micro-siting should significant ecological values be identified.

Targeted flora surveys were also undertaken within the Flora Assessment Area, focusing on all areas of potential habitat.

All fauna surveys were undertaken within a study area based on the extent of potential habitat present within and surrounding to the Project Site and was not restricted to the Flora Assessment Area.

Potential impacts on ecological values along the entire proposed over-dimensional transport route have been considered in the Ecological Assessment (**Appendix C**). However, the 10 swept paths between the Port of Portland and Skipton have been excluded from the defined Flora Assessment Area due to their distance from the Project Site. A desktop assessment has been completed for these ten swept paths to understand potential impacts on native vegetation, threatened flora and TECs at these locations to ensure a 'whole of project' assessment has been undertaken for the environment report. This desktop assessment was informed by modelled extent of native vegetation data, and by previous surveys undertaken for the same over-dimensional transport route for Brewster Wind Farm (EHP, 2023) which concluded there would be no native vegetation impacts at these ten intersections. Native vegetation surveys of these ten swept paths would be undertaken prior to construction to confirm no presence of native vegetation (see mitigation measure MM-BD02).

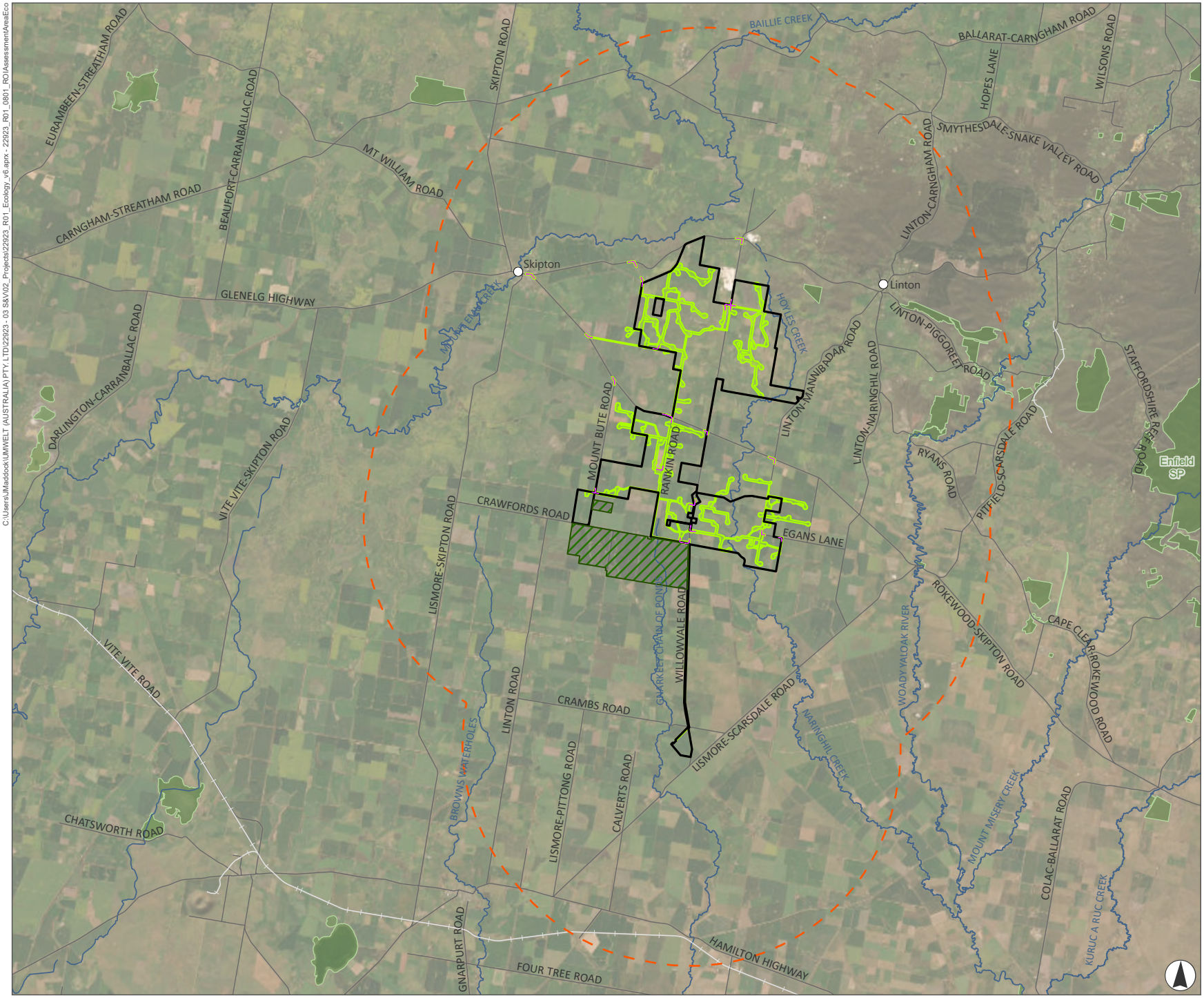
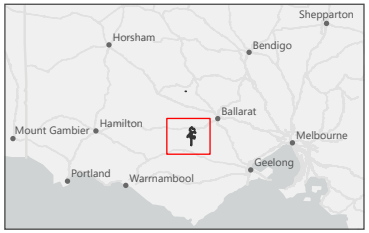


FIGURE 8.1

ROI and Assessment Area used in the Ecological Assessment

Legend

- Township
- Project Site
- Flora Assessment Area
- ROI - 10km
- Tyre Impact Envelope - Swept Path
- HVP Plantation
- Parks and Reserves
- Major Watercourse
- Roads
- Railway



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8.2.2 Desktop Assessment

Relevant literature, online-resources and databases were reviewed to provide an overall assessment of Ecological Vegetation Classes (**EVCs**), significant flora and fauna species and ecological communities with the potential to occur within the Project Site and the 10 km ROI. Refer to Section 2.3 of the Ecological Assessment (**Appendix C**) for further details.

Based on the outcomes of the desktop assessment and expert advice, a likelihood of occurrence assessment was then undertaken for significant flora and fauna species with records in the ROI. The likelihood of occurrence assessment also considered all species identified in Section 5 of the scoping document.

The proximity, number, dispersion and date of known locality records were considered to determine a species' likelihood of occurrence within the Project Site. Additional factors were also taken into consideration including known biogeographical distribution of the species, underlying geology of locality for existing records, and vegetation and habitat associations.

The criteria used to determine the likelihood of occurrence of significant flora and fauna species is documented in Section 2.5 of the Ecological Assessment (**Appendix C**).

8.2.3 Field Investigations

This section provides an overview of all the field investigations undertaken for the Ecological Assessment.

8.2.3.1 Native vegetation assessment

Given the size of the Project Site and the type and extent of the construction footprint (i.e., only a very small proportion of the Project Site is proposed to be disturbed), vegetation surveys focused on potential habitat within the Flora Assessment Area, rather than the entirety of the Project Site.

Native vegetation surveys were undertaken on the following dates:

- 22–24 September 2020
- 20–23 March 2023
- 6–7 April 2023
- 14 September 2023
- 2 December 2024
- 23 April 2025
- 8 October 2025.

Native vegetation assessments were conducted using the habitat hectare methodology (DSE, 2004) to quantify the quality and extent of native vegetation within the Flora Assessment Area, identify potential habitat for significant flora and fauna species and TECs, and to determine conditions with reference to findings of the desktop assessment. EVCs were determined with reference to DEECA pre-1750 and extant EVC mapping and their published descriptions (DEECA, 2025).

Native vegetation was classified in accordance with the definitions provided in the native vegetation guidelines.

The presence of TECs was considered during the native vegetation assessments, with all field assessments taking note of the key characteristics of the vegetation within the Flora Assessment Area to allow assessment against the listing advice for TECs.

8.2.3.2 Targeted flora surveys

Based on findings of the desktop assessment, consideration of species listed in the scoping document and confirmed presence of potential habitat through native vegetation assessments, targeted surveys were undertaken for the threatened flora species outlined in **Table 8.1.** This includes species beyond those just identified in the scoping document. The flora species in **Table 8.1** were considered to have a moderate to high likelihood of occurrence within the Flora Assessment Area.

Whilst the species identified in **Table 8.1** were the focus of the surveys, any EPBC Act or FFG Act listed flora species opportunistically observed were recorded. Handheld GPS units were used to record the location of any significant species encountered. Targeted flora surveys focused on vegetation along Rankin Road and Willowvale Road, as this is where the majority of potential habitat was observed, along with historical records for threatened species.

Areas of potential habitat for significant flora species were systematically traversed at approximately 5 m linear intervals as per the flora survey guidelines detailed in the Biodiversity Precinct Planning Structure Kit (DSE, 2010). Although the Project Site is not located within a prescribed Precinct Structure Plan, this survey method is best practice for conducting surveys for significant flora that do not have their own specific set of survey guidelines. This survey method was undertaken for all species in **Table 8.1**, except for Spiny Rice-flower. Surveys for Spiny Rice-flower were undertaken in accordance with the recommended survey guidelines detailed in the Significant Impact Guidelines for the critically endangered Spiny Rice-flower (DEWHA, 2009).

Table 8.1 Targeted Flora Surveys

Species	Conservation status*		Likelihood of occurrence (pre-survey)	Survey dates	Included in scoping document
	EPBC	FFG			
Spiny Rice-flower (*Pimelea spinescens* subsp. *Spinescens*)	CR	cr	High	4–5 May 2023 5–7 June 2023 23 April 2025	Yes
White Sunray (*Leucochrysum albicans* subsp. *Tricolor*)	EN	en	High	11–13 November 2020 7–8 November 2022	No
Clover Glycine (*Glycine latrobeana*)	VU	vu	Moderate	11–13 November 2020 7–8 November 2022	No
Matted Flax-lily (*Dianella amoena*)	EN	cr	Moderate	11–13 November 2020 7–8 November 2022	No
Pale Swamp Everlasting (*Coronidium gunnianum*)	-	cr	High	7–8 November 2022 14 September 2023 23 April 2025	Yes
Small Milkwort (*Comesperma polygaloides*)	-	cr	High	7–8 November 2022	Yes

Species	Conservation status*		Likelihood of occurrence (pre-survey)	Survey dates	Included in scoping document
	EPBC	FFG			
Yarra Gum (*Eucalyptus yarraensis*)	-	cr	High	22–24 September 2020 20–23 March 2023 14 September 2023	No
Golden Cowslips (*Diuris behrii*)	-	en	Moderate	11–13 November 2020 7–8 November 2022	Yes

Table note: EPBC – CR = Critically endangered, EN = Endangered, VU = Vulnerable. FFG – cr = Critically endangered, en = Endangered, vu = Vulnerable

8.2.3.3 Fauna surveys

Targeted fauna surveys were undertaken from 2020 through to 2025 to determine the presence of significant fauna species. Targeted fauna surveys were undertaken for Commonwealth significant species identified in the desktop assessment as having potential to occur, as well as State significant species that were considered likely to occur. All fauna species listed in the scoping document under 'key species of concern' and 'other species for consideration' were surveyed for. **Table 8.2** provides an overview of the surveys undertaken and which species from the scoping document were targeted through these surveys.

All fauna surveys completed for the Project were based on the extent of potential habitat present within and adjacent to the Project Site and not restricted to the Flora Assessment Area.

Table 8.2 Targeted Fauna Surveys undertaken for Species Identified in the Scoping Document

Survey undertaken	Key species of concern	Other species for consideration
Bird utilisation surveys	Blue-winged Parrot Brown Treecreeper (south-eastern) White-throated Needletail	Black-eared Cuckoo Fork-tailed Swift Gang-Gang Cockatoo
Microbat surveys	Eastern Bent-wing Bat Southern Bent-wing Bat White-striped Freetail Bat Yellow-bellied Sheath-tailed Bat	
Brolga Level 1 and Level 2 surveys*	Brolga	
Grey-headed Flying-fox surveys	Grey-headed Flying Fox	
Targeted raptor surveys*	Black Falcon Wedge-tailed Eagle Spotted Harrier	Brown Falcon Little Eagle Nankeen Kestrel Square-tailed Kite Whistling Kite
Growling Grass Frog habitat assessment	Growling Grass Frog	

Survey undertaken	Key species of concern	Other species for consideration
Striped Legless Lizard and Tussock Skink habitat assessment	-	Striped Legless Lizard Tussock Skink
Golden Sun Moth surveys	-	Golden Sun Moth
Migratory shorebird surveys*		Australasian Bittern Latham's Snipe

*Table note: Brolga, raptor and migratory bird species were also targeted through bird utilisation surveys

The survey program was designed to optimise survey timing, methods and frequency to enable sampling of fauna species when they are most likely to occur, such as those that occur seasonally.

Bird utilisation surveys

Bird utilisation surveys are the most used method for generating quantitative data on bird use and ranked abundance of species use (including flight height) of a potential wind farm site. All bird utilisation surveys were undertaken in accordance with the requirements for a 'Level One' bird risk assessment under Wind Farms and Birds: Interim Standards for Risk Assessment (AusWEA, 2005).

Eight seasonal bird utilisation surveys were undertaken over a two-year period (see **Table 8.3**). Between 8–11 locations were established to undertake fixed point counts, with two of these located outside of the Project Site (see **Figure 8.3**). Eight fixed point locations were used for the first two surveys, with an additional three sites added for the remaining surveys due to the increased footprint of the Project Site (nine within, and two outside the Project Site).

Table 8.3 Bird Utilisation Survey Dates

Survey #	Season	Survey dates	No. survey sites
1	Spring	22–24 September 2020	8
2	Winter	12–14 July 2021	8
3	Spring	31 October – 3 November 2022	11
4	Summer	20–24 February 2023	11
5	Winter	26–27 August 2024	11
6	Spring	22–25 October 2024	11
7	Summer	11–12 February 2025	11
8	Autumn	14–16 April 2025	11

Incidental observations of bird species were recorded while travelling between point counts and during other field-based activities. Birds seen adjacent to the Project Site were also recorded. Observations of birds were classified, according to their flight height, into four categories (see **Figure 8.2**):

- Ground
- Below RSA (1–44 m)
- Within RSA (between 44–252 m)
- Above RSA (> 252 m).

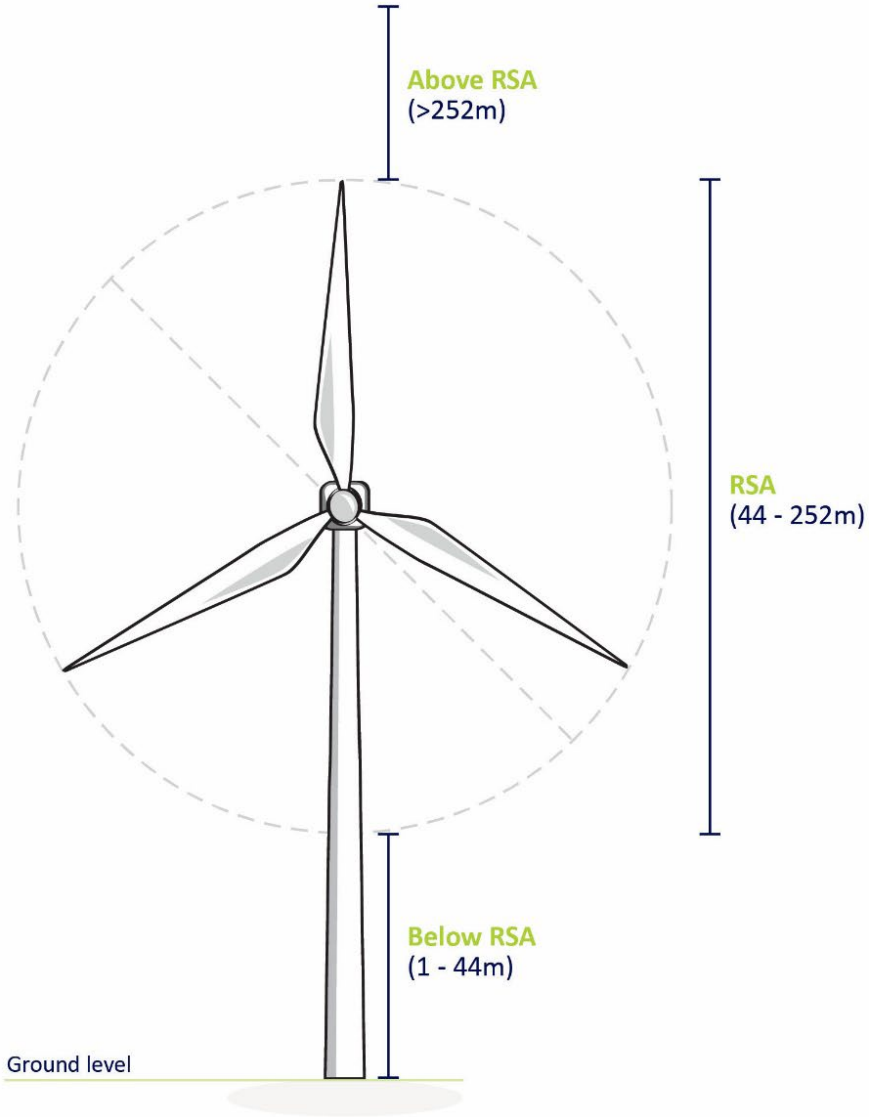


Figure 8.2 Turbine Height Categories for Bird Observations

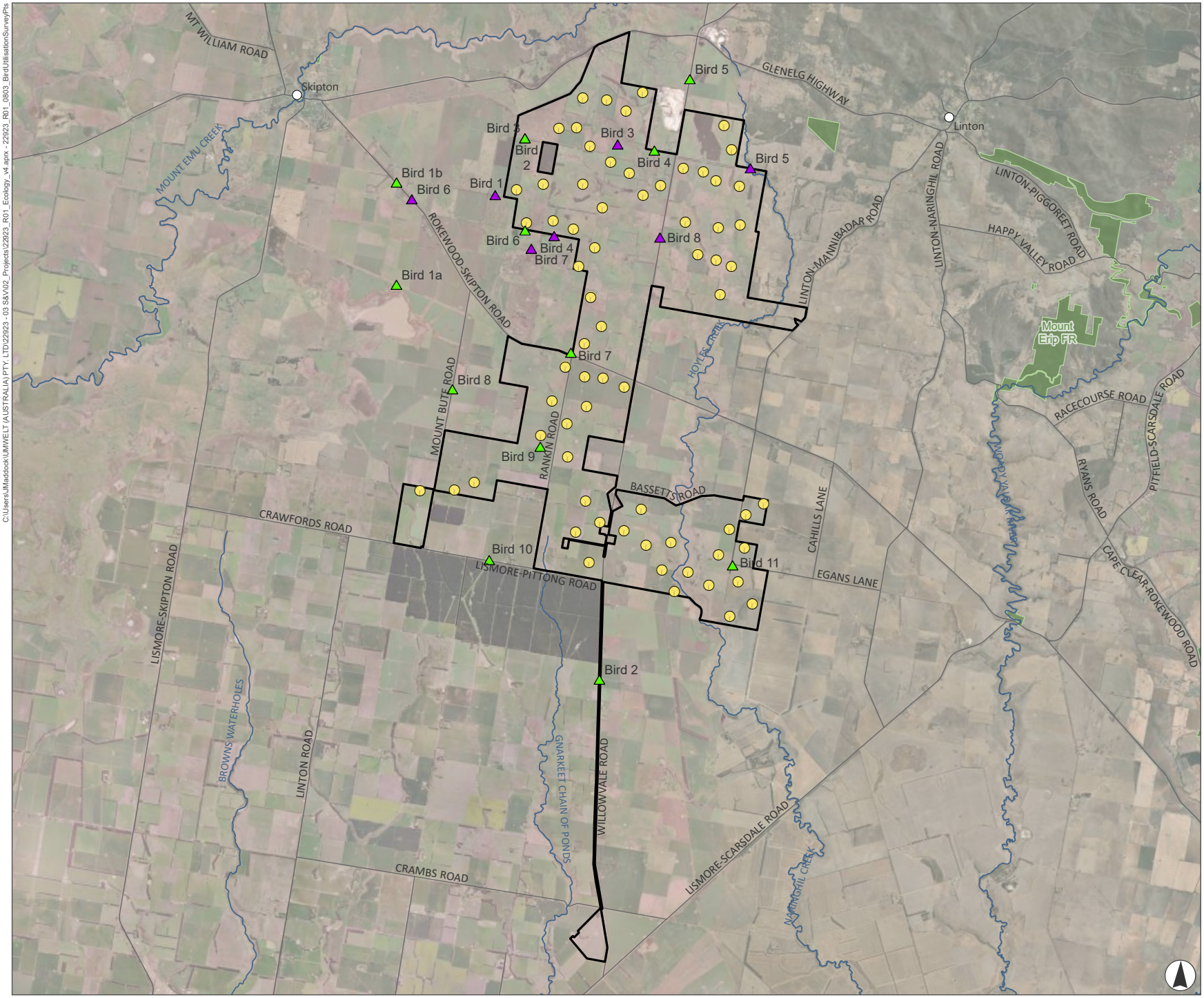
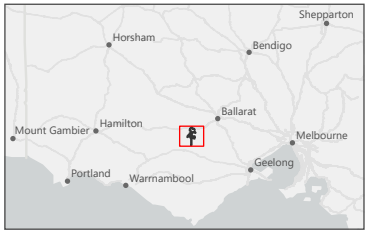


FIGURE 8.3

Bird Utilisation Survey Points

Legend

- Township
- Project Site
- Turbine
- Bird Utilisation Survey Points 2020
- Bird Utilisation Survey Points 2022
- Parks and Reserves
- Major Watercourse
- Roads



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Microbat surveys

Bat detector surveys were undertaken from 2020 to 2024 to determine the utilisation and relative frequency of utilisation of the Project Site by bat species. Bat surveys were undertaken in accordance with the Survey guidelines for Australia's threatened bats (DEWHA, 2010) and the Guidelines for bat surveys in relation to wind farm developments (Lumsden, 2007).

Echolocation calls produced by free-flying microbats were detected and recorded by automated ultrasonic bat detectors (SongMeter SM4) (**songmeters**).

Table 8.4 outlines the microbat surveys undertaken for the Project. Due to an increase in size of the Project Site, additional songmeters were deployed from Survey 3 to ensure the full range of potential habitats were surveyed. Units were placed in areas likely to be utilised by foraging bats, for example adjacent to farm dams, near native vegetation (e.g. along waterways) and planted windrows. Detectors were placed at all survey locations across the Project Site at a height of at least 1.8 m to allow call detectability over a greater height. From Survey 3 onwards, one songmeter was pulleyed to approximately 50 m above ground level on a met mast (see **Figure 8.4**).

Songmeters were programmed to record during a sunset-to-sunrise timer, with each 'survey night' defined as the full period between sunset and sunrise.

Table 8.4 Microbat SurveysUndertaken from 2020 to 2024

Deployment date	Collection date	No. nights	No. detectors	Total survey nights**
13 November 2020	16 December 2020	33	10	115
4 March 2021	7 April 2021	34	10	219
19 October 2022	17 November 2022	29	16	407
23 February 2023	27 March 2023	32	16	487
27 February 2024	26 March 2024	28	16	366
27 March 2024	6 October 2024	193*	2	386
7 October 2024	20 November 2024	44	16	621
Total				**2,601**

Table note: *Outside typical survey season. ** Some individual detectors may have varied length during the assessment period.

All nights of data were assessed to identify the bat calls, with a focus on the detection of threatened bat species including Southern Bent-Wing Bat, Eastern Bent-wing Bat and Yellow-bellied Sheath-tailed Bat.

The microbat call analysis was conducted in accordance with the Standards for reporting bat detector surveys (Australian Bat Society Incorporated undated). Call analysis involved the allocation of every data file to a species, and then counting the number of call records for each species. For some calls, the exact species could not be determined, due to the recordings being unable to be accurately distinguish between two or more species due to similarities in call characteristics – for example, between the Southern Bent-wing Bat and Little Forest Bat. These cases are referred to as a 'call complex'.

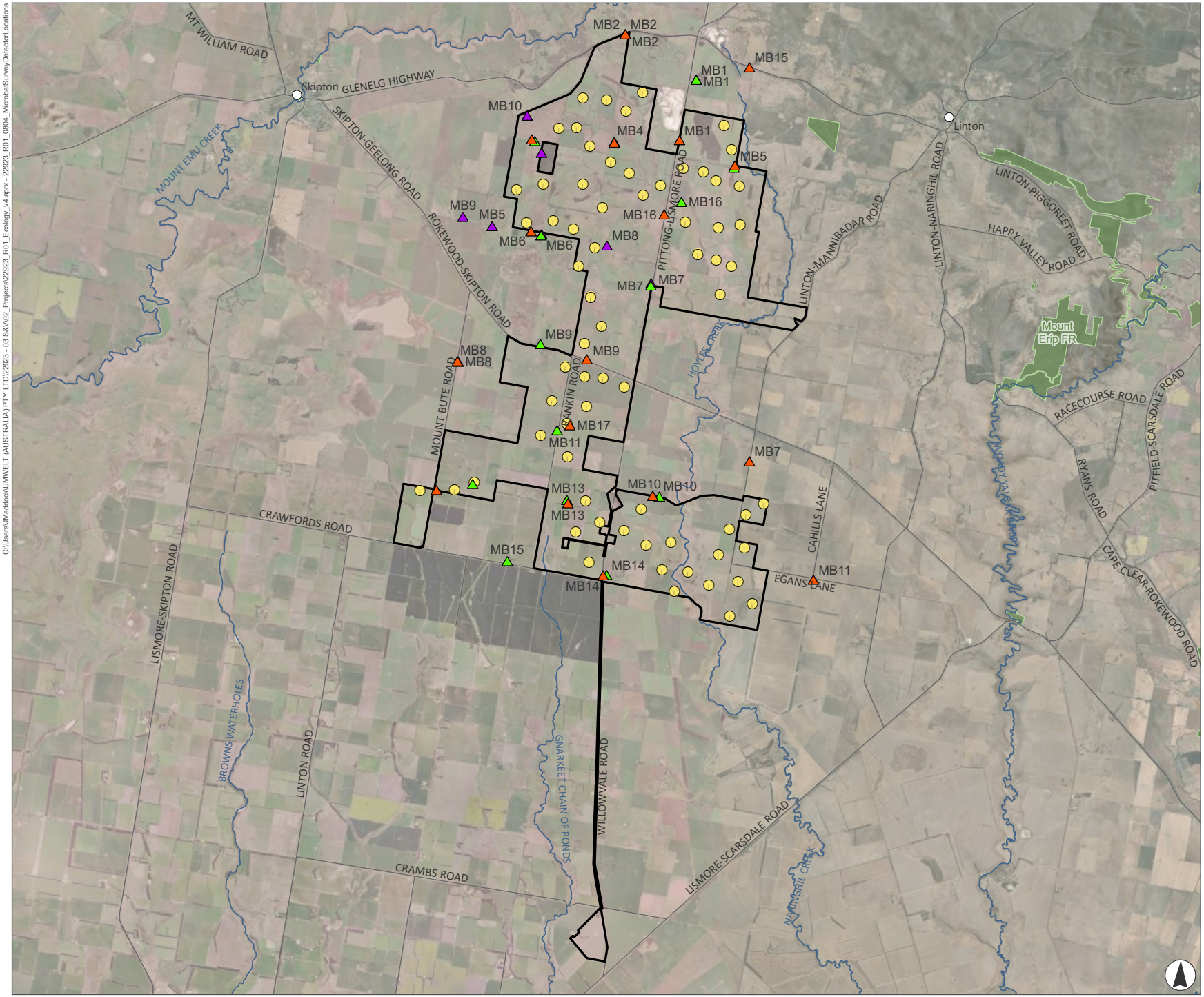
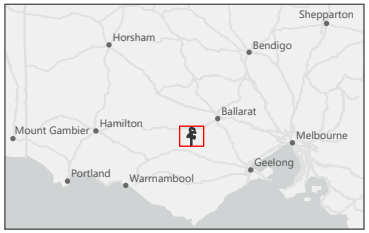


FIGURE 8.4

Microbat Survey Detector Locations

Legend

- Township
- Project Site
- Turbine
- Microbat Survey Locations 2020
- Microbat Survey Locations 2022/23
- Microbat Survey Locations 2024
- Parks and Reserves
- Major Watercourse
- Roads



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Brolga Level 1 Assessment

A Level 1 Brolga Assessment under the interim guidelines was triggered as the Project is located within the Victorian range of Brolga, and there are historical records of Brolga within the ROI. The Level 1 Assessment was undertaken using a combination of desktop assessment (see **Section 8.2.2**), community and stakeholder consultation, and field investigations, as summarised in **Table 8.5.**

Table 8.5 Summary of Brolga Level 1 AssessmentMethods

Assessment	Methods
Community consultation	Three rounds of landholder questionaries were conducted to understand if any landholders had observed Brolga on their properties, or if there is suitable habitat available. • Round One – March 2023 (landholders within the wind farm site) • Round Two – October 2023 (all residents within the ROI) • Round Three – August 2024 (all residents within the ROI) Two community information sessions were also held on 18 April 2024 (one in Skipton and one in Linton), with all residents within 5 km of the Project Site invited. These sessions included allocated time for questions and answers from an ecologist at EHP.
Stakeholder consultation	Several stakeholders were consulted to understand historical and current utilisation of Brolga, the presence of Brolga and potential habitats within the ROI. These stakeholders included Birdlife Australia, Corangamite Catchment Management Authority, regional DEECA offices, Corangamite and Golden Plains Shire Council and local Landcare groups.
Field surveys	Roaming surveys were undertaken across the ROI to determine the extent and quality of Brolga habitat, confirm the utilisation of potential nest sites and to opportunistically record any Brolga, including: • Ground based roaming surveys were undertaken during the 2021, 2022, 2023, 2024 and 2025 Brolga breeding and flocking seasons. This involved visually searching for Brolga and Brolga habitat at all potential wetland areas. • Targeted surveys for Brolga and Brolga habitat where coordinates and land access were provided, as a result of landholder consultation.
Habitat quality assessment	Habitat quality was assessed through roaming surveys for the Level 1 Assessment, as well as aerial (drone) investigations. Habitat quality was determined based on information on Brolga breeding habitats in Western Victoria, and categorised as high, moderate or low quality.

Brolga Level 2 Assessment

Based on the findings of the Level 1 Assessment, a Level 2 Assessment was triggered under the interim guidelines. This involved a combination of aerial drone surveys, habitat assessment of all waterbodies in the ROI, ground truthing of potential breeding and flocking sites and site specific Brolga flight behaviour studies at confirmed breeding and flocking wetlands, as summarised in **Table 8.6.**

The findings of the Level 2 Assessment triggered a Level 3 Assessment, which is discussed further in **Section 8.5.1.2** and **Section 8.6.6.4.**

Table 8.6 Summary of Brolga Level 2 Assessment methods

Assessment	Methods
Aerial drone surveys	Aerial drone surveys were undertaken for all waterbodies within the ROI. This included waterbodies identified through the DEECA mapped wetlands layer, waterbodies identified during Level 1 roaming surveys and landholder consultation, and waterbodies identified via drone survey. Four aerial drone survey events occurred: • 16–20 October 2023 • 19–23 August 2024 • 7–11 October 2024 • 20 November 2024. The findings of these aerial drone surveys informed the below surveys for flocking and breeding.
Flocking surveys (2024 and 2025)	Based on the findings of the Level 1 Assessment, 441 survey events across 47 calendar days took place between 28 February and 18 July 2024 to document the flight and general behaviour of Brolga during the flocking season within the ROI. Due to the known presence of Brolga at Lake Widderin (based on desktop assessments and the Level 1 Assessment), the flocking flight behaviour survey was designed as per the following procedure: • Two staff undertaking surveys at all times. • Surveys covered a wide range of times and conditions on site, including dawn and dusk. • One staff to predominantly remain at Lake Widderin (when Brolga are present), primarily along the north and north-east of Lake Widderin, making notes on the behaviour of Brolga (if present), and recording flight events (and other behaviour). • One staff to undertake roaming surveys throughout the ROI, including the south of Lake Widderin, making notes on the presence or absence of Brolga at each visited wetland from publicly accessible locations and where landholder access had been provided. • The two staff to keep in communications in relation to Brolga, including a daily determination of how many total Brolga were present at Lake Widderin and the ROI. Observations of Brolga as well as flight paths were recorded. Flocking surveys were subsequently undertaken again at Lake Widderin in 2025 between February and June. A total of 366 20-minute survey events took place.
Breeding studies	Although the drone surveys in August and December 2024 did not identify evidence of Brolga breeding, surveys were undertaken to identify and observe any Brolga flights associated with breeding. These occurred between: • 11 September and 12 December 2023, 68 survey events took place across 12 calendar days. • 24 September and 9 December 2024, 194 surveys events took place across 14 calendar days.

Grey-headed Flying-fox surveys

Grey-headed Flying-fox surveys were undertaken from 2023 to 2025, which included active searching of the sky, using torches in trees, assessing the ground for droppings and active listening for the species. Targeted surveys were undertaken by two zoologists experienced in the detection of the species during dawn, dusk and daytime at the Lismore Camp, Hexham Camp and roaming (driving and frequently stopping to survey) across the Project Site, as outlined in **Table 8.7.**

Table 8.7 Grey-headed Flying-FoxSurveys

Survey date	Site	Dawn/Dusk/Day
9 June 2023	Lismore Camp	Day
19 February 2024	Lismore Camp	Day
20 February 2024	Lismore Camp, Hexham Camp	Day
14 April 2025	Lismore Camp, Project Site	Post-dusk
29 April 2025	Lismore Camp	Day
20 May 2025	Project Site	Post-Dusk
22 May 2025	Project Site	Pre-dawn

Targeted raptor surveys

As part of the landholder questionaries conducted for the Brolga Level 1 Assessment, landholders provided information about Wedge-tailed Eagle observations (21 of 31 responses included observations of Wedge-tailed Eagle). Based on this information, seven properties within the ROI were investigated for Wedge-tailed Eagle nests between 4 and 8 November 2024.

Fixed point surveys were also undertaken at 12 locations that represented habitats within the ROI (see **Figure 8.5**). The surveys covered 36 calendar days between 9 October 2024 and 28 March 2025 and aligned with the bird utilisation survey methodology. The surveys were designed to determine raptor utilisation of habitat within the Project Site and ROI, including investigation of potential nesting sites, tracking populations, abundance and flight data.

In addition to fixed-point count surveys, incidental observations of raptors and Species of Concern (DEECA, 2025) (DEECA, 2025) were recorded while travelling between point counts and other field-based activities.

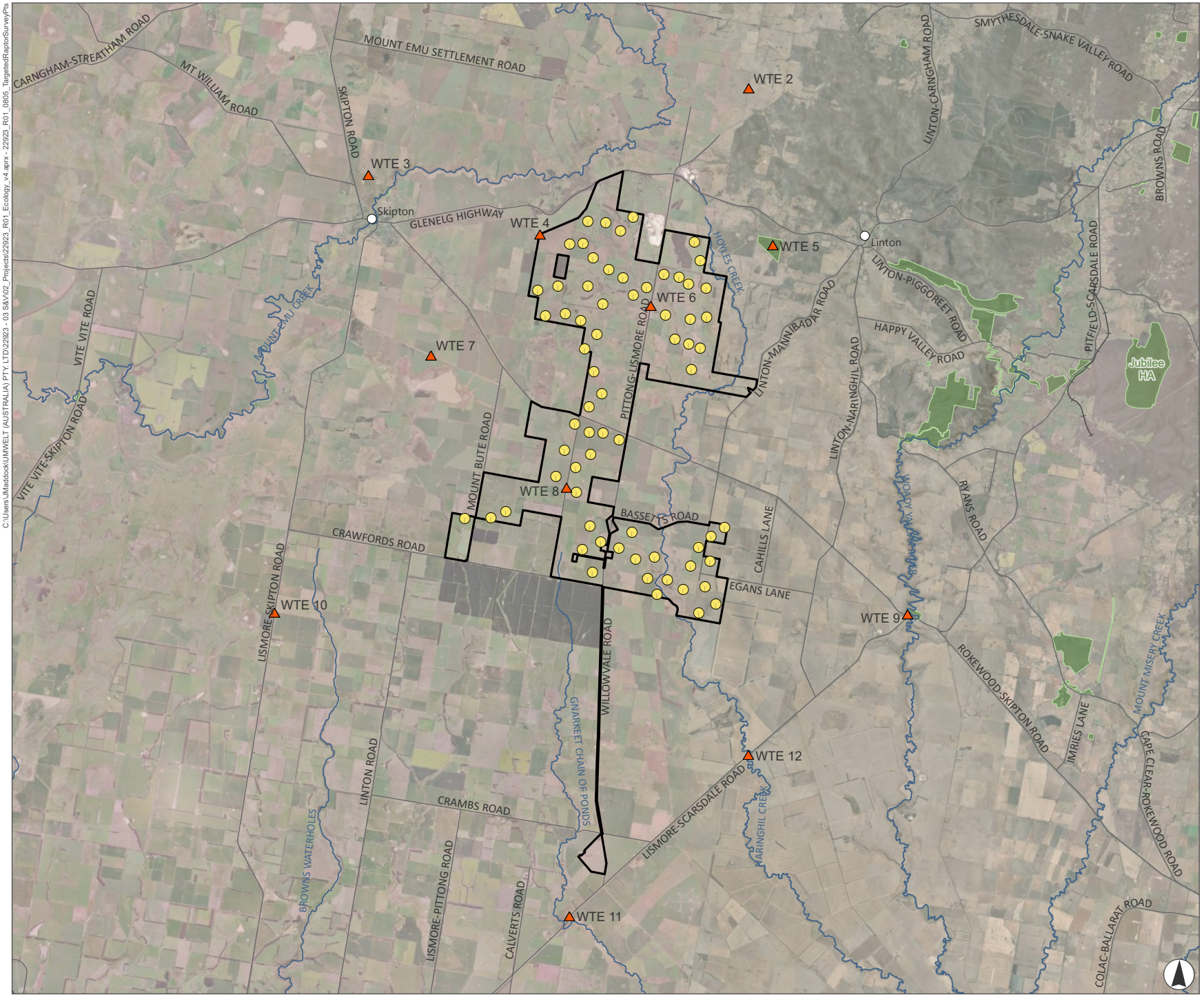

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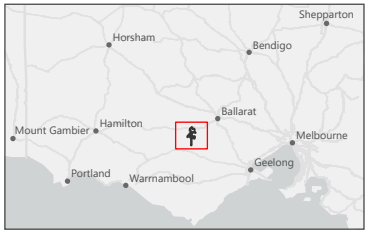
FIGURE 8.5

Targeted Raptor Survey Location Points

Legend

- Township
- Project Site
- Turbine
- Raptor survey locations 2024
- Parks and Reserves
- Major Watercourse
- Roads
- Railway



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Growling Grass Frog habitat assessment

Habitat assessments for Growling Grass Frog were undertaken concurrently with the native vegetation assessments on 8 September 2020, 20 to 23 March 2023, and 7 June 2023. Potential habitats, including mapped wetlands and creeks, were assessed for water flow, water depth, bare ground, open water, emergent, submerged, fringing and floating vegetation.

Striped Legless Lizard and Tussock Skink habitat assessment

Habitat assessments for Striped Legless Lizard and Tussock Skink were undertaken concurrently with the native vegetation assessments on 8 September 2020, 20 to 23 March 2023, and 7 June 2023. Habitat assessments were undertaken for all areas of vegetation within the Flora Assessment Area, with consideration of relevant conservation advice and species information that outlines key habitat requirements for both species. Key habitat traits that were assessed include presence of cracking clay soils, rocks and tussock grasses, the height of vegetation, management practices of the vegetation, and the presence of Toowoomba Canary-grass *Phalaris aquatica*. Habitat connectivity was also assessed, including presence of barriers to surrounding areas of suitable habitat.

Targeted surveys were not undertaken for either species due to the low quality of habitat present and fragmented nature of observed habitat (see **Section 8.3.4.9** for further details on the habitat assessment findings).

Golden Sun Moth targeted surveys

Targeted surveys for Golden Sun Moth were undertaken over three survey seasons for 2022/2023, 2023/2024 and 2024/2025 (12 separate surveys) within areas of potential habitat located within the Project Site in publicly accessible land (i.e. road reserves), as outlined in **Table 8.8**. Areas of potential habitat on public land that coincided with the construction footprint were surveyed (+/- 50 m either side).

Areas of potential Golden Sun Moth habitat proposed to be impacted were identified during the targeted flora species surveys and native vegetation assessments, and were the focus of targeted surveys conducted in the 2022/2023 season for the species. The 2023/2024 surveys focused on the Willowvale Road corridor, Rankin Road corridor and key intersections along the updated construction footprint where habitat was identified. The 2024/2025 surveys were repeated within the same areas as 2023/2024, in addition to some narrow, discrete roadside habitats (see **Figure 8.6**).

Survey methods followed the Significant Impact Guidelines for the Critically Endangered Golden Sun Moth (DEWHA, 2009). The species was confirmed flying at known reference sites in western Victoria through a review of the Golden Sun Moth diary circulated by the Ecological Consultants Association of Victoria, around the time that targeted surveys were being undertaken.

Table 8.8 Golden Sun Moth Targeted Survey Dates

Survey season	Survey No.	Date	Reference site
2022/2023	1	19 December 2022	Broadmeadows Valley Park
	2	7 January 2023	Broadmeadows Valley Park
	3	13 January 2023	Beaufort
	4	17 January 2023	Mount Mercer

Survey season	Survey No.	Date	Reference site
2023/2024	5	17 December 2023	Mount Mercer
	6	23 December 2023	Merrimu
	7	29 December 2023	Mount Mercer
	8	5 January 2024	Cressy
2024/2025	9	13 December 2024	Merrimu
	10	18 December 2024	Merrimu
	11	20 December 2024	Stawell
	12	6 January 2025	Merrimu

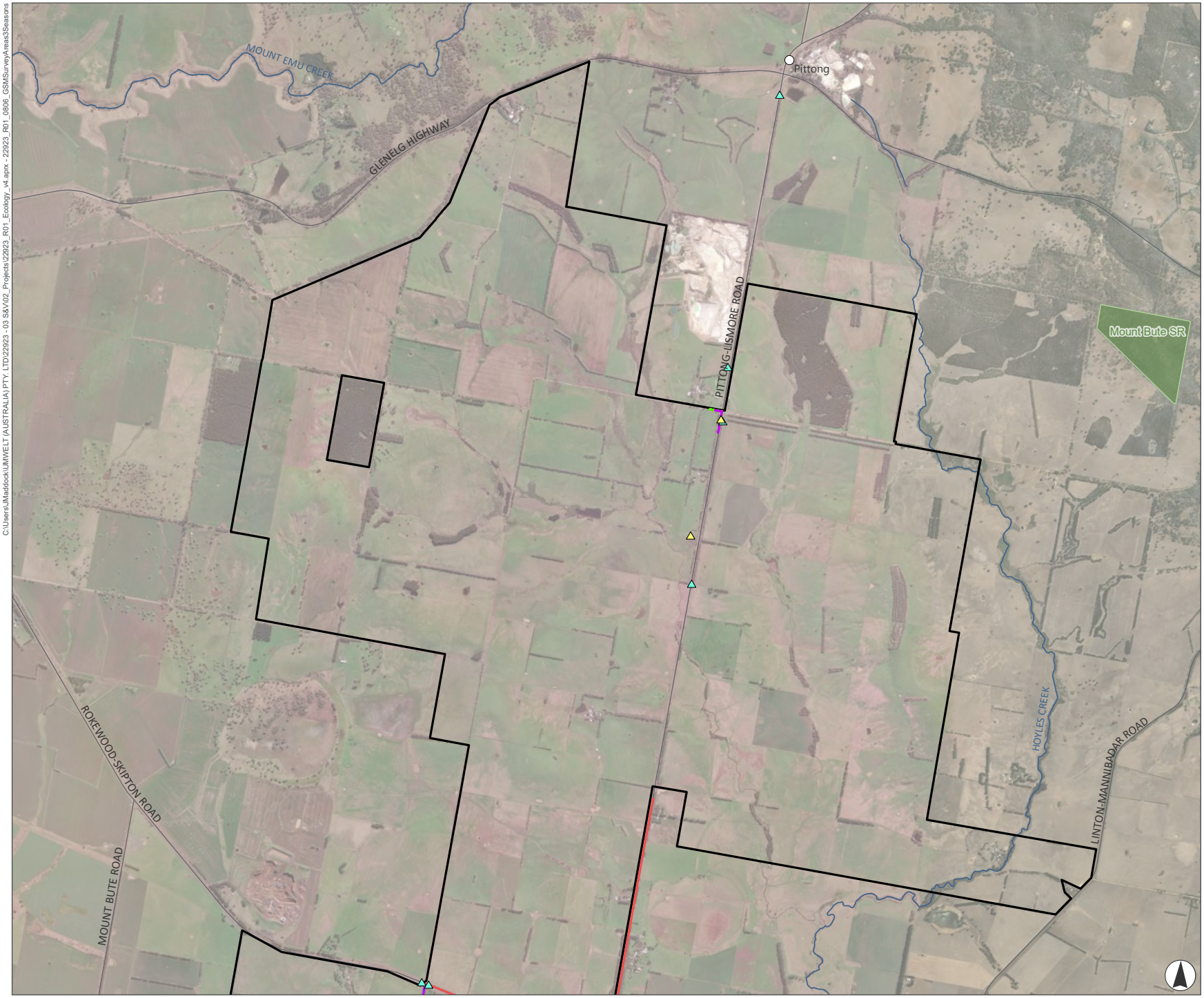


FIGURE 8.6

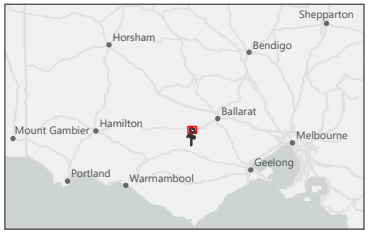
Golden Sun Moth Survey Areas Over Three Seasons

Legend

- Township
- Project Site
- Parks and Reserves
- Major Watercourse
- Roads
- Golden Sun Moth survey (2022/23)
- Golden Sun Moth survey (2023/24)

Golden Sun Moth Survey Track

- 13/12/2024
- 18/12/2024
- 20/12/2024
- 27/12/2024



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Migratory bird surveys

The 205 wetlands mapped within the ROI investigated as part of the Brolga Level 1 and Level 2 assessments, were also assessed for potential Australasian Bittern and Latham's Snipe habitat (both species identified in the scoping document).

Nocturnal surveys for wetland birds were undertaken in 2020 and 2021 using the following methodology:

- Nocturnal surveys were undertaken at Lake Widderin over six nights on 11–12 November 2020, 3–5 March 2021, and 9 March 2021 (the beginning and the end of the non-breeding season for migratory species). This is consistent with the survey guidelines in non-tidal areas outlined in 'Industry guidelines for avoiding, assessing and mitigating impacts on EPBC Act listed migratory shorebird species' (Commonwealth of Australia, 2017). These surveys were undertaken at an optimal time for detecting Australasian Bittern (between mid-October and end of March).
- The perimeter of DEECA modelled wetlands within the Project Site (six wetlands in total) were visually assessed using binoculars and a spotlight, observers recorded all bird species seen or heard.
- Call playback was undertaken at each wetland during surveys in the two hours after sunset. Bird calls were broadcast for two minutes, followed by five minutes of quiet listening. The procedure was repeated for targeted bird species (i.e., Australasian Bittern, Australasian Shoveler, Latham's Snipe, Eastern Great Egret, Glossy Ibis, Common Greenshank).

Daytime searches for wetland and migratory birds were also undertaken at areas containing potential habitat for wetland birds concurrently with the fixed-point count and roaming survey methods used during bird utilisation surveys.

8.3 Existing Conditions and Survey Results

This section provides an overview of the existing conditions and high-level survey results as they relate to biodiversity, with a focus on native vegetation and habitat types, TECs, and significant flora and fauna species.

8.3.1 Native Vegetation

Most of the landscape within the Project Site has been significantly modified for agricultural use, including cropping of cereals, grains and canola and paddocks over sown with exotic species for grazing.

Current and past land use has resulted in much of the native vegetation on private land being removed, with most of the native vegetation restricted to linear road reserves or isolated clusters. Native scattered trees were common, retained by farmers in paddocks or along sections of degraded road reserves.

The Project Site spans both the Central Victorian Uplands (**CVU**) and Victorian Volcanic Plains (**VVP**) bioregions. These bioregions are further broken down into EVCs which are classifications of groups of native plants (plant communities) that commonly grow together.

Table 8.9 provides a summary the native vegetation recorded in the Flora Assessment Area, across six EVCs.

Table 8.9 EVCs Recorded in the Flora Assessment Area

EVC	Bioregion	Bioregional conservation status	Extent recorded in the Assessment Area (ha)
Plains Grassy Woodland (EVC 55)	VVP	Endangered	2.914
Plains Grassy Wetland (EVC 125)	CVU	Endangered	0.01
Plains Sedgy Wetland (EVC 647)	CVU	Endangered	0.550
Heavier soils Plains Grassland (EVC 132_61)	VVP	Endangered	6.029
Grassy Woodland (EVC 175)	CVU	Endangered	5.090
Heathy Dry Forest (EVC 20)	CVU	Least Concern	1.210
Total			**15.80**

8.3.1.1 Hollow-bearing trees

The presence of hollow-bearing trees throughout the Project Site was noted during native vegetation assessments and threated flora and fauna surveys. The majority of the Project Site is dominated by grassland and wetland vegetation, which inherently lacks tree cover and therefore does not support hollow-bearing trees. Hollow bearing trees are important habitat resources for common species, such as Little Corella, Long-billed Corella, and Galah, but also critical for significant species such as Blue-winged Parrot and Brown Treecreeper, all of which were recorded during the bird utilisation surveys.

The treed areas in the north of the Project Site were mainly associated with heathy vegetation, which generally does not support suitable hollows for larger birds. In addition, planted trees across the Project Site were primarily Cypress *Cupressus* sp. and Sugar Gum, which were generally observed during the field assessments not to contain medium to large hollows. Overall, the presence of hollow-bearing trees on-site was limited, with planted trees lacking appropriate structure.

8.3.2 Threatened Ecological Communities

Two threatened ecological communities were recorded during native vegetation surveys in the Assessment Area, one listed under the EPBC Act and one listed under the FFG Act (see **Table 8.10**).

Table 8.10 TECs Recorded in the Assessment Area

TEC	Conservation status		Area (ha) recorded	Occurrence
	EPBC	FFG		
Natural Temperate Grassland of the Victorian Volcanic Plain (**NTGVVP**)	CR		4.06	15 patches of this TEC were recorded within the Willowvale Road reserve, with one patch along Rokewood-Skipton Road. These corresponded with patches of *Heavier soils* Plains Grassland (EVC 132_61). All 15 patches along Willowvale Road contained a thick cover of Kangaroo Grass, with limited species diversity (see **Photo 8.1** and **Photo 8.2**). The patch along Rokewood – Skipton Road contained a higher diversity of herbs, but had a slightly higher weed presence.

TEC	Conservation status		Area (ha) recorded	Occurrence
	EPBC	FFG		
				The Willowvale Road reserve would have once supported a contiguous corridor of NTGVVP, however has become fragmented due to the increased cover of exotic grasses in areas of the road reserve. This has resulted in fragmented patches of NTGVVP occurring along the road reserve, ranging in size from 0.055 ha up to 1.109 ha with 0.05 ha being the minimum size threshold for NTGVVP (DEWHA, 2008). The condition of these patches was classified as low to moderate.
Western (Basalt) Plains Grassland Community (**WBPG**)		Th	6.03	Of the 64 patches of *Heavier soils* Plains Grassland (EVC 132_61) mapped within the Assessment Area, 63 meet the criteria for classification as the community, due to the presence of native grasses and several native herbs. These patches were mapped within sections of road reserves throughout the Assessment Area. The condition of these patches of WBPG was classified as low to moderate quality.
Total			**10.09**	

Photo 8.1 **NTGVVP located along the western side of Willowvale Road dominated by Kangaroo Grass (EHP 23/04/25)**

Photo 8.2 **NTGVVP located along the western side of Willowvale Road dominated by Kangaroo Grass (EHP 23/04/25)**

8.3.3 Threatened Flora Species

Three threatened flora species were recorded within the Assessment Area (See **Table 8.11**).

Individuals from the *Orchidaceae* family that are listed as General Protected Flora under the FFG Act were recorded within the Assessment Area and broader Project Site, including Slender Sun-orchid *Thelymitra pauciflora*, Common Onion-orchid *Microtis unifolia* and individuals from the *Diuris* genus.

Table 8.11 Threatened Flora Species Recorded within the Assessment Area

Species	Conservation status		Occurrence
	EPBC	FFG	
Spiny Rice-flower (*Pimelea spinescens* subsp. *spinescens*)	CR	cr	Seven Spiny Rice-flower were recorded within the Assessment Area along Rankin Road, south of Hendersons Road. The species was recorded within patches of *Heavier soils* Plains Grassland of relatively low quality and low diversity, supporting the native Kangaroo Grass but often having a high cover of the exotic Toowoomba Canary-grass.
Pale Swamp Everlasting (*Coronidium gunnianum*)	-	cr	A total of 7 Pale Swamp Everlasting individuals were recorded at two locations within the Assessment Area, with six individuals observed along Rankin Road and another individual observed along Willowvale Road. Due to the spreading nature of the plant and presence amongst the high biomass of grass, it was difficult to determine if one or several individuals occurred at this location on Willowvale Road. The extent of the patch was therefore mapped. Both locations where the species was observed were growing within a modified road drain.
Yarra Gum (*Eucalyptus yarraensis*)		cr	One individual of the species was observed within the Assessment Area during the vegetation assessments as a large scattered tree, located adjacent to a proposed WTG hardstand.

8.3.4 Threatened and Migratory Fauna Species

Nine threatened and/or migratory fauna species listed under the EPBC Act and/or FFG Act were recorded during Project surveys, with an additional two threatened fauna species having the potential to occur within the Project Site.

Table 8.12 Threatened and Migratory Fauna Species Recorded during Project Surveys or with a Moderate to High Likelihood of Occurence

Species	Conservation status		Recorded during surveys	Occurrence
	EPBC	FFG		
Blue-winged Parrot (*Neophema chrysostoma*)	VU	-	✓	Blue-winged Parrot was recorded outside and on the border of the Project Site on eight occasions during bird utilisation surveys, totalling 27 individuals. See **Section 8.3.4.2**.
Brown Treecreeper (south-eastern) (*Climacteris picumnus victoriae*)	VU		✓	Brown Treecreeper was recorded within and outside of the Project Site on four occasions during 2023 surveys, each of a single individual. Three of these four detections were based on vocalisations only. See **Section 8.3.4.3**.

Species	Conservation status		Recorded during surveys	Occurrence
	EPBC	FFG		
White-throated Needletail (*Hirundapus caudacutus*)	VU/Mi		✓	White-throated Needletail was not recorded during any bird utilisation surveys, however, eight birds were recorded outside of the Project Site incidentally during targeted raptor surveys. See **Section 8.3.4.4**.
Sharp-tailed Sandpiper (*Calidris acuminata*)	Mi		✓	Six Sharp-tailed Sandpiper individuals were recorded on one occasion during bird utilisation surveys, only at the Lake Widderin reference location (not inside the Project Site). See **Section 8.3.4.12.**
Brolga (*Antigone rubicunda*)	-	en	✓	Fifty-five observations of Brolga were recorded during bird utilisation surveys in 2020 and 2021, all at ground level or below the RSA. Brolga were observed foraging near survey points 6 and 7. Six Brolga individuals were recorded during targeted raptor surveys (five at Lake Widderin in December 2024 and one north of Site 4 (**Figure 8.5**) in March 2025). Brolga were observed at five wetlands outside of the Project Site during roaming surveys in 2023, but no breeding activity was recorded. Nineteen Brolga were recorded at Lake Widderin during a flocking event in 2024. 26 Brolga individuals were recorded across 14 occasions during 2025 flocking surveys. All records were west, north and south of the Project Site. No flocking activity was recorded.
Eastern Bent-wing Bat (*Miniopterus orianae oceansis*)	-	cr	✓	One recorded bat call from ground survey location 5, in the north-east of the Project Site, met the criteria for Eastern Bent-wing Bat. See **Section 8.3.4.6**. Several other recorded calls belonged to the call complex for both Eastern Bent-wing Bat and Southern Bent-wing Bat.
Black Falon (*Falcon subniger*)	-	cr	✓	One Black Falcon was recorded on three occasions outside of the Project Site near Lake Widderin during targeted raptor surveys. See **Section 8.3.4.7**.
Little Eagle (*Hieraaetus morphnoides*)	-	vu	✓	Two Little Eagle individuals were recorded outside of the Project Site on one occasion during bird utilisation surveys, both within the RSA. One Little Eagle individual was also recorded north-west of the Project Site and below the RSA during targeted raptor surveys. See **Section 8.3.4.7**.

Species	Conservation status		Recorded during surveys	Occurrence
	EPBC	FFG		
Grey-headed Flying-fox (*Pteropus poliocephalus*)	VU	vu	✓	Grey-headed Flying-fox was recorded at the Lismore Camp (approximately 20 km south of the Project Site) in 2023 and 2025, and at the Hexham Camp (approximately 60 km south-west of the Project Site) in 2024. On one day (14 April 2024), up to 55 Grey-headed Flying-fox were recorded approximately 6 km south-west of the Project Site during post-dusk surveys. See **Section 8.3.4.8.**
Striped Legless Lizard (*Delma impar*)	VU	en	X	Striped Legless Lizard and Tussock Skink are conservatively considered to have a moderate likelihood of occurrence. There are fragmented areas of suitable habitat within the Assessment Area, however it is unlikely that a population of Striped Legless Lizard or Tussock Skink occurs within the Assessment Area. See **Section 8.3.4.9.**
Tussock Skink	-	En	X	

Table note: EPBC – Mi = Listed migratory, CR = Critically endangered, EN = Endangered, VU = Vulnerable. FFG – cr = Critically endangered, en = Endangered, vu = Vulnerable

In addition to the threatened species identified above, Wedge-tailed Eagle, Spotted Harrier and White-striped Freetail Bat were also recorded during project surveys. Whilst these species are not listed (under the FFG or EPBC Act), these species have been considered in this assessment as they are listed in the scoping document as key species of concern. See **Section 8.3.4.7** for further details on raptor survey results.

The following species included in the scoping document as key species of concern, were not identified during surveys but have been considered in this assessment:

- Growling Grass Frog
- Southern Bent-wing Bat
- Yellow-bellied Sheath-tailed Bat.

It is noted that no confirmed Yellow-bellied Sheath-tailed Bat calls were recorded, however one recorded call was classified as 'potential' Yellow-bellied Sheath-tailed Bat.

8.3.4.1 Bird utilisation survey results summary

Ninety-nine bird species were recorded during bird utilisation surveys, consisting of 6,560 individual birds. Four threatened species were recorded (as identified in **Table 8.12**):

- Blue-winged Parrot (*Neophema chrysostoma*) – Vulnerable under the EPBC Act (See **Section 8.3.4.2**)
- Brown Treecreeper (*Climacteris picumnus victoriae*) – Vulnerable under the EPBC Act (See **Section 8.3.4.3**)
- Brolga (*Antigone rubicunda*) – Endangered under the FFG Act (See **Section 8.3.4.5**)
- Little Eagle (*Hieraaetus morphnoides*) – Vulnerable under the FFG Act (See **Section 8.3.4.7**).

No birds were observed flying above RSA during bird utilisation surveys, and only 3.1% of all observed flights were at RSA height. Most were recorded flying below RSA heights or at ground level (92.3% of all observed flights). The height of 4.6% of flights could not be observed, where the species was heard but obscured from vision.

Several introduced and common bird species were recorded, with the Australian Magpie and Little Raven the most frequently recorded. A total of 10 raptor species were observed, including Wedge-tailed Eagle, Brown Falcon, Whistling Kite and Nankeen Kestrel (all of which are not listed under the EPBC Act or FFG Act). Raptors in general accounted for a low percentage (2.1%) of birds recorded during bird utilisation surveys.

The predicted species richness estimate for the point count surveys was 99.36 species, which converts to a completeness of over 99% and means the survey effort has captured a thorough representation of the true species richness of the ROI.

Incidental observations were recorded during the bird utilisation surveys when travelling between fixed-point survey locations. These records were limited to raptors and Species of Concern (DEECA, 2025) (DEECA, 2025).

8.3.4.2 Blue-winged Parrot

Blue-winged Parrot is a small, partly migratory parrot found across south-eastern Australia, including Tasmania, coastal Victoria, and parts of South Australia and New South Wales (Higgins 1999). Blue-winged Parrot occurs in a wide range of open habitats, including heathy woodland, saltmarsh, grassland, farmland, and coastal scrub, and are rarely recorded in closed forest types. They forage primarily on the ground, feeding on the seeds of native and exotic grasses and herbs, while also utilising cleared agricultural land, young pine plantations, and recently logged forest areas, especially where grassy or herbaceous ground layers are present.

There are several historical records of Blue-winged Parrot within the ROI, with the closest record to the wind farm site from 1998 which borders the HVP plantation to the south (see **Figure 8.7**). There are no VBA breeding records within the ROI, with the closest record over 60 km east of the Project Site in Brisbane Ranges National Park.

During bird utilisation surveys, Blue-winged Parrot was recorded on eight occasions, totalling 27 individuals (see **Table 8.13** and **Figure 8.7**). All records were below the RSA.

Table 8.13 Blue-winged Parrot Observations During Bird Utilisation Surveys

Survey #	Season	BUS site	No. of individuals	Vertical height (m)
3	Spring	2	1	15
4	Summer	3	3	5
4	Summer	11	2	5
5	Winter	10	4	0 (Ground)
5	Winter	10	10	0 (Ground)
6	Spring	5	2	1
6	Spring	1	4	Heard only
8	Autumn	5	1	1

Based on the observations during bird utilisation surveys, Blue-winged Parrot is known to opportunistically utilise habitat within the Project Site. The Project Site provides open space areas that would be used by Blue-winged Parrot for foraging and dispersal, however the presence of nesting habitat is unlikely. The species typically breeds in tree hollows in eucalypt woodlands found in Tasmania and along the Victorian coastline. Therefore, the Project Site forms part of the species' mainland wintering range, likely to be limited to transient foraging and flight activity rather than long-term residence.

Blue-winged Parrot breed primarily in Tasmania but is known to also breed in coastal south-eastern South Australia and southern Victoria (DCCEEW, 2023). In Victoria, Blue-winged Parrot breed mainly in heathy forests and woodlands and in wetter forests soon after fire or logging (Emison, et al., 1987) (DCCEEW, 2023). An 'occupied nest' was recorded from Clarkesdale Bird Sanctuary (ALA 2026), approximately eight kilometres east of the Project Site. However, given the typical breeding behaviour of the species, the lack of breeding activity observed on-site during observations of the species, and the lack of hollow-bearing trees identified, Blue-winged Parrot are considered highly unlikely to utilise the Project Site for breeding.

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FIGURE 8.7

Blue-winged Parrot Historical Records and Observations From Project Bird Utilisation Surveys

Legend

- Township
- Project Site
- ROI - 10km
- Turbine
- Blue-winged Parrot Survey Records
- Historical records of Blue-winged Parrot
- Bird Utilisation Survey Points 2020
- Bird Utilisation Survey Points 2022
- Parks and Reserves
- Major Watercourse
- Roads
- Railway

0 2.5 5

Kilometres

Scale 1:250,000 at A4
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Image Source: ESRI Basemap (2026) | **Data Source:** EHP (2026), VBA (2025)

8.3.4.3 Brown Treecreeper (south-eastern)

The Brown Treecreeper (south-eastern) subspecies (herein referred to as Brown Treecreeper) occurs from the Grampians in western Victoria, through central New South Wales and into the Bunya Mountains in Queensland (DCCEEW, 2023). Brown Treecreeper typically forage both on the ground and in wooded habitats, often relying on fallen timber for feeding, with the south-eastern subspecies spending more time foraging at ground level than other treecreeper species.

There are several historical records of Brown Treecreeper within the ROI, with the nearest record approximately 5.5 km east of the Project Site, bordering Mount Erip Nature Conservation Reserve. Brown Treecreeper was more frequently recorded in structurally complex habitat, such as Mount Erip Nature Conservation Reserve, which aligns with the species' typical foraging and feeding behaviour.

Brown Treecreeper is known to inhabit open forest and woodland areas. The Project Site therefore provides limited habitat for the species due to the lack of open forest and woodland areas as a result of extensive disturbance from agricultural activities. However, suitable habitat does exist within the broader ROI, and it is likely that the species will utilise habitats within the ROI and may fly at RSA height across the Project Site.

During bird utilisation surveys, Brown Treecreeper was recorded on four occasions, each of a single individual, with three of the four observations based on vocalisation only (see **Table 8.14** and **Figure 8.8)**. The species was only recorded during the fourth bird utilisation survey in February 2023, with no records of the species during 2024/2025 bird utilisation surveys. All records were below the RSA.

Table 8.14 Brown Treecreeper Observations During Bird Utilisation Surveys

Survey #	Season	BUS site	No. of individuals	Vertical height (m)
4	Summer	6	1	5*
4	Summer	11	1	10
4	Summer	10	1	5*
4	Summer	10	1	5*

Table note: * = estimated height, individual was heard only

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FIGURE 8.8

Brown Treecreeper Historical Records and Observations From Project Bird Utilisation Surveys

Legend

- Township
- Project Site
- ROI - 10km
- Turbine
- Brown Treecreeper Survey Records
- Historical records of Brown Treecreeper
- Bird Utilisation Survey Points 2020
- Bird Utilisation Survey Points 2022
- Parks and Reserves
- Major Watercourse
- Roads
- Railway

0 2.5 5

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8.3.4.4 White-throated Needletail

White-throated Needletail is a long-distance migratory swift that breeds in the forests of north-east Asia and overwinters in the southern hemisphere, primarily Australia. The species relies on aerial insect prey and is highly adapted to a life on the wing, undertaking vast annual migrations that span thousands of kilometres. White-throated Needletails are known to forage ahead of or alongside storm fronts, using thermals and uplift for energy efficient flight (Higgins, 1999).

White-throated Needletail typically arrive in Australia late November and depart by March. Individuals spend most of their time in flight, regularly flying at over 1 km above the ground and are rarely observed perched or roosting in Australia (Vanderduys, et al., 2024).

There are several historical records of White-throated Needletail within the ROI, with the nearest records approximately 5 km from the Project Site (both to the east and north-west).

As the species is an aerial insectivore, there is limited understanding of its utilisation of trees for foraging and roosting in Australian habitats. While potentially suitable habitat for the species is present within the ROI, in the form of forested areas containing large hollow-bearing trees and ridgelines, the relative importance of this habitat for the species in the wider region and Victoria is not well understood.

White-throated Needletail was not recorded during bird utilisation surveys, however an incidental observation of eight White-throated Needletail was recorded during targeted raptor surveys on 26 February 2025. The birds were observed flying at approximately 70 m in height, approximately 4 km to the north-east of the Project Site (see **Figure 8.9**).

It is acknowledged this species is difficult to detect during surveys, with the species often under-detected during human observer-based surveys (Rogers 2025). Based on the presence of feeding habitat, historical records and the records of White-throated Needletail turbine mortality strikes in Western Victoria at other wind farms (and across all of Victoria with at least 12 records recorded at 6 wind farms since 2016), the species has the potential to utilise the Project Site and is at risk of collision with turbines (DEECA, 2025).

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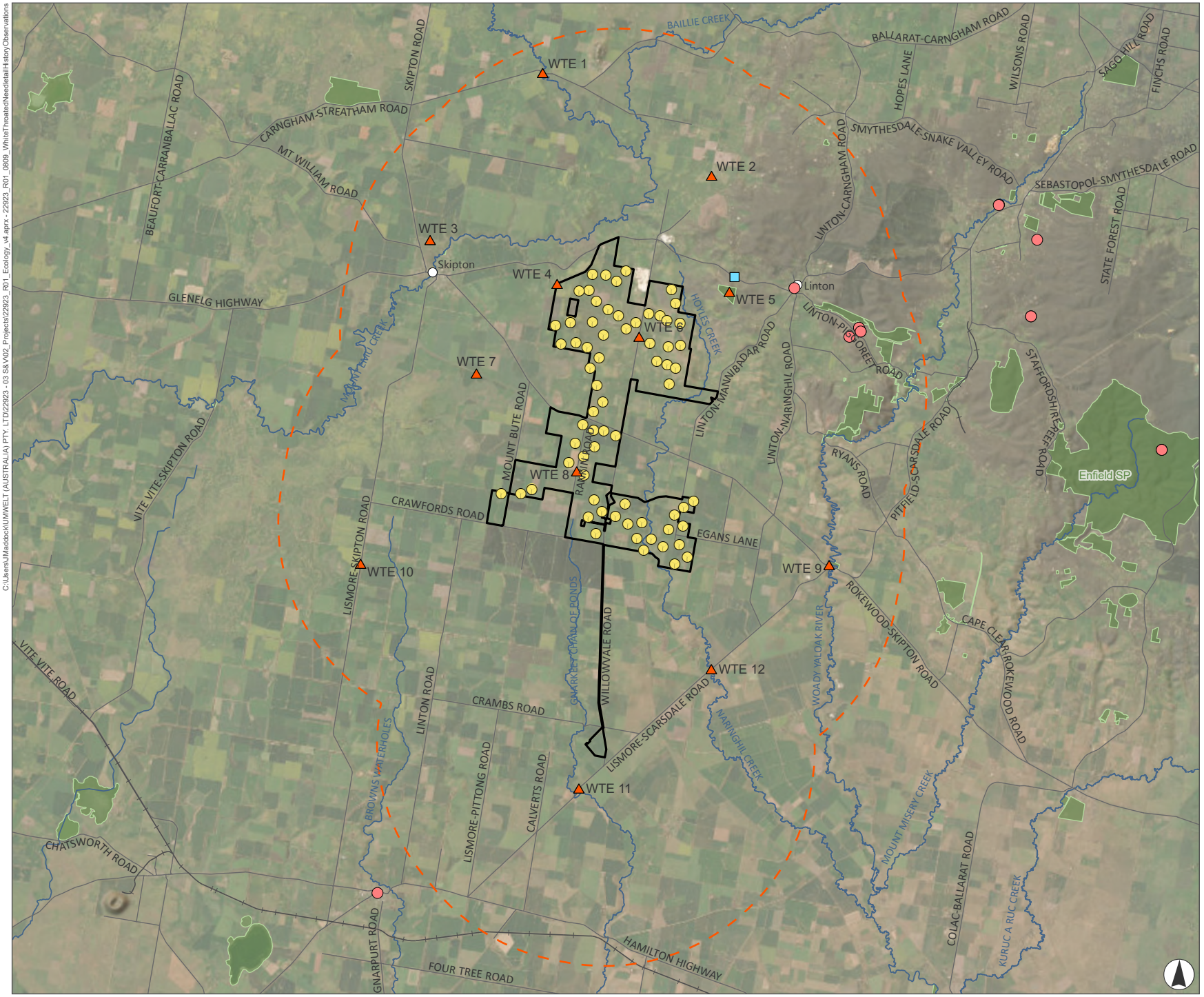

Image Source: ESRI Basemap (2026) | **Data Source:** EHP (2026), VBA (2025)

FIGURE 8.9

White-throated Needletail Historical Records and Recorded During Targeted Raptor Surveys

Legend

- Township
- Project Site
- ROI - 10km
- Turbine
- White-throated Needletail Survey Records
- Historical records of White-throated Needletail
- Raptor survey locations 2024
- Parks and Reserves
- Major Watercourse
- Roads
- Railway

0 2.5 5

Kilometres

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8.3.4.5 Brolga

Level 1 Assessment findings

Historical records

Several breeding records were identified in databases searches during the desktop assessment. The Victorian Biodiversity Atlas (**VBA**) identified 1,912 Brolga records within the ROI, however only 23 (1.2%) were within 4 km of the wind farm site boundary. Brolga records were concentrated to the north, west and south-west of the wind farm site (see **Figure 8.10**). This distribution aligns with the location of wetland habitats throughout the landscape, which are preferred habitat for Brolga. These wetlands are considerably more abundant north and west of the Project Site.

Of the 1,912 records, 145 were identified as breeding records. Two of which are located within 4 km of the wind farm boundary at Site 55 (both records from the exact same location and both in 1984), a DEECA mapped wetland on the wind farm site boundary (see **Figure 8.10**).

Each Brolga breeding record was analysed for suitability as a Brolga breeding site, which resulted in 21 VBA breeding record sites determined within the ROI (following the DEECA provided protocols for addressing historical Brolga breeding records).

Records of 10 or more Brolga can indicate potential for a flocking site. Seven records from the VBA in the ROI contain 10 or more Brolga. There are also three records in Sheldons database, and six records in the Atlas of Living Australia databases, that contain 10 or more Brolga within the ROI. These database records were spread across five different wetlands sites and one site not attributable to a wetland.

Based on these database records none of the sites meet the criteria that defines a flocking site under the interim guidelines, as the records occur within the same month and year. One of the three criteria used to define a flocking site under the interim guidelines is for Brolga to be recorded in more than one month (i.e. sites where Brolga flock for periods greater than one day or week to indicate a site traditionally used for majority of the flocking season).

However, one of these six sites is Lake Widderin, which was subsequently defined as a flocking site following landholder consultation.

Landholder questionnaire and stakeholder consultation

A total of 58 responses were received from the landholder questionnaires. This includes some landholders who responded to multiple questionaries. Findings of the three rounds of landholder questionnaires are summarised as follows:

- 37 (64%) of landholders reported not having seen Brolga on their property.
- 21 (36%) reported observations of Brolga on their property or an adjacent property.
- Five (8.6%) reported a Brolga breeding event. One of which was Lake Widderin, which hadn't been recorded as a breeding wetland based on the desktop assessment.
- One (1.7%) reported Brolga flocking at Lake Widderin as defined in the interim guidelines.

Consultation with stakeholders listed in **Table 8.5**, did not identify any additional Brolga breeding or flocking records than those that are already available from desktop assessment and landholder questionnaires.

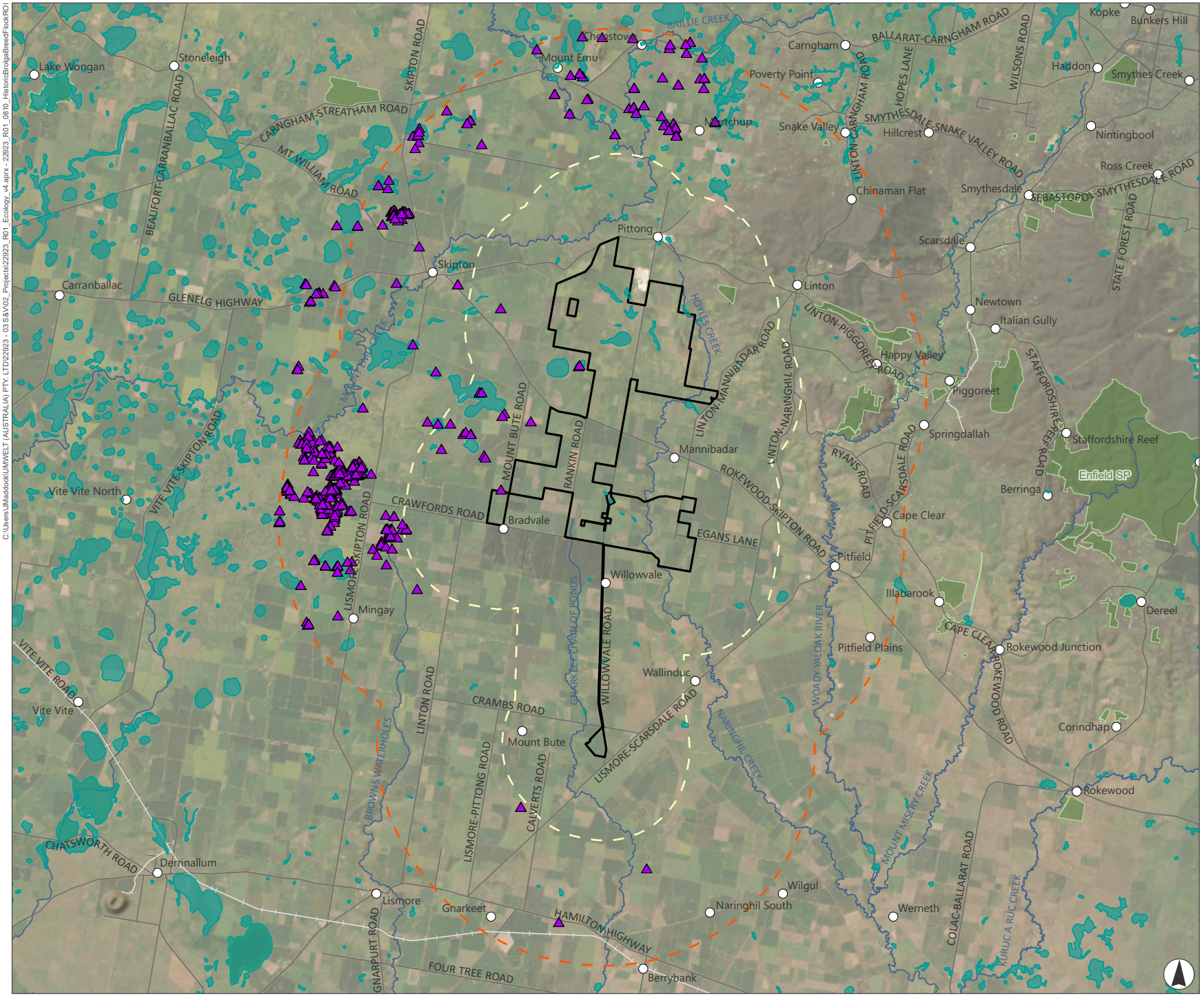

FIGURE 8.10

VBA records of Brolga Within the ROI

Legend

- Township
- Project Site
- ROI - 10km
- Brolga VBA Records 2025
- Site Buffer - 4km
- DEECA Mapped Wetlands
- Parks and Reserves
- Major Watercourse
- Roads
- Railway

0 2.5 5

Kilometres

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Initial roaming and habitat surveys

Roaming field surveys were initially undertaken during the breeding and non-breeding seasons of 2020 through to late 2022 to document the extent of Brolga activity and current and historical spatial patterns of activity within the ROI. A total of 326 sites were visually assessed and no evidence of Brolga were observed. Of all the sites assessed, only 21 wetlands (6.4%) were assessed as high quality habitat. The majority (237 or 72.7%) were assessed as low quality habitat.

While no Brolga were observed during these surveys, Brolga were opportunistically observed foraging within the Project Site during the September 2020 and July 2021 bird utilisation surveys (see **Section 8.3.4.1**). A total of 55 individuals were recorded, 22 at ground level and 33 below RSA. None were recorded within the RSA (see **Figure 8.11**).

Roaming surveys and site inspections

All wetlands within the ROI visible from publicly accessible locations were investigated during the breeding seasons between 2021 and 2024. A habitat assessment of inspected wetlands was undertaken but subsequently updated with aerial drone assessments (see **Level 2 Assessment findings**). The majority of the waterbodies were shallow dams with no riparian, emergent or floating vegetation. Most wetlands were located in areas subject to cropping or pasture establishment.

Ground truthing field surveys were undertaken at wetlands requiring further investigation as part of the Level 1 Assessment to determine if the wetland was still present/suitable for breeding. This included sites identified through landholder consultation and roaming surveys.

Roaming surveys were undertaken in 2023 to further document the extent of Brolga activity within the ROI. Brolga were observed at five wetlands, including Lake Widderin, although no confirmed breeding activity was observed.

Flocking dawn and dusk surveys undertaken at Lake Widderin and Lake Goldsmith in 2021 and 2023 did not observe any Brolga.

Site 55 within the Project Site

As noted above, there are two Brolga breeding records at Site 55 from 1984, which is a DEECA mapped wetland on the wind farm boundary (see **Figure 8.10**). Analysis of aerial photography indicates that Site 55 underwent substantial modification sometime after 1984 and prior to 1989, with a farm dam being established at the southern edge of the wetland, and the wetland appearing to have been drained and topographically modified. It has since been used for agricultural purposes. This suggests that the wetland is unlikely to retain sufficient water to support future Brolga breeding attempts or ensure successful breeding, even during wet years.

Analysis of aerial imagery and hydrological modelling indicates that these historical modifications to Site 55 have left the site unsuitable for Brolga breeding. The maximum inundation is below the required depth for successful Brolga breeding sites, and it is not able to support inundation for the 120 days necessary to support Brolga breeding activities (refer to Appendix 6 of the Ecological Assessment (**Appendix C**). The wetland also does not have suitable fringing and emergent aquatic vegetation required for nest building.

Therefore, due to the modification of Site 55 between 1984 and 1989, it no longer functions as or is considered to constitute a Brolga breeding site. Further details on the assessment of Site 55 are provided in **Appendix C.**

Based on the results of the field investigations, the condition of wetlands within the Project Site, and the hydrological modelling, there is no evidence that Brolga have utilised Site 55 or any other wetland within the Project Site for breeding purposes since 1984.

Level 1 Assessment summary

Based on the findings of the Level 1 Assessment (both desktop and field investigations), a total of 25 confirmed breeding wetlands as defined by the interim guidelines were identified within the ROI, including Lake Widderin. Despite no breeding activity being recorded during Level 1 field investigations, and no historical database records of breeding at Lake Widderin, this wetland was identified as a breeding site based on outcomes of landholder consultation in 2023.

Lake Widderin was also identified as the only confirmed flocking site as defined by the interim guidelines within the ROI. Despite there being one historical database record indicating Lake Widderin is a flocking site, no Brolga were observed during flocking surveys undertaken as part of the Level 1 Assessment in 2021 and 2023. However, findings of landholder consultation in 2023 identified Lake Widderin as a flocking site, resulting in further assessments as part of Level 2.

A Level 2 Assessment was therefore triggered.

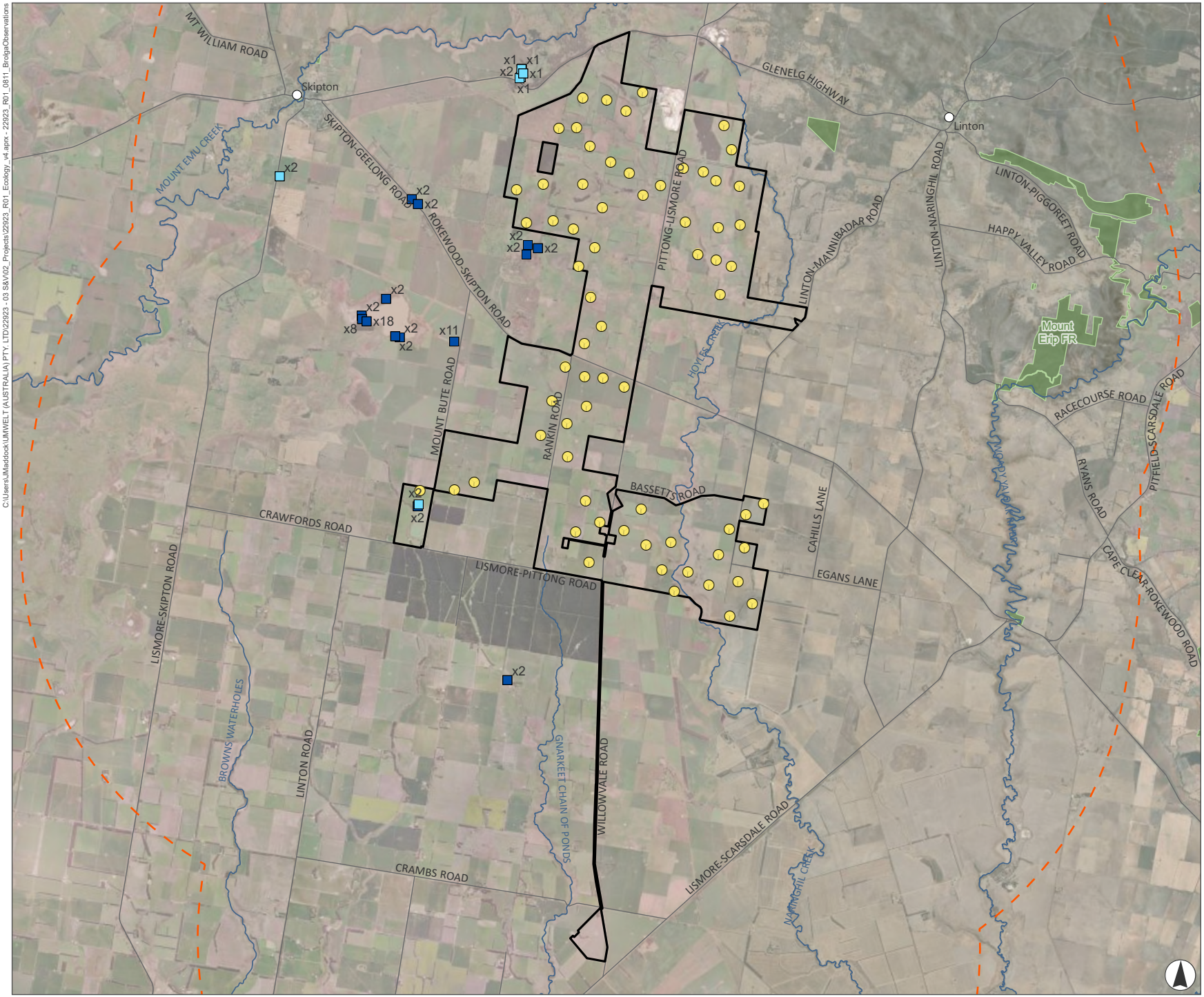

FIGURE 8.11

Brolga Observations During Project Surveys

Legend

- Township
- Project Site
- ROI - 10km
- Turbine
- Brolga
- Brolga (Incidental)
- Parks and Reserves
- Major Watercourse
- Roads

0 2.5 5

Kilometres

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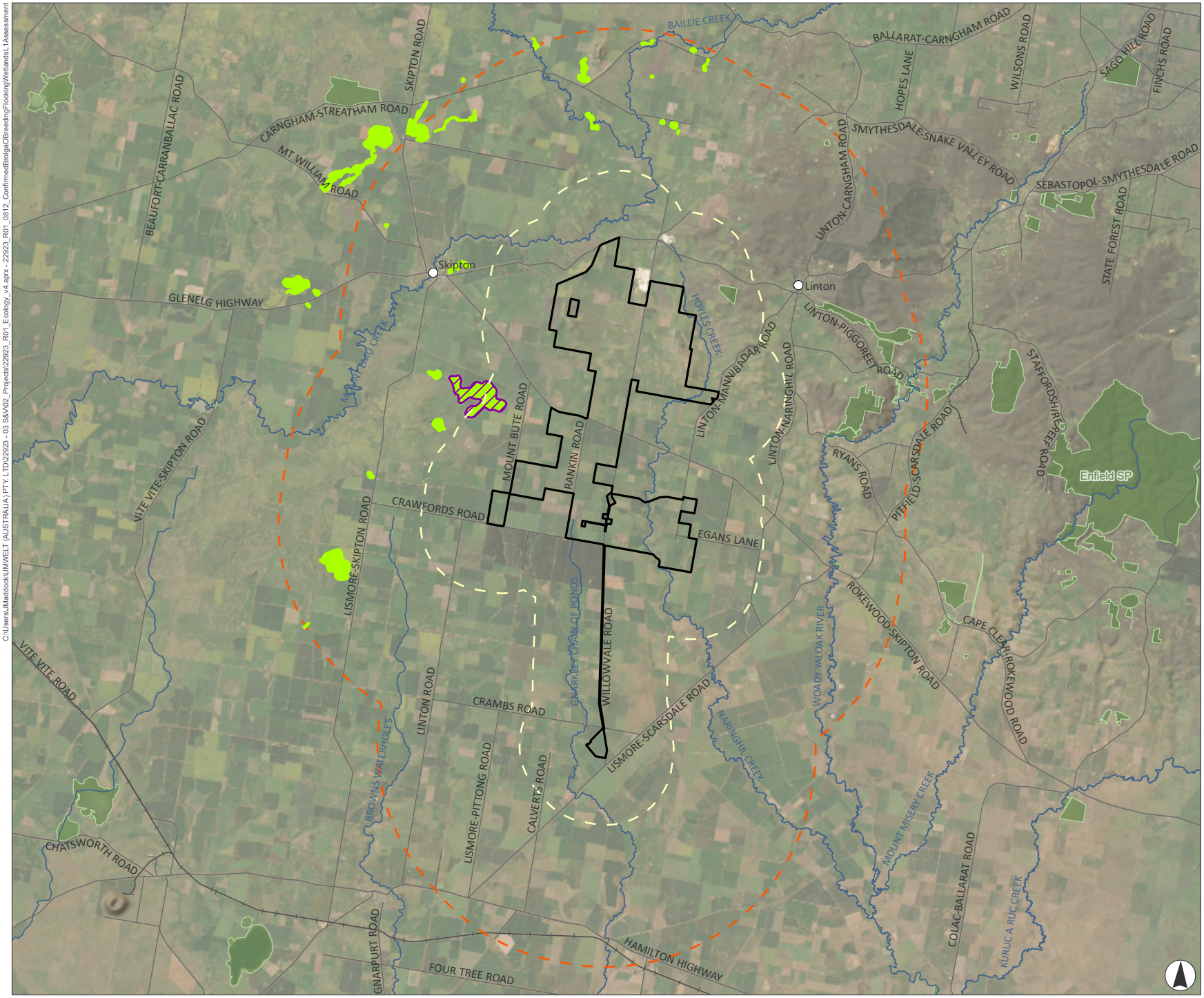

FIGURE 8.12

Confirmed Brolga Breeding and Flocking Wetlands in the ROI from the Level 1 Assessment

Legend

- Township
- Project Site
- ROI - 10km
- Site Buffer - 3.2km
- Confirmed Flocking Wetland
- 25 Confirmed Breeding Wetlands
- Parks and Reserves
- Major Watercourse
- Roads
- Railway

0 2.5 5

Kilometres

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Image Source: ESRI Basemap (2026) | **Data Source:** EHP (2026)

Brolga habitat assessment

Aerial drone surveys were undertaken to further investigate and assess wetland habitat across the ROI. These surveys built on the initial habitat assessment undertaken during the Level 1 Assessment. The aerial survey results broadly aligned with the previous habitat assessment, finding most of the waterbodies (70.2%) within the ROI to be of low quality habitat for Brolga. Only seven (3.4%) wetlands were deemed high quality habitat following the aerial surveys, which is less than the 22 identified as high quality habitat in the Level 1 Assessment.

No additional Brolga breeding sites were identified within the ROI throughout the 2024 aerial surveys. Therefore, the total number of confirmed Brolga breeding wetlands within the ROI after the Level 2 Assessment remains at 25.

Flocking surveys (2024)

Landholder consultation in October 2023 indicated that potential flocking activity has previously occurred at Lake Widderin. Further flocking surveys were undertaken in 2024 to identify any flocking activity, and obtain site specific Brolga flight behaviour at confirmed flocking sites to help inform development of turbine-free buffers.

A total of 19 Brolga were observed at Lake Widderin on three days on 2, 5, and 10 April 2024. A count of 14 to 18 Brolga were observed on a further 13 occasions, between 28 March and 27 June 2024. In total, during the flocking season, 10 or more Brolga were observed on 42 occasions across 27 dates, often getting the same number of Brolga at dawn and dusk on the same day.

Of the 441 survey events (see **Table 8.6**):

- 42 (9.5%) recorded 10 or more Brolga at Lake Widderin
- 136 (30.8%) recorded at least one Brolga
- 305 (69.2%) did not record Brolga.

Given the high level of survey effort across all wetlands within the ROI, there is a high level of confidence that no more than 19 Brolga were utilising non-breeding habitat within the ROI during the 2024 flocking season.

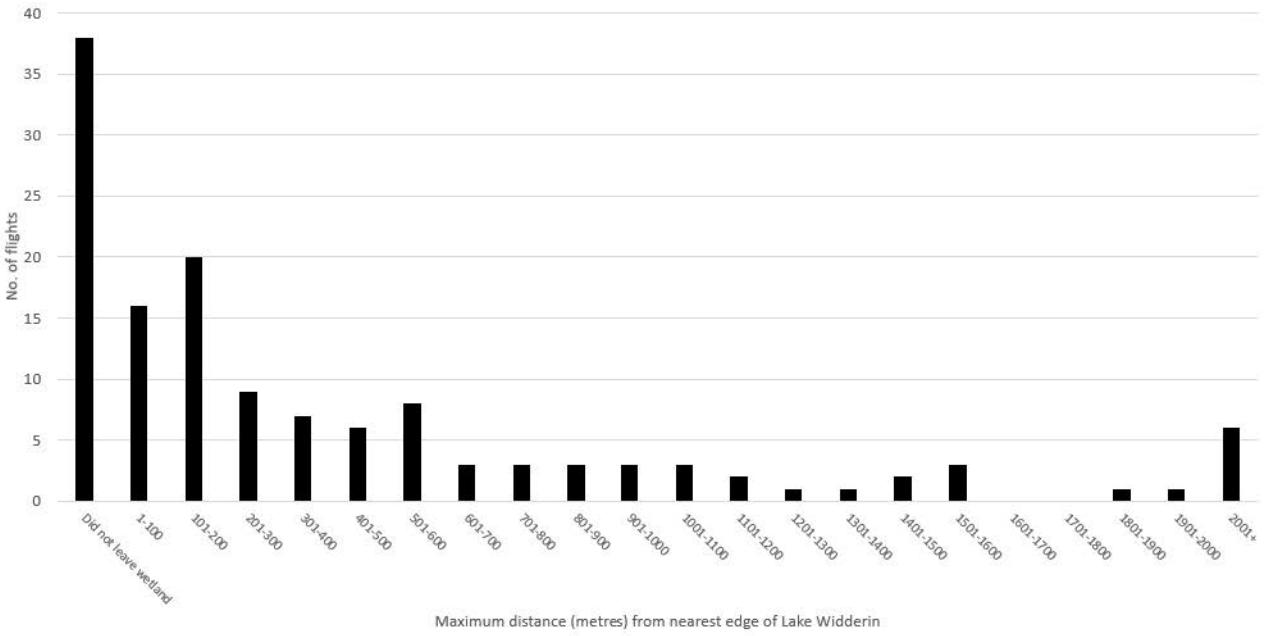
During flocking survey events, all Brolga flights were recorded. In total 150 flight events were captured. On 5 April, all 19 Brolga were observed flying together around dusk from the south-west edge of Lake Widderin to the southern Lake Widderin mudflats to forage. There were 18 occurrences of 10 or more Brolga flying together, with a total of 681 individual Brolga flight events captured within the 150 flights.

All 150 flights were categorised into six different flight events, as detailed in **Table 8.15.** Most flights were within 500 m of Lake Widderin (70.5%). 146 of the recorded flights were associated with flocking at Lake Widderin. Only 10 flights were incomplete.

Table 8.15 Results of the Brolga Flocking Flight Behaviour Studies

Flight event category	Description	No. of flights
Did not leave wetland	The Brolga flight started and finished wholly within Lake Widderin.	38
< 500 m	The Brolga flight had a maximum distance of less than 500 m from Lake Widderin.	58
500–1,000 m	The Brolga flight event had a maximum distance of 1000 m, but greater than 500 m from Lake Widderin.	20
>1,000 m	The Brolga flight event had a maximum distance greater than 1000 m from Lake Widderin.	20
Not associated with a flocking wetland	The Brolga flight event is not associated with Lake Widderin. These flights occurred at the end of the flocking season, with individual Brolga no longer utilising Lake Widderin as a roost site.	4
Incomplete	The start or end point of the Brolga flight event was unable to be recorded.	10
Total		**150**

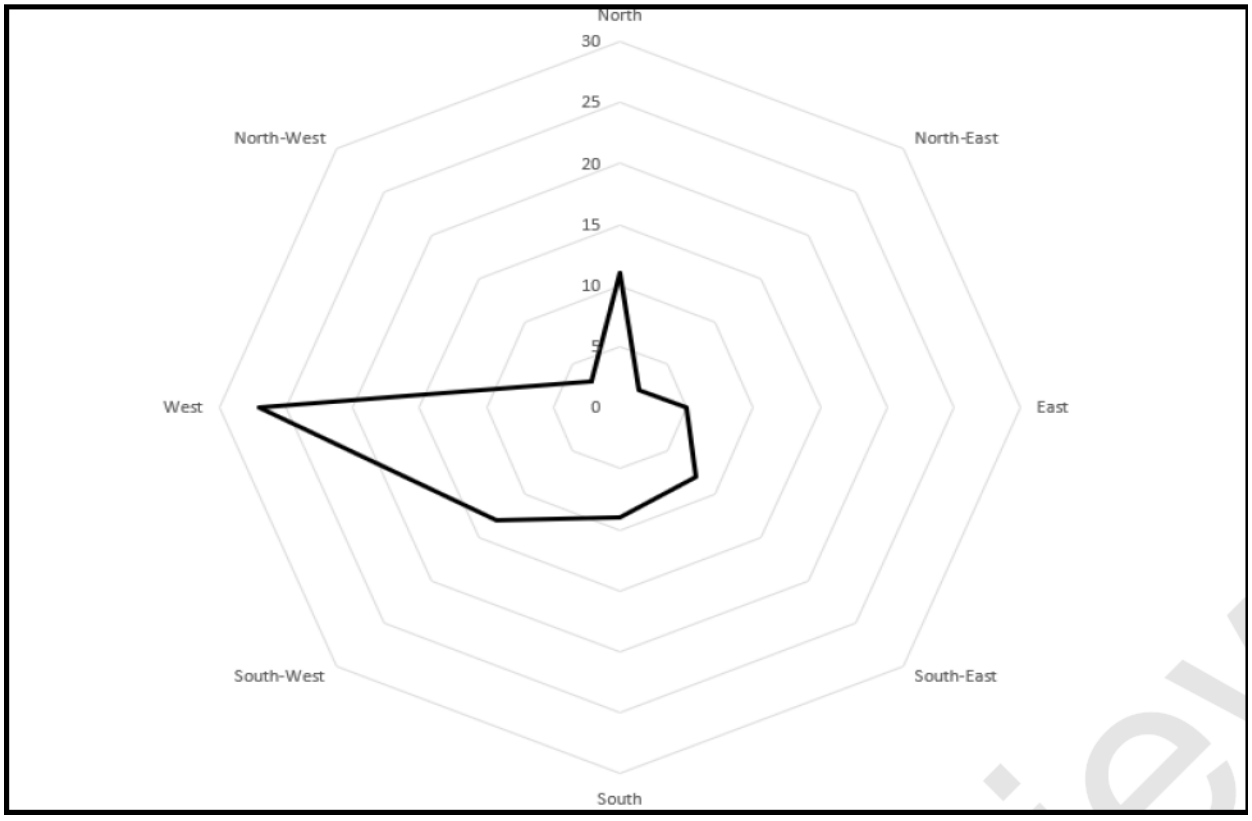
Brolga flights were most frequently observed within 500 m of Lake Widderin, accounting for 70.5% of the 136 complete flight events associated with the flocking site (see **Graph 8.1**). While some Brolga flights were recorded more than 1 km from Lake Widderin, 99% of flight events were within 2 km of the flocking site.



Graph 8.1 Total Number of Brolga Flights Recorded, Categorised by the Maximum Distance the Flight Path Achieved from the Nearest Edge of Lake Widderin (EHP, 2025)

As discussed in Level 1 Assessment findings, historical Brolga records are concentrated to the north, west, and south-west of the Project Site. The distribution, and EHP's observations, align with the occurrence of wetlands, which are considerably more abundant north and west of the Project Site compared to the east. The observed Brolga flights during the 2024 flocking surveys were heavily skewed to the west away from the Project Site, with all detections beyond 2 km observed on the western side of Lake Widderin.

Of the 78 flight events that had an observed entry or exit point at Lake Widderin, 52% occurred between the west and south-west (see **Graph 8.2**).



Graph 8.2 Lake Widderin Cardinal Directions by Brolga Entry or Exit Point (EHP, 2025)

The average flight height of all 150 flight observations was 14 m, ranging from 2 m to 90 m above ground. Only five flights (3.3%) were recorded within the RSA (**Figure 8.13**). These flights all occurred late in the flocking season, aligning with Veltheim et al. (2022) that found adult Brolga moved from non-breeding to breeding areas between May and June.

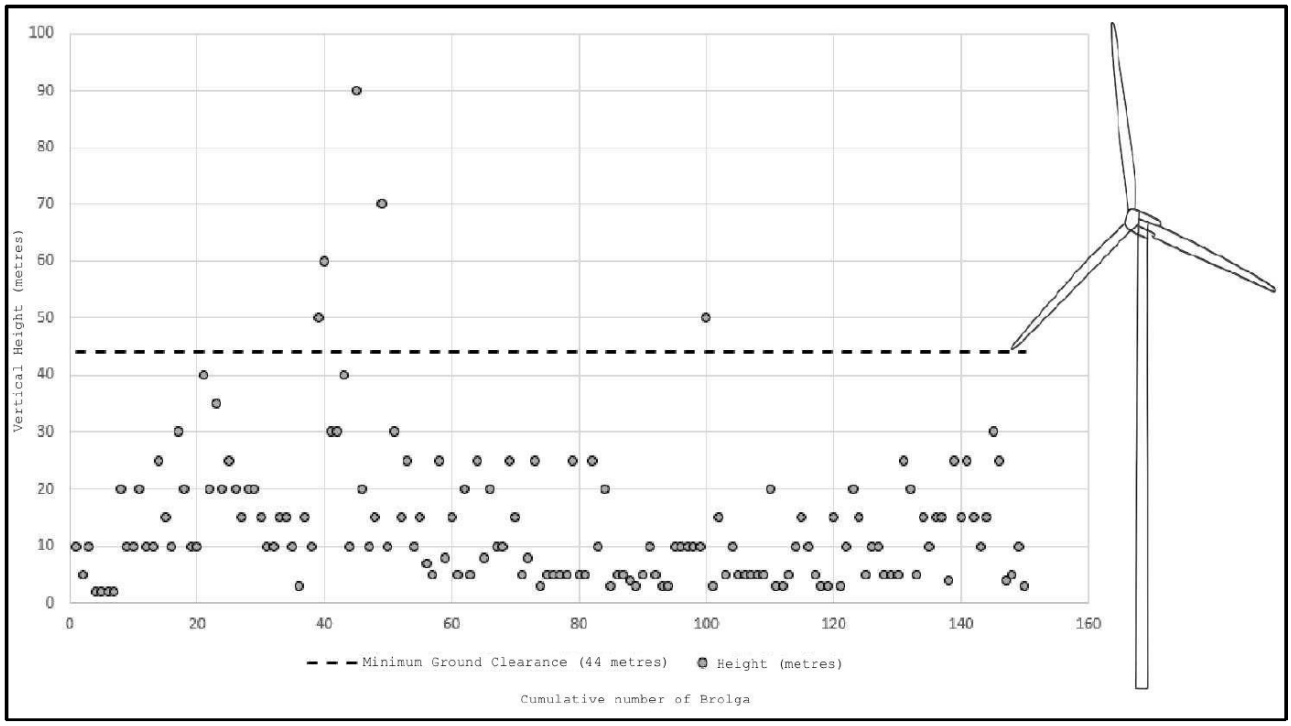


Figure 8.13 Brolga Flocking Flights in Relation to the Minimum Ground Clearance of the RSA

Based on records during bird utilisation surveys, flocking surveys and findings from similar studies for other wind farm developments, Brolga infrequently fly above 44 m (within the proposed RSA of the Project).

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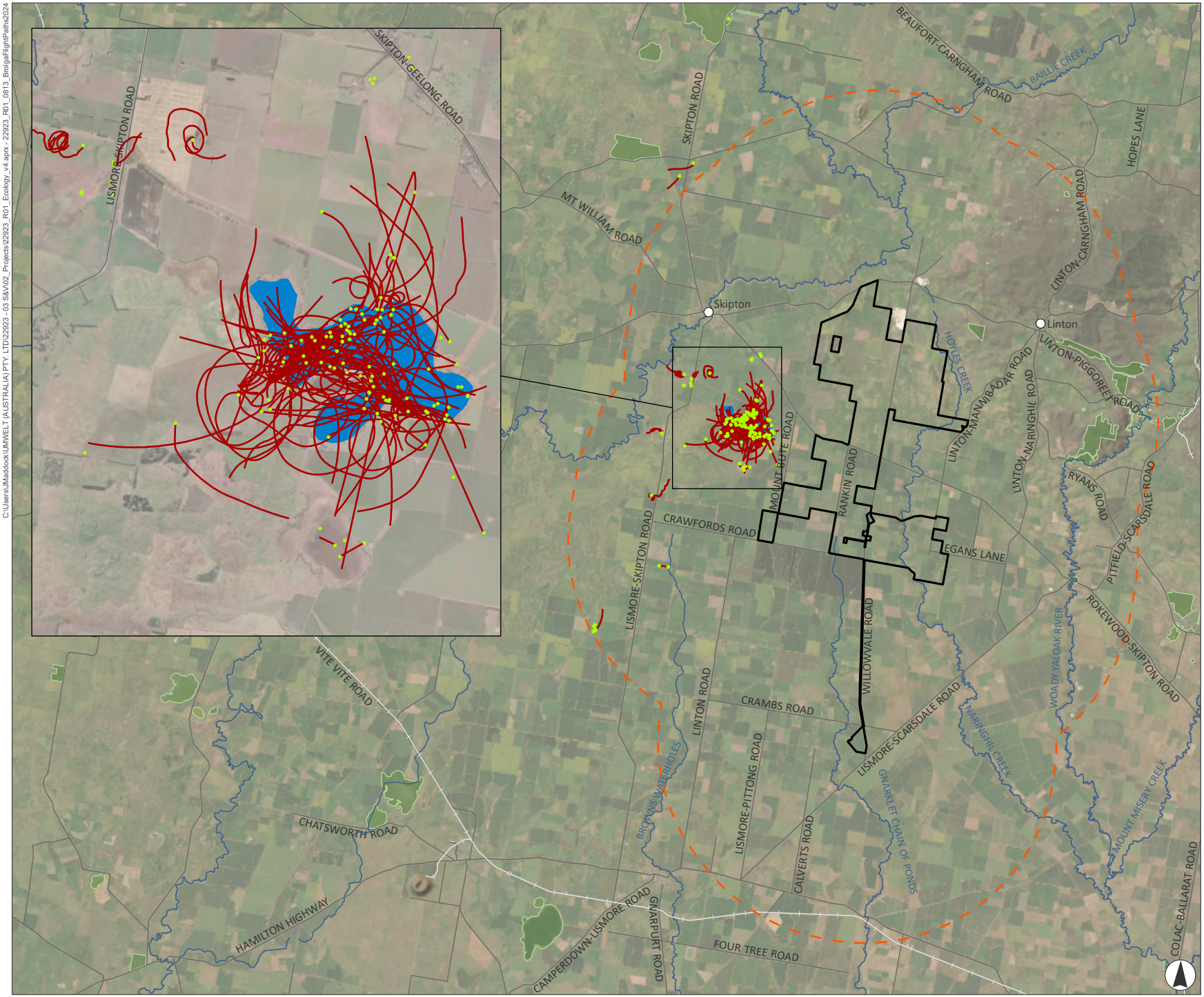

FIGURE 8.14

Brolga Flocking Flight Path Observations During the 2024 Flocking Season

Legend

- Township
- Project Site
- ROI - 10km
- Brolga Flocking Points
- Brolga Flight Paths
- Lake Widderin
- Parks and Reserves
- Major Watercourse
- Roads
- Railway

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Image Source: ESRI Basemap (2026) | **Data Source:** EHP (2026)

Flocking surveys (2025)

Brolga were recorded on 14 occasions across 366 point-count surveys. Of these, six recorded a Brolga flight event. The maximum number of Brolga observed together during the 2025 flocking season was three individuals. Therefore, no flocking behaviour (a group of 10 or more Brolga) was observed in 2025 throughout the ROI.

Breeding surveys (2023 and 2024)

Similar to flocking surveys, further breeding surveys were undertaken to try and obtain site specific Brolga flight behaviour at confirmed breeding sites, to help inform development of turbine-free buffers.

During the 2023 breeding season, Brolga were observed on 14 occasions across five sites. Two Brolga breeding pairs were recorded at two different sites. Three flights were only recorded for one of the breeding pairs at a site located just outside of the ROI (10.43 km north-west of the Project Site). These flights all started and finished within the same site. No other breeding flights were recorded.

The drone surveys completed in August and October 2024 (see **Table 8.6**) did not identify evidence of breeding Brolga within the ROI. Despite this, further breeding surveys commenced on 24 September 2024. Brolga were observed at four sites, with seven Brolga flight events recorded at Lake Widderin. However, no breeding activity was observed at any of the four sites.

Given most of the wetlands surveyed within the ROI were dry, with no Brolga nests, eggs or fledglings recorded during these surveys (or through drone surveys), no flight data associated with breeding Brolga was able to be collected during the 2024 breeding season.

Level 2 Assessment summary

The Level 2 Assessment determined that there are 25 confirmed breeding wetlands within the ROI. Lake Widderin was confirmed as both a breeding and flocking site for Brolga.

Importantly, flocking has not occurred at Lake Widderin every year. Of the five years surveyed, flocking has only been recorded during one year (2024) of surveys, indicating flocking at Lake Widderin is intermittent in nature. Lake Widderin is therefore considered to be a one-off flocking site and not regularly used by Brolga.

A Level 3 Assessment was triggered, which requires application of turbine-free buffers for the Project in accordance with the interim guidelines. The findings of the Level 2 Assessment informed development of these buffers. An overview of the development of these buffers as part of the Level 3 Assessment is detailed in **Section 8.5.1.**

8.3.4.6 Microbats

A range of other common microbat species were detected during surveys and analysis, including White-striped Freetail Bat, Chocolate Wattled Bat, Eastern Falsistrelle, Gould's Wattled Bat, Little Forest Bat, Large Forest Bat, Inland Broad-nosed Bat, and South-eastern Freetail Bat.

Further details are provided below for each of the four bat species identified in the scoping document.

Southern Bent-wing Bat

There are no historical records for Southern Bent-wing Bat within the ROI. The ROI intersects with the current predicted range of Southern Bent-wing Bat and Eastern Bent-wing Bat, however the Project Site itself does not. **Figure 8.15** shows the Southern Bent-wing Bat range (the south-western green polygon) and the Eastern Bent-wing Bat range (the north-eastern green polygon).

Figure 8.15 Project Site location and ROI in relation to the Southern Bent-wing Bat range and Eastern Bent-wing Bat range (BatMap Viewer, 2026)

Several calls belonging to a call complex that includes Southern Bent-wing Bat and Eastern Bent-wing Bat were recorded at nine of the 16 songmeters during the fourth round of microbat surveys (23 February to 27 March 2023). However, the call complex more closely aligned with the Chocolate Wattled Bat. In the absence of a definitive call that can be attributed to a single species, these recordings have been classified as the call complex. These complex calls were recorded at ground detectors, none were recorded at the met mast songmeter (50 m above ground).

The nearest known significant roosting caves for Southern Bent-wing Bat are Pomborneit Cave, approximately 65 km to the south of the Project Site, and O'Keefe's Cave, approximately 80 km south-west of the Project Site, near Timboon.

A desktop geomorphological assessment of potential roosting caves within 80 km of the Project Site was undertaken by Wakelin Associates (2023). Several potential roosting sites were identified in the surrounding landscape however none are known to contain significant bat populations (i.e. only occasional bats observed) except for Pomborneit Cave.

Skipton Lava Cave located near Mt Widderin was previously known to support a large bat population until around 1866 when human interference resulted in bats abandoning the cave. No bats are currently known to use this as a roosting site and it is not a known roosting site for Southern Bent-wing Bat. No other caves within 80 km could be, or are known to be, used as a roosting site for the species (except for Pomborneit Cave).

Eastern Bent-wing Bat

There are no historical records for Eastern Bent-wing Bat within the ROI. The ROI is located on the edge of the species range (**Figure 8.15**).

A call complex for Eastern Bent-wing Bat recorded during the third round of microbat surveys (19 October to 17 November 2022) which had similar parameters to the species as it was at the lower end of the call frequency (i.e. 44 kHz).However, the frequency was not consistent with a typical call from the species and was considered more likely to be Large Forest Bat, which was positively identified when calling at less than 43 kHz.

During the seventh round of surveys (7 October to 20 November 2024), one file met the call criteria for Eastern Bent-wing Bat. The call was recorded at a ground detector at survey location #5 (see **Figure 8.3**), located in the north-east of the Project Site, and connected by a windrow to Mount Bute Scenic Reserve forested areas (**Figure 8.4**). It is likely there are greater foraging opportunities for the species in the vicinity of this reserve and connected forested areas further to the north-east. The site of recording is nearby Hoyles Creek and associated riparian corridor, which travels north and south-east from this point, primarily outside of the Project Site. Potential Eastern Bent-wing Bat habitat in these locations is of moderate quality, with foraging opportunities available for the species in the riparian areas.

The distribution of the Eastern Bent-wing Bat has some overlap with the Southern Bent-wing Bat, however the Eastern Bent-wing Bat can be found further east, recorded in disused mines of central Victoria. There is a single recognised maternity cave in Victoria for the Eastern Bent-wing Bat, located in East Gippsland, near Bairnsdale. However, the detection of Eastern Bent-wing Bat in the Project Site (as well as recent records from a site near Beaufort [Ecology and Heritage Partners unpublished data]) suggests greater activity in the region than was previously understood.

Yellow-bellied Sheath-tailed Bat

There are no historical records for Yellow-bellied Sheath-tailed Bat within the ROI.

One call recorded during the fourth round of surveys (23 February to 27 March 2023) was classified as ‘potential’ Yellow-bellied Sheath-tailed Bat. Despite seven survey events resulting in no confirmed calls of Yellow-bellied Sheath-tailed Bat, with one ‘potential’ call the species’ presence within and surrounding the Project Site cannot be discounted.

White-striped Freetail Bat

White-striped Freetail Bat is a widespread and common species across southern Australia, occupying a broad range of habitats including alpine and urban environments.

The exact number of recorded White-striped Freetail Bat calls was not determined, as the analysis of calls targeted listed species. However, the species was frequently recorded during the surveys. For example, during round five of microbat surveys (27 February to 26 March 2024), there were at least 102 records of White-striped Freetail Bat across 15 of the 16 songmeters.

8.3.4.7 Raptors

Twelve raptor species were recorded during targeted surveys, two of which are listed under the FFG Act: Black Falcon and Little Eagle.

The following flight heights were recorded for the 12 raptor species:

- Two species were observed within the RSA on at least one occasion: Wedge-tailed Eagle and Whistling Kite.
- Ten species were only observed below the RSA: Australian Hobby, Brown Falcon, Black Falcon, Black Kite, Black-shouldered Kite, Brown Goshawk, Little Eagle, Nankeen Kestrel, Spotted Harrier, and Swamp Harrier.

Black Falcon and Little Eagle, along with Wedge-tailed Eagle and Spotted Harrier (as key species of concern in the scoping document) are discussed below.

Refer to Section 6.5.11 of the Ecological Assessment (**Appendix C)** for further details on raptor species.

Black Falcon

There are 15 historical records for Black Falcon within the ROI. Black Falcon was recorded on three occasions (each time a single individual) during targeted raptor surveys in the ROI (see **Figure 8.16**), each time below the RSA. All three observations were made in January and February 2025.

Of the three observations, the maximum recorded height was 15 m off the ground, well below the lower RSA of 44 m. However, the species can fly within the RSA.

Black Falcon typically occupy arid and semi-arid zones, and frequent low, open wooded grasslands, and waterbodies. The species primarily feeds on smaller birds (up to cockatoo-size) but may also feed on small mammals (i.e. rabbits and mice). No confirmed Black Falcon nest was identified within the ROI during the assessments, although the species typically occupy abandoned stick nests of other birds, including other raptors and ravens.

Photo 8.3 Black Falcon Recorded on a Gate within the ROI (EHP, 21 February 2025)

Little Eagle

There are 36 historical records of Little Eagle within the ROI. Little Eagle was recorded on two occasions during bird utilisation surveys, both within the RSA. One Little Eagle individual was also recorded approximately 1.2 km north-west of the Project Site below the RSA during targeted raptor surveys (see **Figure 8.16**).

Little Eagle typically occupies open woodland, grassland and arid regions. This small eagle has a large range, found widely across mainland Australia, except in heavily forested areas. The species searches for prey by soaring at high (up to 500 m) altitude, before swooping to take prey from the ground, trees or shrubs.

No confirmed Little Eagle nests were identified within the ROI during the assessments. Little Eagle typically build nests in mature living trees in open woodland or tree-lined watercourses, rarely nesting in isolated trees. Larkin, et al., (2020) found nests were built in woodland patches greater than five hectares (mean 76 hectares), more than 200 m (mean 78 m) from the woodland edge, and more than 11 m (mean 190 m) from the agricultural edge. Given these results, there is no typical nesting habitat for Little Eagle within the Project Site.

Wedge-tailed Eagle

There are 203 historical records of Wedge-tailed Eagle within the ROI, indicating the common and widespread nature of the species. The species was recorded on 23 occasions (comprising 34 individuals) during bird utilisation surveys, across 2022, 2023, 2024 and 2025 survey periods. On 10 of these occasions (comprising 15 individuals) the species was recorded with the RSA. The species was not recorded above the RSA but was also recorded on the ground or perched on a fence or in a tree on multiple occasions.

A total of 92 observations of Wedge-tailed Eagle were recorded during targeted raptor surveys (see **Figure 8.16**), comprising 150 individuals in cumulative total. One active nest along the north-western boundary of Lake Widderin, approximately 4.5 km from the nearest WTG (Site 7) was recorded, with two adults and two juveniles recorded (**Photo 8.5**).

Wedge-tailed Eagle nest sites can be found in a range of habitats, including from isolated trees to forests (Foster & Wallis, 2008), with the general contention that the species build their nest in the commonest tall tree available (Sharp, et al., 2001). Nest density is related to resource availability, with surveys indicating greater distance between nests in semi-arid zones (one pair per 40 to 48 km) than those in temperate zones (one pair per 3 to 9 km) (Sharp, et al., 2001). Recent surveys of Southern Victoria (Foster & Wallis, 2008) found breeding territories averaged 17.6 km with a nearest neighbour of 4.7 km.

Photo 8.4 **Inactive Wedge-tailed Eagle next north-east of the Project Site (EHP, 4/11/2024)**

Photo 8.5 **Active Wedge-tailed Eagle nest at Lake Widderin (EHP, 4/11/2024)**

Spotted Harrier

There are 12 historical records of Spotted Harrier within the ROI. One Spotted Harrier individual was recorded in the ROI on four occasions during targeted raptor surveys, each time below the RSA (see **Figure 8.16**). All observations were made in February and March 2025.

Whilst all observations were below the RSA, the species is capable of flying within the RSA.

The species is a ground-hunting raptor, often found in open grasslands and agricultural areas, gliding low to the ground before dropping onto prey. Spotted Harrier build a large, often flimsy, platform of twigs and sticks lined with leaves for nesting. No confirmed Spotted Harrier nest was identified within the ROI during the assessments.

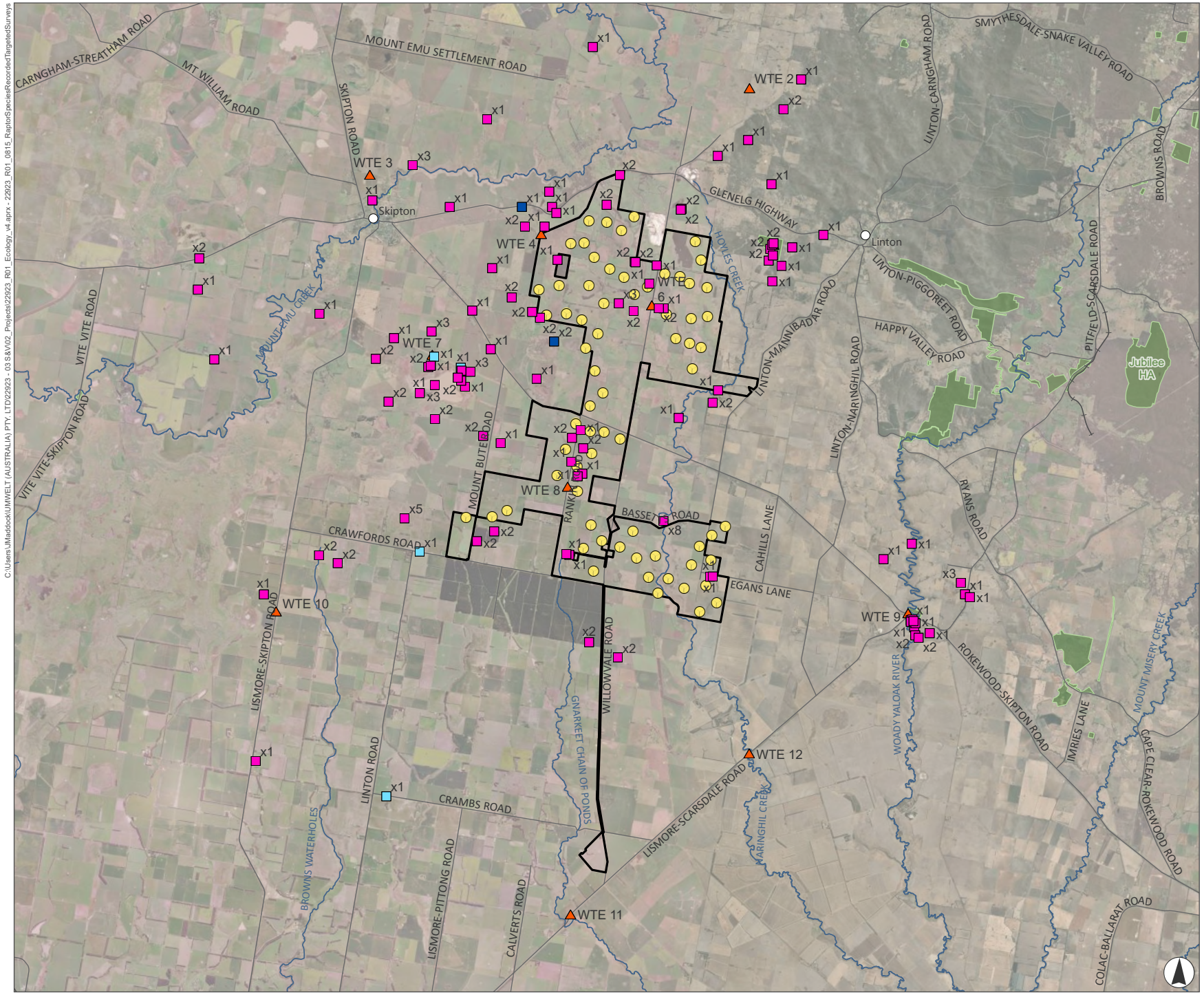

FIGURE 8.16

Raptor Species Recorded During Targeted Raptor Surveys and Bird Utilisation Surveys

Legend

- Township
- Project Site
- Turbine
- Raptor survey locations 2024
- Black Falcon
- Little Eagle
- Wedge-tailed Eagle
- Parks and Reserves
- Major Watercourse
- Roads
- Railway

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8.3.4.8 Grey-headed Flying fox

The Grey-Headed Flying-fox is a highly mobile species within the distribution of the national population (from central Queensland to South Australia) with its location highly dependent on the abundance and distribution of food sources. The species typically travels 5–15 km from its roost to forage, though may travel up to 50 km from their roost site (Spencer, et al., 1991) (Tidemann & Nelson, 2004).

There are no historical records of Grey-headed Flying-fox within the ROI. The Project Site is located within the current predicted range of the species, however data captured from Western Sydney University's Australian Flying-fox Tracker indicates the Project Site is outside of the species primary range with infrequent visits to the area.

The nearest previously known roost sites (known as camps) for Grey-headed Flying-fox were located at Hexham, approximately 60 km south-west, and Colac approximately 60 km south of the Project Site. Engagement with DEECA on 15 May 2023 revealed the potential location of a new camp at Lismore, approximately 20 km south of the Project Site (Geoff Brooks, DEECA, pers. comms. 2023). The presence of this camp was confirmed by EHP in June 2023, with Grey-headed Flying-fox observed roosting in the low thousands. However, the camp was no longer active during surveys in February 2024 which indicates it is not a permanent camp.

Areas of potential foraging habitat within the Project Site primarily include windrows of planted Eucalyptus, occasionally mixed with other native trees and shrubs, or mixed plantations around dwellings that may provide a variety of fruit and nectar producing plants. As shown in **Figure 8.17**, only limited areas of the Project Site provide a potential foraging resource for the species.

A summary of the Grey-headed Flying-fox survey results is provided in **Table 8.16.**

Table 8.16 Summary of Grey-headed Flying-fox Survey Results

Survey date	Site	Time of day	No. of Grey-headed Flying-fox observed
9 June 2023	Lismore Camp	Day	Approximately 2000 Grey-headed Flying-fox present.
19 February 2024	Lismore Camp	Day	0
20 February 2024	Lismore Camp, Hexham Camp	Day	• 0 individuals at the Lismore Camp • 15 individuals incidentally observed during travel • Over 2000 recorded at Hexham Camp

14 April 2025	Lismore Camp, Project Site	Post-dusk	• 400-700 individuals recorded at Lismore Camp
			• Three observations approximately 6 km south-west of the Project Site, including:
			  ○ 19:04pm – 30 individuals scattered along roadside vegetation
			  ○ 20:00pm – 15 individuals observed flying between trees, feeding and calling.
			  ○ 20:06 – 10 individuals seen foraging and calling.
			• No observations within the Project Site boundary

Survey date	Site	Time of day	No. of Grey-headed Flying-fox observed
29 April 2025	Lismore Camp	Day	400–700
20 May 2025	Project Site	Post-Dusk	0
22 May 2025	Project Site	Pre-dawn	0

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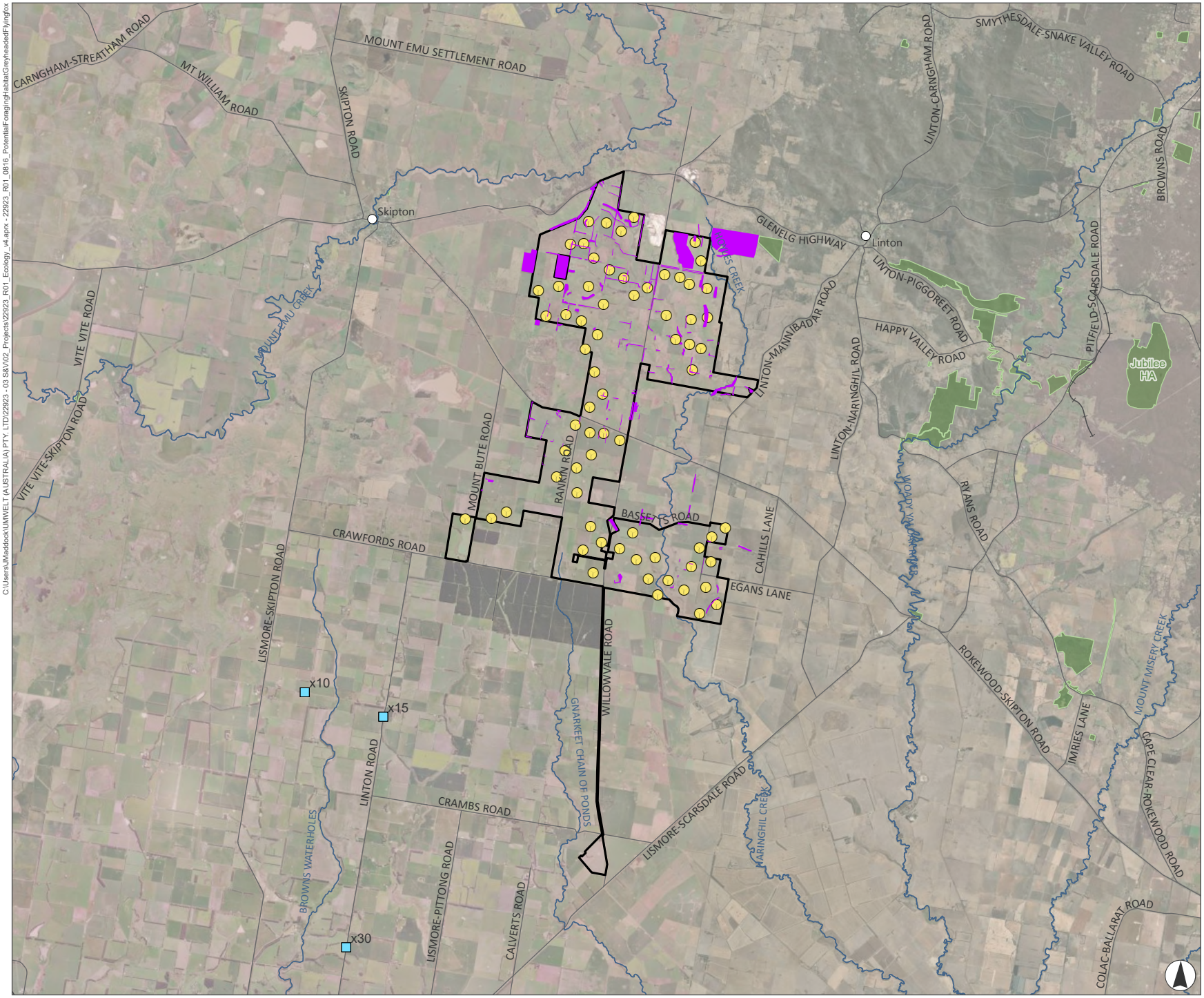

FIGURE 8.17

Potential Foraging Habitat for Grey-headed Flying-fox

Legend

- Township
- Project Site
- Turbine
- Grey-headed Flying-fox Survey Records
- Grey-headed Flying-fox Potential Habitat
- Parks and Reserves
- Major Watercourse
- Roads
- Railway

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8.3.4.9 Striped Legless Lizard and Tussock Skink

Both Striped Legless Lizard and Tussock Skink typically occupy areas of native and introduced grasslands, often where Kangaroo Grass is found.

There are seven historical records of Striped Legless Lizard within the ROI, all located more than 5 km from the Project Site. There are 21 historical records for Tussock Skink within the ROI, with the closest records located 900 m west of the Project Site.

Fragmented areas of suitable habitat for Striped Legless Lizard and Tussock Skink were identified within the Assessment Area, primarily within patches of *Heavier soils* Plains Grassland. These patches predominately occurred along Rankin Road and Willowvale Road, within areas dominated by either the native Kangaroo Grass, or the exotic Toowoomba Canary-grass. All areas of habitat were classed as low quality for both species, due to the general lack of embedded rock for basking and debris for shelter, lack of cracking clay soils, signs of disturbance, and areas of very high biomass with no inter-tussock spacing. These fragmented areas of habitat were not connected to any areas of larger suitable habitat for either species, with the broader landscape predominantly used for cropping and sheep grazing which do not support the tussock structure or embedded rock required.

Striped Legless Lizard are a relatively sedentary species, occupying small home ranges and not dispersing over long distances. Based on this, combined with the distance to historical records and disturbed condition of habitat within the Assessment Area, it is unlikely that a population of Striped Legless Lizard occurs within the Assessment Area. Whilst less is known about the dispersal and home range for Tussock Skink, its habitat and behaviour are comparative to Striped Legless Lizard.

Targeted field surveys were not undertaken for either species due to the low quality of habitat present and the fragmented nature of it. In the absence of targeted surveys, both species were conservatively assigned a moderate likelihood of occurrence.

8.3.4.10 Growling Grass Frog

Growling Grass Frog are largely associated with permanent or semi-permanent still or slow flowing waterbodies (i.e. streams, lagoons, farm dams and old quarry sites) (Hero, et al., 1992) (Barker, et al., 1995) (Heard, et al., 2010). The species can also utilise temporarily inundated waterbodies during breeding season, to facilitate reproduction.

The nearest historical record of Growling Grass Frog to the Project Site is approximately 2.7 km north of the Project Site, from 2011 in Mount Emu Creek. There are additional records for the species approximately 7.6 km south and east of the Project Site, along a tributary of Woady Yaloack River and the Gnarkeet Chain of Ponds. Of these, the Gnarkeet Chain of Ponds intercepts the Project Site where it appears to originate from a wetland within an agricultural paddock located north of Lismore – Pittong Road, before flowing south through the adjacent plantation. Additional waterways that intercept the Project Site include Hoyles Creek and Naringhil Creek in the east, and Mundy Gully Creek in the far south-west.

No preferred breeding habitat that would likely support a population of Growling Grass Frog was recorded within the Project Site, due to the ephemeral nature of the waterbodies present, low diversity of aquatic and semi aquatic native vegetation, dominance of areas by the exotic Spiny-rush and often degraded nature due to pugging by livestock. As such, no targeted surveys (i.e., nocturnal call playback) were undertaken. Hoyles Creek and Naringhil Creek were identified as potential dispersal corridors, as they contained a slow flow of water and banks dominated by Common Reed, Common Spike-sedge and Rush.

8.3.4.11 Golden Sun Moth

Due to the modified condition of land within the Assessment Area in private paddocks, no suitable Golden Sun Moth habitat was present, however areas of potential habitat were the focus of targeted surveys.

No Golden Sun Moth were recorded within the Project Site during targeted surveys completed over three seasons. Most areas of potential habitat were narrow, fragmented sections along road reserves, with a moderate to high cover of weeds present, predominately Toowoomba Canary-grass.

The western road corridor of Willowvale Road (see **Photo 8.1** and **Photo 8.2**) contained the largest area of potential habitat, consisting of large swathes of Kangaroo Grass, with limited other native flora species present. The corridor varied in condition, with evidence of past disturbance and vegetation management apparent. These factors, along with the lack of observations of Golden Sun Moth during the targeted surveys, make it unlikely that the species is present within the Assessment Area or would be able to recolonise areas of suitable habitat.

In addition, the proximity of potential habitat within the Assessment Area relative to any known populations of Golden Sun Moth exceeds 5 km. With a dispersal capacity of approximately 200 m (DAWE 2021b), any populations exceeding this distance from each other are effectively isolated, and surrounding populations are unlikely to be able to disperse into any areas of potential habitat within the Project Site.

8.3.4.12 Migratory shorebirds

Two migratory bird species recognised under the migratory provisions of the EPBC Act, Sharp-tailed Sandpiper and White-throated Needletail, were recorded during Project surveys. White throated Needltail is discussed above in **Section 8.3.4.4**. Sharp-tailed Sandpiper was recorded during bird utilisation surveys, and is discussed further below.

No migratory bird species were recorded during shorebird surveys at Lake Widderin. Several common waterbirds were observed, including Australian Shelduck *Tadorna tadornoides*, Black Swan, Dusky Moorhen *Gallinula tenebrosa*, Little Pied Cormorant *Microcarbo melanoleucos* and Straw-necked Ibis.

Australasian Bittern and Latham's Snipe, both species identified as species for consideration in the scoping document, were not recorded and are considered to have low likelihood of occurrence within the Project Site due to lack of suitable habitat.

Further details on the suitability of Australasian Bittern habitat within the Project Site and surrounding area is provided in Section 6.5.5.3 of the Ecological Assessment (**Appendix C**).

Sharp-tailed Sandpiper

Migrating Sharp-tailed Sandpiper typically arrive in north-west Australia between August and September. Following their arrival, individuals will begin slowly moving southerly, with the species typically arriving in Victoria between September and December (DCCEEW, 2023). Movements occur during the non-breeding season where birds will move between temporary or flooded wetlands, dispersing from wetlands once dry.

There are four historical VBA records and four historical Atlas of Living Australia records of Sharp-tailed Sandpiper within the ROI. However, one of these records is a duplicate occurring in both databases. The most recent record is from 1975.

Sharp-tailed Sandpiper was observed on one occasion during bird utilisation surveys, with six individuals recorded foraging at ground level on the south-east edge of Lake Widderin in October 2024.

While the ROI includes some suitable habitat for the Sharp-tailed Sandpiper (e.g., inland wetlands that range from freshwater to hypersaline), these habitats are outside the Project Site and so the species presence is likely to be opportunistic and infrequent.

8.4 Potential Impacts

Construction, operation and decommissioning of the Project has potential to impact on biodiversity. These impact pathways relate to direct and indirect impacts on flora, fauna and native vegetation and are outlined in **Table 8.17.** The relevant section where each potential impact is discussed is also identified.

Table 8.17 Potential Biodiversity Impact Pathways

Impact pathway	Project phase	Section No.
Removal of native vegetation, listed threatened flora, and TECs.	Construction, Decommissioning	**Section 8.6.1**
Direct removal of fauna habitat from clearance, earthworks and physical disturbance.	Construction, Decommissioning	**Section 8.6.2**
Direct impacts on fauna from vehicle strikes / trench entrapment.	Construction, Decommissioning	**Section 8.6.3**
Temporary disturbance to fauna caused by factors such as noise, dust, light and vibration.	Construction, Decommissioning	**Section 8.6.4**
Habitat and vegetation degradation from indirect impacts.	Construction, Decommissioning	**Section 8.6.5**
Potential bird and bat collisions with WTG.	Operation	**Section 8.6.6**

8.5 Avoidance and Mitigation

This section provides an overview of the mitigation proposed to avoid, minimise and manage potential impacts on biodiversity, based on the identified impact pathways. This includes revisions to the Project layout and design to avoid potential impacts in the first instance. The mitigation hierarchy of avoid, minimise, rehabilitate and then offset was used to determine the appropriate mitigation for each impact.

Revisions to the Project design to avoid identified potential impacts were prioritised, such as relocating infrastructure. Where it was not feasible to avoid a potential impact because it would have secondary effects or because it would mean that the broader Project objectives would not be met, mitigation measures were identified. Compensation (offsets) for unavoidable or residual impacts was only applied where avoiding the impact or mitigating it entirely was not possible.

8.5.1 Design Avoidance

This section provides an overview of the design changes implemented for the Project to avoid potential impacts on biodiversity.

8.5.1.1 Native vegetation, threatened flora and TECs

Since project inception in 2020, detailed vegetation assessments have been undertaken to understand the extent of native vegetation present and to inform design development of the Project layout (see **Section 8.2.3.1**). Much of the land within the Project Site has undergone modification over time for agricultural activity and contains little native vegetation, with the exception of a few native scattered trees and native vegetation along linear road reserves. Areas that have been subject to modification were targeted for the placement of project infrastructure.

All 68 WTGs have been located to avoid native vegetation. Only one WTG (WTG7) impacts on the tree protection zone (**TPZ**) of a large, scattered tree that is located between the hardstand and access track (see **Figure 8.24b**). This tree has been captured in the native vegetation removal, but due to being dead, retention may be feasible as minor impacts to the TPZ are unlikely to cause structural harm to the tree.

Most access tracks and underground reticulation cabling have been located within areas of private property containing cropped land or exotic grazing pasture to avoid native vegetation impacts, where possible. Underground reticulation cabling has also been co-located with access tracks where possible to minimise further impacts. Numerous discussions, revisions and site visits were undertaken to achieve this outcome and confirm that the mapped values can sufficiently be avoided at most locations throughout the Project Site. However, some impacts on native vegetation from access tracks and underground cabling were unavoidable due to the need to cross over road reserves which were often found to contain native vegetation.

As all WTGs were located within cropped paddocks, most of the proposed impacts on native vegetation are related to access tracks, underground reticulation and the underground transmission line. Several adjustments have been made over time to the design of these Project components to avoid and minimise the direct impact on native vegetation. This has resulted in a very small residual impact on native vegetation (see **Section 8.6.1.1**).

Table 8.18 provides an overview of key examples of design refinement adopted for these Project components to avoid direct impacts on native vegetation, threatened flora and TECs. This does not represent the full extent of design refinements adopted for the Project, but reflects a selection of key examples to demonstrate the commitment and effort invested by the Proponent to prioritise avoidance.

Table 8.18 Examples of Design Refinements to Avoid Direct Impacts on Native Vegetation, Threatened Fora and TECs

Project component	Description of avoidance	Figure reference
Overhead reticulation cabling	Initial designs of the Project layout involved underground reticulation cabling crossing Naringhil Creek. Further assessment and design development resulted in this section of reticulation being re-designed to be overhead and span this creek crossing.	**Figure 8.18**

Project component	Description of avoidance	Figure reference
	This avoids direct impact on the creek and associated native vegetation mapped adjacent to the creek bed. The overhead alignment shown in **Figure 8.18** is the same alignment initially proposed for the underground reticulation.	
Overhead reticulation poles	One of the four proposed overhead reticulation poles that support the overhead reticulation line spanning Naringhil Creek was originally placed within a patch of native vegetation patch (PGW36). The location of this pole was revised further east to avoid directly impacting on this patch of Plains Grassy Woodland (EVC 55).	**Figure 8.18**
Underground reticulation	Design of the underground reticulation intersects with a patch of Grassy Woodland (EVC175) GW7 along Browns South Road. This section of reticulation will be bored underground to avoid impacting on the patch. This patch extends further south on Browns South Road (but is outside of the Assessment Area and therefore not mapped). As this patch extends further along the roadside, avoidance was not possible, so boring underneath is proposed to avoid impacts.	**Figure 8.19**
	The underground reticulation also intersects with a patch of Heavier soils Plains Grassland (PG70), which is also categorised as EPBC Act listed NTGVVP, along Rokewood Skipton Road. This section of reticulation will be bored under Rokewood-Skipton Road to avoid impacting on the patch.	**Figure 8.20**
Road upgrades along Rankin Road	The concentrated use of the intersection of Henderson Road and Rankin Road has resulted from a revision to the site layout, where previously, additional upgrades and use of Rankin Road to the south was proposed. However, the identification of additional patches of Plains Grassland, significant flora species (Spiny Rice-flower) and a VPO resulted in the layout being refined to avoid any access track works associated with the Project occurring on Rankin Road, between Hendersons Road and Parker Road.	**Figure 8.21**
Underground transmission line	Preliminary native vegetation and targeted flora surveys indicated that the eastern side of Willowvale Road contained more native grasslands than the western side. Therefore, the design for the underground transmission line proposes to locate it within the western side of Willowvale Road.	-

Design of the underground transmission line to avoid and minimise impacts on NTGVVP

The transmission line proposed to connect the Project into the grid was revised from an overhead line to an underground line in response to neighbour and local government (Golden Plains) feedback to avoid visual impacts (see **Section 6.6.3**). Despite potential ecological impacts associated with constructing an underground transmission line, it was decided to proceed with an underground transmission line given the opportunity to rehabilitate the land and leave minimal trace once installed.

The design of the underground transmission line has undergone several revisions to apply the avoid and minimise principals. In addition, a detailed construction methodology has been developed that involves staged works along the transmission line footprint, to minimis potential impacts.

The current construction footprint has sought to minimise impacts to NTGVVP recorded along Willowvale Road as much as feasible, whilst still providing sufficient room to install the infrastructure. The key design features and construction methods that focused on avoiding and minimising impacts to NTGVVP include:

- Locating the construction footprint as close as possible to the existing sealed road surface along the western side of Willowvale Road, to minimise impacts to the NTGVVP within the broader road reserve.
- Minimising the width of the construction footprint as much as feasible, by ensuring all construction activities will be undertaken from the eastern side of the footprint (i.e. away from retained areas of NTGVVP), and any stockpiles will be contained within the footprint.
- Including a 1.35 metre indirect impact footprint area from the western edge of the disturbance area (i.e. direct trench works) to prevent indirect impacts to the retained NTGVVP (this buffer and disturbance area are wholly within the 7 m wide constriction footprint) (see **Section 8.6.1.3**).
- Staging construction works into small sections. Works along Willowvale Road will be split into 50–250 metre segments, progressively working along the road reserve. This approach will minimise the time that construction activities occur at a location, and minimise the amount of time the trench is exposed. Construction within each segment is anticipated to occur over two days, with soil stripped the first day, and trench excavation, cable installation and backfilling in the second day.

An assessment of the Project's residual impact on NTGVVP along the underground transmission line, following implementation of the above design avoidance measures, is provided in Section 8.6.1.3.

FIGURE 8.18

Overhead Reticulation Poles Reticulation to Avoid PGW1

Legend

- Project Site
- Major Watercourse
- Turbine
- Access Tracks
- Overhead Reticulation Pole
- Previous Overhead Reticulation Pole Locations
- Overhead Electrical Reticulation
- Underground Electrical Reticulation
- Wind Turbine Hardstand
- Underground Electrical Reticulation Footprint

EVC

- Plains Grassy Woodland (EVC 55)
- Plains Sedgy Wetland (EVC 647)

0 50 100

Metres

Scale 1:4,000 at A4
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FIGURE 8.19

Underground Reticulation Proposed to be Bored to Avoid GW7 Along Browns South Road

Legend

- Project Site
- Turbine
- Underground Electrical Reticulation
- Wind Turbine Hardstand
- Access Tracks
- Underground Electrical Reticulation Footprint
- Tree
- Roads

EVC

- Grassy Woodland (EVC 175)

0 50 100

Metres

Scale 1:5,000 at A4
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FIGURE 8.20

Underground Reticulation Proposed to be Bored to Avoid PG70 and NTGVVP

Legend

- Roads
- Project Site
- Turbine
- Watertank
- Temporary Concrete Batch Plant
- Underground Electrical Reticulation
- Passing Bay
- Wind Turbine Hardstand
- Underground Electrical Reticulation Footprint
- Underground Boring Area
- Natural Temperate Grassland of the Victorian Volcanic Plain

EVC

- Plains Grassland (Heavier Soils) (EVC 132_61)

0 0.1 0.2

Kilometres

Scale 1:5,000 at A4
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FIGURE 8.21

Access Tracks Designed to Avoid VPO and Spiny Rice-flower

Legend

- Roads
- Project Site
- Spiny Rice-flower
- VPO2 – Vegetation Protection Overlay - Schedule 2
- Turbine
- Underground Transmission Line
- Underground Electrical Reticulation
- Passing Bay
- Wind Turbine Hardstand
- Access Tracks
- Watertank
- Current Onsite Substation Location
- Underground Electrical Reticulation Footprint
- Underground Transmission Line Footprint

EVC

- Plains Grassland (Heavier Soils) (EVC 132_61)

0 0.1 0.2

Kilometres

Scale 1:7,500 at A4
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8.5.1.2 Brolga

Based on the findings of the Level 1 and Level 2 Assessment, a Level 3 Assessment was triggered which requires application of turbine-free buffers for the Project in accordance with the interim guidelines. The findings of the Level 2 Assessment informed development of these buffers.

These turbine-free buffers have been developed and applied to avoid and minimise potential impacts on Brolga. The Proponent has prioritised the application of avoidance principles when it comes to mitigating potential impacts of the Project on Brolga, by relocating turbines which lay within this buffer. The below sections detail the development and application of turbine-free buffers in accordance with the interim guidelines.

Breeding buffers

Despite extensive targeted survey efforts for Brolga during the breeding seasons between 2020 to 2024, the data obtained was not sufficient to inform, with a high level of confidence, a site-specific home range. Therefore, the default 3.2 km buffer around confirmed breeding wetlands, as specified in the interim guidelines, has been applied. This represents the hypothetical breeding home range for the species.

In accordance with the interim guidelines, an additional 300 m extension has been applied to the buffer to minimise disturbance effects, plus an additional 86 m to account for turbine blade length. This resulted in a total 3,586 m turbine-free buffer zone around all confirmed breeding wetlands. The resulting turbine-free buffer zone around Lake Widderin overlapped with the Project Site in the central western section of the layout, while no other breeding buffers intersect with the Project Site.

Flocking buffers

Using the Brolga flocking flights recorded during the 2024 flocking season, a model was developed by Nature Advisory to prepare a home range analysis using Kernel Density Estimation. The model was developed using only flight paths connected to Lake Widderin, meaning movements clustered at and around the flocking site, including those arriving at or departing from it.

The interim guidelines recommend a 5 km turbine-free buffer from confirmed flocking sites. This recommendation is based on the furthest recorded flight distance observed in previous studies, selected as a precautionary measure for wind farm developments in the absence of local data. Based on the flocking surveys conducted at and around the Project, and in accordance with the interim guidelines emphasis on adjusting buffers based on empirical data, a home range spatial analysis was conducted to establish a data-driven turbine-free buffer. Home range analysis is the chosen method as it is considered an objective approach to help define turbine-free buffers for Brolgas.

Nature Advisory recommended using the 99% kernel contour home range to inform the turbine-free buffer from flocking sites. This is considered a precautionary approach as it would include occasional or rare predicted Brolga use during the flocking season.

Based on the interim guidelines, a 300 m buffer was also applied (in addition to the 99% contour) to mitigate indirect disturbance effects, with an additional allowance for the proposed 86 m turbine blade length. This determined the proposed flocking turbine-free buffers shown in **Figure 8.22**.

The proposed turbine-free flocking buffer around Lake Widderin is not a fixed radius, but is instead based on actual field observations. This produced an asymmetric buffer that reflects both observed movement patterns and predicts the areas Brolga are likely to use regularly around the flocking site.

Inclusive of the 386 m extension, the flocking buffer distances around Lake Widderin are detailed in **Table 8.19**.

Table 8.19 Site Specific Turbine-free Flocking Buffer Distances, Includisve of 386 m Extension

Direction	Minimum buffer distance within direction (km)	Maximum buffer distance within direction (km)	Is this buffer wholly covered by the default breeding buffers applied?
North	4.193	4.838	Yes
North-east	2.458	4.375	Yes
East	2.197	3.214	Yes
South-east	2.334	3.598	Yes
South	3.117	3.913	Yes
South-west	2.925	9.005	No
West	4.085	5.943	No
North-west	6.149	3.776	No

The buffer exceeds the default 5 km flocking buffer specified in the interim guidelines in areas where Brolga were frequently observed or predicted to travel greater distances from Lake Widderin (north, south and west). Conversely, it is smaller than the default flocking buffer where Brolga observations and predicted movements indicate limited movement distances from Lake Widderin to the east (towards the Project Site).

As outlined in **Table 8.19**, and shown in **Figure 8.22**, the proposed turbine-free flocking buffers are wholly covered by the default breeding buffers in the direction of the Project site.

It is noted that only one season of flocking data has informed the home range. This absence of data is not from lack of survey effort, but lack of flocking behaviour being undertaken by Brolga at Lake Widderin during the 2021, 2022, 2023, and 2025 flocking seasons. Application of this turbine-free buffer is considered conservative, given Lake Widderin is not consistently used as a flocking site for Brolga and it is considered a one-off flocking site.

The precautionary turbine-free buffers include all detections closest to the Project Site and overlaps with the western section of the Project Area. Incidental Brolga observations from the 2020–2021 bird utilisation surveys included a single detection within the Project Site, which coincides with the 99% contour flocking home range and proposed buffer, further supporting the spatial analysis and the selection of the precautionary turbine-free zone.

Design refinement

Figure 8.22 shows the application of the breeding and flocking turbine-free buffers. The proposed flocking buffer exceeds the breeding buffer to the north-west, west and south-west, however it does not exceed it in the direction of the Project Site. This means the 3,586 m breeding buffer captures the eastern direction of the flocking buffer.

The application of turbine-free flocking and breeding buffers affected seven turbines within the proposed layout issued with the referrals in 2024. **Figure 8.22** shows the interaction of the proposed Brolga breeding buffer of 3,586 m with the referral layout for the Project. The proposed site-specific flocking buffer falls within this buffer.

In response, the Proponent relocated the Project Site boundary further away from Lake Widderin and subsequently relocated the affected turbines (see **Figure 8.23**). To maintain the Project Site at a similar size, new land was added to the south-east of the original Project Site where Brolga has not been recorded.

This, in addition to siting to avoid native vegetation, is evidence of the Proponent implementing the mitigation hierarchy as legislated and truly reflects the scientific understanding of the area.

Implications of the adjusted Project Site boundary

The revised WTG layout and Project Site boundary shown in **Figure 8.23** has since been assessed in all technical assessments prepared to support the environment report and planning permit application. No new impacts have been identified from these design changes, with the findings of all technical assessment remaining unchanged. Surrounding sensitive receptors remain at a similar distance to the previous Project Site boundary, so no changes to potential amenity impacts are anticipated.

The new land parcels added to the Project Site along the eastern boundary in response to the turbine-free brolga buffers have historically been heavily modified for agricultural purposes. The general condition and overall environment of the new land parcels are in keeping with the rest of the Project Site. Field investigations of these new land parcels have confirmed that no native vegetation, threatened ecological communities listed under the EPBC Act or FFG Act, or suitable habitat for threatened fauna species will be impacted by the Project.

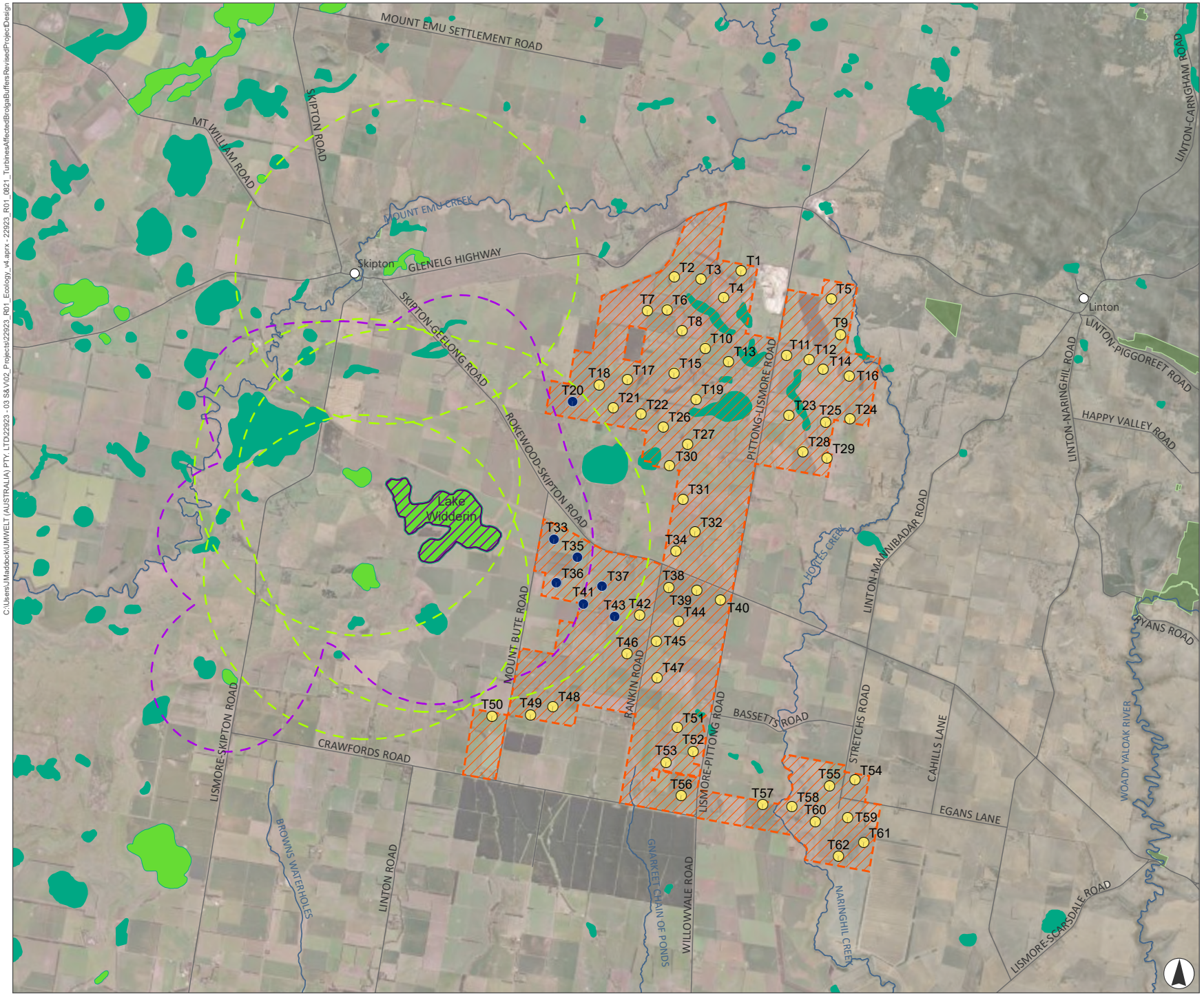

FIGURE 8.22

Turbines affected by Brolga buffers and revised Project design

Legend

- Township
- Project Site boundary referred under the EE Act and EPBC Act
- Turbine Not Affected by Brolga Buffers
- Turbine Affected by Brolga Buffers
- Confirmed Flocking Wetland
- Brolga Flocking Buffer
- 25 Confirmed Breeding Wetlands
- Brolga Breeding Buffer
- DEECA Mapped Wetlands
- Parks and Reserves
- Major Watercourse
- Roads

0 2.5 5

Kilometres

Scale 1:125,000 at A4
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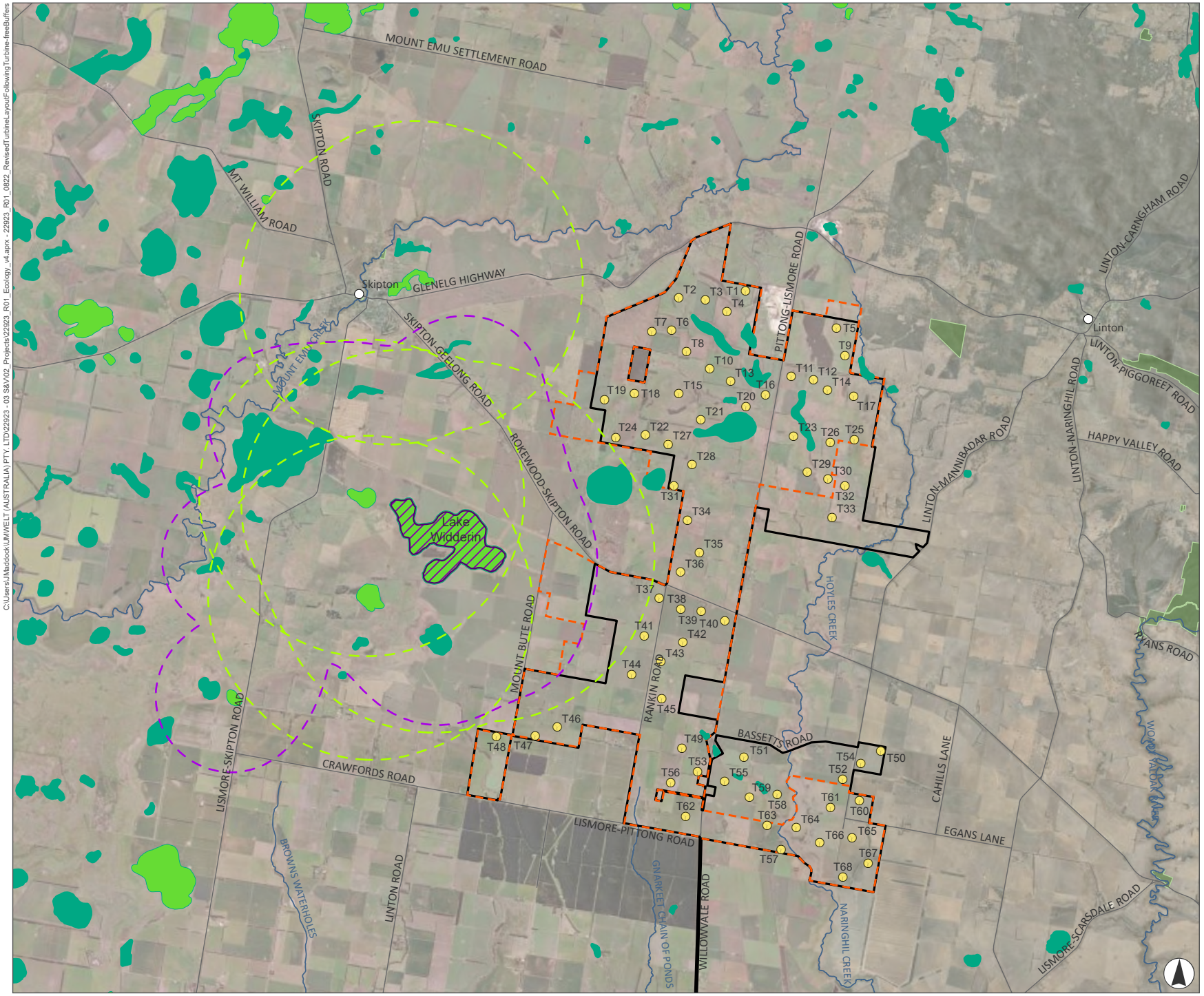

FIGURE 8.23

Revised turbine layout following turbine-free buffers

Legend

- Township
- Project Site
- Project Site boundary referred under the EE Act and EPBC Act
- Turbine
- Confirmed Flocking Wetland
- Brolga Flocking Buffer
- 25 Confirmed Breeding Wetlands
- Brolga Breeding Buffer
- DEECA Mapped Wetlands
- Parks and Reserves
- Major Watercourse
- Roads

0 2.5 5

Kilometres

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8.5.2 Mitigation measures

To further minimise potential impacts on biodiversity features, mitigation measures will be implemented during all phases of the Project.

Table 8.20 outlines the mitigation measures developed to further avoid, minimise, and manage impacts on biodiversity from construction, operation, and decommissioning of the Project. These mitigation measures will be implemented through various environment management plans, protocols and strategies, as detailed in **Section 9.3.2.1**.

Majority of the mitigation measures detailed in **Table 8.20** provide protection and reduce impacts on all flora and fauna species, whilst those which relate to specific species are specified in the table e.g. Brolga specific mitigation.

Table 8.20 Biodiversity Mitigation Measures

MM ID	Mitigation measure	Relevant impact pathway	Project component	Relevant project phase
MM-BD01	**Site inductions** All contractors will be made aware via training and site inductions, of ecologically sensitive areas to minimise the likelihood of inadvertent disturbance to areas marked for retention (No-Go Zones). Native vegetation that is to be retained and any areas of ecological sensitivity (e.g. wetlands, waterways, identified fauna habitat) must be included as a mapping overlay on any construction plans and within the Project CEMP/OEMP.	Removal of native vegetation, listed threatened flora, and TECs. Direct removal of fauna habitat from clearance, earthworks and physical disturbance.	All works	Pre-construction, Construction, Operation Decommissioning
MM-BD02	**Vegetation surveys along the OD transport route** Prior to construction, vegetation surveys will be undertaken at swept paths between the Port of Portland and Skipton at intersections where there are potential direct and indirect impacts to any vegetation, to confirm there is no native vegetation present. Should native vegetation be identified, avoidance will be prioritised. If avoidance is not achievable, any native vegetation removal required would seek planning approval under clause 52.17 of the relevant planning scheme.	Removal of native vegetation, listed threatened flora, and TECs.	Transport route	Pre-construction
MM-BD03	**Native vegetation protection** No-Go Zone fencing will be installed to minimise impacts to native vegetation, known populations of significant flora and fauna habitats through protecting retained areas of native vegetation and wetlands to clearly demarcate these from the Construction Footprint. No-Go Zone fencing will be erected: • Along the edge of the construction footprint when located within or adjacent to patches of native vegetation and/or wetlands. • Within 2 m of native vegetation where the construction footprint is located within 15 m proximity to patches of native vegetation.	Removal of native vegetation, listed threatened flora, and TECs. Direct removal of fauna habitat from clearance, earthworks and physical disturbance.	All works	Pre-construction, Construction

MM ID	Mitigation measure	Relevant impact pathway	Project component	Relevant project phase
MM-BD04	**Natural Temperate Grassland of the Victorian Volcanic Plain** The following species-specific measures will be incorporated into the Project's CEMP, and will be implemented prior to, and during construction to protect retained areas of NTGVVP: • No-go zone fencing and/or bunting will be erected around works areas in proximity to known areas of the NTGVVP (along the western edge of the proposed trench construction footprint). • Signs highlighting the importance and significance of the NTGVVP community will be secured to the no-go fencing installed along Willowvale Road. • Installation of the underground cabling to be undertaken in short sections (50–250 m) that progress along Willowvale Road, to reduce exposure of the environment to risks such as hydrology changes, weed invasion and sedimentation. • Construction of each section is anticipated to take one day, to avoid any exposed trenches overnight and reduce the risk of disturbance to adjacent vegetation. • Soil removed for the cable installation will be backfilled to match pre-disturbed ground levels. • Vehicles / plant machinery will not park or be stored on any previously backfilled areas, to avoid soil compaction. • Any disturbed areas within the construction footprint along Willowvale Road will be monitored and managed for weeds, to prevent the spread and/or establishment of new weeds into the retained areas of vegetation during construction. • Any stockpiles will be located as far as practical from the retained vegetation, and measures implemented to control erosion/sedimentation into the adjacent retained vegetation. Stockpiles will be monitored to ensure no weeds establish.	Removal of native vegetation, listed threatened flora, and TECs. Direct removal of fauna habitat from clearance, earthworks and physical disturbance.	Transmission line corridor	Pre-construction, Construction

MM ID	Mitigation measure	Relevant impact pathway	Project component	Relevant project phase
MM-BD05	**Tree Protection Zones** Tree Protection Zones (TPZs) will be implemented to prevent indirect losses of retained trees during construction activities, where works are located within 15 m of any trees that are planned to be retained. At a minimum standard a TPZ must consider the following: • A TPZ of trees should be a radius no less than 2 m or greater than 15 m. • Construction, related activities and encroachment (i.e. earthworks such as trenching that disturb the root zone) should be excluded from the TPZ. • No-Go Zone fencing will be erected along the edge of the TPZ of a scattered tree where the construction footprint is located within 15 m of the tree. • Where encroachment is 10% or more of the total area of the TPZ, the tree should be considered as lost and offset accordingly (unless an arboricultural report specifies otherwise). • Directional drilling may be used for works within the TPZ without being considered encroachment. The directional bore should be at least 600 millimetres deep. • The above guidelines may be varied if a qualified arborist confirms the works will not significantly damage the tree (including stags / dead trees). In this case the tree would be retained, and no offset would be required. • Where the minimum standard for a TPZ has not been met an offset may be required.	Removal of native vegetation, listed threatened flora, and TECs. Direct removal of fauna habitat from clearance, earthworks and physical disturbance.	All works	Pre-construction, Construction
MM-BD06	**Offsets** Appropriate offsets for native vegetation losses based on the detailed design will be secured in accordance with the *Guidelines for the removal, destruction or lopping of native vegetation* (DELWP 2017) and the *Environment Protection and Biodiversity Conservation Act 1999* Environment Offsets Policy (DSE, 2012).	Removal of native vegetation, listed threatened flora, and TECs.	All works	Pre-construction, Construction (for any changes)

MM ID	Mitigation measure	Relevant impact pathway	Project component	Relevant project phase
MM-BD07	**Pre-clearance surveys** Flora A pre-clearance survey will be developed with input from species experts, to confirm if any FFG Act listed species are present within the construction footprint prior to native vegetation clearance that were not able to be confirmed in baseline surveys (e.g. for Golden Cowslips or Swamp Everlasting). Should listed species be confirmed as present, advice will be provided on potential avoidance measures and/or assessment and permitting requirements as part of secondary consents. Fauna A pre-clearance survey and fauna handling protocol will be developed. Where fauna habitat is identified, a suitably qualified wildlife handler ('wildlife spotter') holding a relevant and current authorisation under the *Wildlife Act 1975*, will be present to: • Check for fauna prior to clearing. • Salvage and relocate any wildlife encountered during site clearance work. • Manage any injured wildlife with local wildlife carers.	Direct impacts on fauna from vehicle strikes / trench entrapment. Direct removal of fauna habitat from clearance, earthworks and physical disturbance.		Pre-construction, Construction, Operation
MM-BD08	**Weed and pest control** Prepare a Biosecurity Management Plan and Hygiene Protocol to control Weeds of National Significance, noxious weeds listed under the *Catchment and Land Protection Act 1994* (**CaLP**) and environmental weeds, as identified in Section 3.4.5 and Appendix 1.1 of the Ecological Assessment (**Appendix C**). Weed controls will include: • Undertake a survey to map the occurrence and distribution of all Weeds of National Significance and/or CaLP Act listed noxious weeds that occur within the construction footprint, to provide a baseline of extent prior to construction commencing.	Habitat and vegetation degradation from indirect impacts.	All works	Pre-construction, Construction, Operation, Decommissioning

MM ID	Mitigation measure	Relevant impact pathway	Project component	Relevant project phase
	• Prepare and implement a monitoring and control program for Weeds of National Significance and CaLP Act listed noxious weed that occur within the construction footprint during the construction, operational and decommissioning phases, to ensure level of cover does not exceed baseline levels, and that no new weed species are introduced. • Engage experienced land management contractor/s familiar with native plant and weed identification and possess a detailed working knowledge of herbicide selection and use and mechanical removal techniques to undertake weed control. • Ensure induction of all contract staff details the requirements for vehicles and equipment to be free of mud and plant material prior to entering work sites. • Establish and maintain a hygiene cleaning facility (e.g. designated wash-down locations for machinery, vehicles, tools and footwear). • Ensure imported materials are weed free.			
MM-BD09	**Waterway crossings** To construct the underground transmission line where it crosses Gnarkeet Chain of Ponds on Lismore-Pittong Road, it will either be trenched during a dry period with topsoil reinstated to natural levels, or bored under the waterway to avoid impacts. Waterway crossings will be designed and constructed in accordance with CMA requirements, including any works on waterway permits if required.	Habitat and vegetation degradation from indirect impacts.	Transmission line	Construction
MM-BD10	**Sediment and erosion control** Ensure that industry standard sedimentation and pollution control measures, including progressive rehabilitation, are undertaken at all times, in accordance with Environment Protection Authority guidelines (EPA 2020a; EPA 2020b; Victorian Stormwater Committee 1999) to prevent offsite impacts to waterways and wetlands that support habitat for wetland dependent flora and fauna species. Application of industry standard erosion and sediment control measures will be included in the Project CEMP/OEMP.	Habitat and vegetation degradation from indirect impacts.	All works	Pre-construction, Construction, Operation

MM ID	Mitigation measure	Relevant impact pathway	Project component	Relevant project phase
MM-BD11	**Surface water runoff** Assess the flood behaviour and hydrologic conditions of a post development impact to ensure afflux from uncontrolled runoff and culverts do not change pre-existing flood conditions in adjacent habitat (i.e. outside construction footprint).	Habitat and vegetation degradation from indirect impacts.	All areas	Construction, Operation
MM-BD12	**Indigenous species** As indigenous flora provides valuable habitat for indigenous fauna, any landscape plantings that are undertaken as part of the proposed works will be conducted using indigenous flora species.	Habitat and vegetation degradation from indirect impacts.	All areas	Construction, Operation
MM-BD13	**Rehabilitation of disturbed areas** The rehabilitation of any temporarily disturbed areas as part of construction not required for operations and maintenance will be reinstated with like for like grass species based on the pre-construction vegetation. Areas of native vegetation impacted within the construction footprint along Willowvale Road and Lismore - Pittong Road will be revegetated with local provenance seeds (i.e. direct seeded) upon completion of the works. A Revegetation Plan will be prepared to detail the proposed methodology for revegetation along Willowvale Road within the underground transmission line construction footprint, noting it is restricted to areas that previously contained native vegetation. This plan will include the proposed species composition, method of revegetation, timing, maintenance works (e.g. watering regime / weeding), monitoring requirements and overall survival targets. Revegetation will consist of grassland species, such as Kangaroo Grass (along Willowvale Road) and Wallaby-grass (along Lismore - Pittong Road) to replicate the current species present at each location. Where able, seed will be harvested from the construction footprint prior to commencement of works and then re-sown upon completion of the works (timeframes subject to seed harvesting / ripening period).	Removal of native vegetation, listed threatened flora, and TECs.	All areas	Construction, Operation

MM ID	Mitigation measure	Relevant impact pathway	Project component	Relevant project phase
MM-BD14	**Dust control** Dust control measures will be implemented and applied by the Project during construction and operation if required. Standard controls relating to air quality and dust management that will be applied to the Project are: • Use of water sprays on unsealed roads and surfaces. • Implement speed limits on vehicular traffic along unsealed haulage and internal access roads/tracks to a speed that also minimise the risk of vehicle fauna strikes. • Limit duration of exposed soil wherever possible. • Cover stockpiles of spoil where expected to be in situ for more than 1 month and/or if strong winds are forecast.	Temporary disturbance to fauna caused by factors such as noise, dust, light and vibration.	All areas	Construction, Operation
MM-BD15	**Maintenance activities and refuelling** Maintenance activities and refuelling will be carried out at an appropriate distance with appropriate spill protection measures in place to avoid impacts to vegetation, habitat, and waterways, in accordance with relevant regulatory requirements. Regulations, guidelines and industry standard measures must be adhered to for the storage, handling, transport and use of materials that may contaminate the environment including (but not limited to): • *Environment Protection Act 2017* • Dangerous Good (Storage and Handling) Regulations 2012 • Liquid storage and handling guidelines (EPA publication 1698) • The Storage and Handling of Flammable and Combustible Liquids – Australian Standard 1940:2017 • Advice from WorkSafe Victoria.	Habitat and vegetation degradation from indirect impacts.	All areas	Pre-construction, Construction, Operation, Decommissioning

MM ID	Mitigation measure	Relevant impact pathway	Project component	Relevant project phase
MM-BD16	**Trench entrapment** A trench inspection protocol will be developed and included in the Fauna Handling Protocol. Trenching works will manage any open pits or trenches to reduce potential for fauna entrapment in accordance with the APGA Code of Environmental Practice: Onshore Pipelines (AGPA 2022) through measures such as: • Minimising the length of trench open at a time. • Minimising the amount of time trenches and other excavations are open to what is practicable based on construction methodology and safety in design. • Provide exit ramps with slopes less than 45 degrees for wildlife where practicable and safe to do so. Exit ramps to be installed at the ends of trenches. • Daily inspections of open trenches for wildlife. • Removal of trapped fauna as required, by a suitably qualified wildlife handler holding a relevant and current authorisation under the *Wildlife Act 1975*. • Checking for fauna prior to backfilling trenches. • Ensuring fauna are discouraged from work areas by erecting barriers where practicable.	Direct impacts on fauna from vehicle strikes / trench entrapment.	All areas	Construction
MM-BD17	**Lighting** Any externally visible artificial lighting will consider the potential effects on wildlife. In areas of potential disturbance to sensitive fauna species the following measures will be implemented in accordance with the National Light Pollution Guidelines for Wildlife (DCCEEW 2023c): • Use of lighting technology that limits the spread of light outside of the works area and into adjacent habitat including keeping lights close to the ground and shielding lights to avoid light spill beyond the works area or facility.	Temporary disturbance to fauna caused by factors such as noise, dust, light and vibration.	All areas	Pre-construction, Construction, Operation, Decommissioning

MM ID	Mitigation measure	Relevant impact pathway	Project component	Relevant project phase
MM-BD18	**Vehicle collision** Measures to reduce the risk of wildlife-vehicle interactions will be implemented, including: • Install signage warning of the presence of wildlife and ensuring signage is maintained. • Record any vehicle-wildlife interactions to inform review of management measures. • Limit vehicle movements to designated access tracks and local roads.	Direct impacts on fauna from vehicle strikes / trench entrapment.	All areas	Pre-construction, Construction, Operation, Decommissioning
MM-BD19	**Bat and Avifauna Management Plan (BAM Plan)** A final BAM Plan will be prepared. The aim of the final BAM Plan is to monitor potential impacts on listed and non-listed bird and bat species from turbine collision and to provide a strategy to adaptively manage and mitigate impacts. The final BAM Plan will detail mitigation measures that minimise the collision risk for certain species and prescribe a detailed monitoring program, including: • Targeted Black Falcon surveys during breeding season (May to November) prior to construction, to further understand likelihood of occurrence, site utilisation and collision risk. • Methods proposed for the operational phase bird and bat monitoring surveys and mortality detection program, to be undertaken once the wind farm is operational (once the first turbine is operational). This will include: ○ Targeted monitoring for species of concern for the first two years of operation (Brolga and White-throated Needletail): ▪ Monthly monitoring of Brolga for opportunistic observations as well as bi-seasonal inspections at Lake Widderin and other wetland habitats located within the Project Site boundary where brolga have previously been observed (a minimum of twice per breeding season and twice per flocking season).	Potential bird and bat collisions with WTG.	WTGs	Operation

MM ID	Mitigation measure	Relevant impact pathway	Project component	Relevant project phase
	▪ Annual surveys for migratory birds (including White-throated Needletail), involving two rounds of fixed point counts and roaming surveys per year. ○ Mortality detection monitoring for a minimum of five years. ○ An annual report will be prepared at the end of each year, for the five-year monitoring program, and provided to DEECA and DCCEEW. ○ An incident report will be prepared and provided to DEECA (and DCCEEW if EPBC Act listed) if a listed species is found dead or injured during carcass searches. • Identify impact triggers for listed and non-listed species requiring a management response to reduce impacts. • Immediate reporting of an impact trigger for listed bird or bat species to the Proponent once the species is identified, who will report it to DEECA and DCCEEW within two business days of it being recorded. • If an impact trigger for non-listed species occurs, an evaluation of impacts to the non-listed species will be undertaken. DEECA will be notified of the impact trigger within two business days of recording the event. • Detailed actions as a proposed mitigation response if an impact trigger is met. The BAM Plan will list mitigation measures that may be implemented to avoid and minimise further impact to affected species.			
MM-BD20	**Trial Plan** Further investigation into the use and implementation of automated detected systems at the Project Site to reduce collision risk for Brolga will be undertaken through a targeted research trial, to be documented in a Trial Plan. A Trial Plan will be prepared and incorporated into the BAM Plan and will include:	Potential bird and bat collisions with WTG.	WTGs	Operation

MM ID	Mitigation measure	Relevant impact pathway	Project component	Relevant project phase

	• A trial of a technology selected by the Proponent, focused on Brolga as a species of interest:
	  ○ Within the area of interest under the Brolga guidelines (proposed turbines within 5km of Lake Widderin)
	  ○ To take effect from the commencement of wind farm operation (post turbine commissioning)
	• A trial period of three years, including:
	  ○ Approximately 6 months of pre-trial activities ahead of wind farm final commissioning, including technology selection and installation to ensure seamless integration with turbine control systems.
	  ○ Approximately 24 months of trial technology operation on-site (including two potential Brolga flocking seasons).
	  ○ Approximately 6 months of post-trial activities, including analysis and reporting and engagement with key stakeholders and peer reviewers.
	• The results of the trial will determine if a technology of choice should be implemented as part of ongoing site operations based on the value and effectiveness or whether further research is warranted.
	The Trial Plan will be prepared for DEECA consideration and inputs, noting the review must align with the project schedule to enable pre-trail activities, including procurement and integration of the preferred trial technology as part of the OEM selection process/detailed design.			

MM-BD21	**Brolga Compensation Plan** A Brolga Compensation Plan will be prepared in consultation with DEECA prior to Project construction in accordance with the *interim guidelines for the assessment, avoidance, mitigation and offsetting of potential wind farm impacts on the Victorian Brolga population* (DSE 2012). The aim of the Brolga Compensation Plan is to achieve net zero impact on the Victorian Brolga population.	Potential bird and bat collisions with WTG.	All areas	Pre-construction

8.6 Residual Impacts and Offsets

This section discusses the potential residual impacts on biodiversity values associated with construction, operation and decommissioning of the Project.

The main potential impact on biodiversity during construction would be removal of native vegetation, and TECs, including habitat for threatened species. Construction of the Project requires minimal direct removal of native vegetation, TECs and habitat for threatened species, to accommodate permanent and temporary infrastructure.

Construction of the Project also has potential to result in injury or death to terrestrial fauna, as well as indirect impacts on fauna such as temporary disturbance to habitat through noise and dust. There is also the potential for habitat degradation such as through the introduction of pests and weeds.

The main pathway for biodiversity to be impacted during operation of the Project is through the collision of birds and/or bats with WTGs.

Mitigation measures in **Section 8.5** were proposed in response to the potential impacts from the Project. The resultant residual impacts following implementation of mitigation measures are described below.

8.6.1 Removal of Native Vegetation, Listed Threatened Flora, and TECs

8.6.1.1 Native vegetation

Approximately 15.8 ha of native vegetation was recorded within the Assessment Area. Following revisions to the Project's design (see **Section 8.5.1.1**), there is a small, unavoidable residual impact on native vegetation and TECs.

Construction of the Project would impact on 1.64 ha of native vegetation, as outlined in **Table 8.21** and shown on **Figure 8.24.** WTG7 impacts on the TPZ of a large, scattered tree, that is located between the WTG hardstand and a proposed access road. This tree has been captured in the native vegetation removal (see **Figure 8.24b**), but due to being dead, retention may be feasible as minor impacts to the TPZ are unlikely to cause structural harm to the tree.

For detailed mapping of impacted native vegetation, threatened flora and TECs, refer to Figure 3 of the Ecological Assessment (**Appendix C**).

Native vegetation impacts are associated with the following Project components:

- Underground electrical reticulation (0.0105 ha)
- Underground transmission line along Willowvale Road (1.143 ha)
- Local road upgrades, including three swept paths (0.266 ha)
- Internal access tracks (0.048 ha and one large, scattered tree equating to 0.07 ha)
- Swept paths of intersection modifications for oversized vehicle delivery (0.081 ha).

Table 8.21 Native Vegetation Impacts

	Corangamite Shire impact	Golden Plains Shire impact	Total native vegetation impact
Total extent of native vegetation removal	0.219 ha (including 1 large tree)	1.421 ha	**1.64 ha (including 1 large tree)**
EVCs to be removed	Plains Grassland (EVC 132_61) Grassy Woodland (EVC 175)	Plains Grassland (EVC 132_61)	

Grassy Woodland native vegetation is being impacted at two locations – upgrade works at site entry point 5, and near WTG7 to accommodate a new access track. The swept path at site entry 5 impacts on two patches of Grassy Woodland (GW2 and GW11). The impact to GW2 accounts for the direct loss from the access track upgrade, and the indirect loss anticipated from fragmenting out a smaller area that will be located between an existing farm access track and the new access track, that will be exposed to edge effects and at risk of degrading over time. In addition, a small cluster of recruiting Long-leaf Box within GW11 is included in the impact assessment, to allow trucks to shift west if required to avoid any overhanging branches of the adjacent large trees in GW10 (unimpacted). GW11 patch is included as a conservative measure, and will only be removed if there is a significant access constraint. In addition, a small section of the northern corner of GW6 is included as impacted to accommodate a new access track between WTG7 and WTG6.

All patches of Plains Grassland (PG18, PG65, PG17, PG63, PG64 and PG11) along Rankin Road (north of Hendersons Road) have been considered impacted in the calculation of native vegetation impacts, equating to 0.266 ha. While all these patches are not entirely within the construction footprint, they have been assumed impacted to allow for the upgrade of Rankin Road. Earlier assessments of impacts along this section of Rankin Road sought to retain some patches. However, it was determined that all patches would be included in the impact assessment to account for upgrade and maintenance works along the road, and potential indirect impacts from dust, edge effects and vehicle use of the road.

The impacts to the three patches of Plains Grassland (PG16, PG66 and PG67 on **Figure 8.24d**) at the intersection of Henderson Road and Rankin Road are unavoidable, as this will function as the main intersection for access to the O&M facility, and access to WTG 44 and Turbine 45. Given that high levels of traffic are anticipated to use this area, the three linear patches are all conservatively considered impacted as a result of the intersection upgrade (even though they do not all entirely fall within the construction footprint).

Prior to construction works commencing, fencing will be installed around retained areas of native vegetation to clearly demarcate these as No-Go Zones. Fencing will be installed along the edge of the construction footprint when located within patches of native vegetation, and within 2 m of native vegetation where the construction footprint is located within 15 m of patches of native vegetation (see mitigation measure MM-BD03). All contractors will be made aware of areas of native vegetation to minimise inadvertent disturbance to these No-Go Zones, with native vegetation to be mapped on construction plans (see mitigation measure MM-BD01).

Tree Protection Zones (**TPZs**) will also be implemented to prevent indirect losses of retained trees during construction activities, where works are located within 15 m of any trees that are planned to be retained (see mitigation measure MM-BD05).

The overall offset requirement for native vegetation removal for the Project is 0.704 General Habitat Units and one Large Tree (see **Table 8.22**). According to DEECA's Native Vegetation Offset Register there are six offset sites within the Corangamite CMA that can be used to satisfy the General Habitat Unit offset requirement for each LGA.

The native vegetation offsets are proposed to be met at a third party offset site. An offset register search statement identifying the current availability of offsite sites is provided in Appendix 5 of the Ecological Assessment (**Appendix C**), which provides evidence that the offset obligation can be secured without any difficulty should a permit be approved for the Project.

Table 8.22 Native Vegetation Offset Requirements

	Corangamite Shire impact	Golden Plains Shire impact	Total native vegetation impact
General offsets required	0.073 General Habitat Units	0.631 General Habitat Units	**0.704 General Habitat Units**
Large Trees	1	0	**1**
Catchment / council	Corangamite CMA / Corangamite Shire	Corangamite CMA / Golden Plains Shire	Corangamite CMA / Corangamite and Golden Plains Shire
Minimum Strategic Biodiversity Value	0.3956	0.2861	0.3009

Areas of native vegetation impacted within the construction footprint along Willowvale Road and Lismore - Pittong Road will be revegetated with local provenance seeds (i.e. direct seeded) upon completion of the works (see mitigation measure MM-BD13).

A Revegetation Plan will be prepared to detail the proposed revegetation of these locations, noting it is restricted to areas that previously contained native vegetation (see mitigation measure MM-BD13). Revegetation will consist of grassland species, such as Kangaroo Grass (along Willowvale Road) and Wallaby-grass (along Lismore - Pittong Road) to replicate the current species present at each location. Where able, seed will be harvested from the construction footprint prior to commencement of works and then re-sown upon completion of the works (timeframes subject to seed harvesting / ripening period).

Weed control will be undertaken (as a requirement of the Project in general), which will include preventing the establishment of weeds within cleared areas prior to revegetation.

No other areas are proposed to be revegetated with local provenance (native) flora species, as they are either subject to ongoing disturbance or within maintenance footprints. Any areas of bare soil within these locations will be direct seeded with a sterile grass species, such as sterile rye-grass, to prevent weed infestations establishing.

Assuming the footprint of operational and decommissioning works would occur within the existing construction/ footprint, no further direct impacts on native vegetation from operation and decommissioning of the Project are anticipated beyond those that occur during construction and required for ongoing maintenance of areas e.g. vegetation management associated with trimming/mowing to maintain safety

8.6.1.2 Listed flora species

Of the three listed flora species recorded during targeted surveys, only FFG Act listed Pale Swamp Everlasting is proposed to be impacted. Spiny Rice-flower and Yarra Gum have been avoided by the construction footprint.

Construction the Project would impact on all seven Pale Swamp Everlasting individuals recorded on Rankin Road and Willowvale Road. All of these individuals are included in the native vegetation impact assessment for the Project, due to occurring within patches of native vegetation proposed for removal or occurring within the construction footprint.

To ensure no further unexpected impacts on listed flora species occur during construction, No-Go Zone fencing will be installed around areas of native vegetation to be retained to protect any listed flora species that may be present (see mitigation measure MM-BD03).

Three flora species listed as 'General Protected' flora under the FFG Act were observed within the Assessment Area - Common Onion-orchid (*Microtis unifolia*), Slender Sun-orchid (*Thelymitra pauciflora*), and Common Golden Moths (*Diuris chryseopsis*). These species were commonly observed in higher quality patches of native vegetation along road reserves and are predominately avoided by the construction footprint. With the exception of Common Golden Moths, where the Project would impact on a population of 213 individuals associated with the temporary upgrade works at site entry point 5 (see **Figure 8.24**). Pre-clearance surveys would be undertaken prior to construction to confirm presence or lack of, threatened flora species. Should FFG Act listed species be identified during these surveys, a management strategy will be developed with input from species experts.

8.6.1.3 Threatened Ecological Communities

Construction of the Project would directly impact on two listed TECs, as outlined in **Table 8.23.**

Table 8.23 Impacts on Threatened Ecological Communities

TEC	Conservation status		Total extent of impact
	EPBC	FFG	
Natural Temperate Grassland of the Victorian Volcanic Plain	CR	-	1.234 ha
Western (Basalt) Plains Grassland Community	-	Th	0.339 ha

Natural Temperate Grassland of the Victorian Volcanic Plain

Construction of the underground transmission line along Willowvale Road would result impact on 1.234 ha of NTGVVP. This is about one third of the 4.062 ha of NTGVVP recorded within the Assessment Area along Willowvale Road. This impact on 1.234 ha accounts for both direct and indirect impacts on patches of NTGVVP within the construction footprint. This impact is split across 13 low to moderate quality discrete patches of the community, which occurred as fragmented remnants along the western side of Willowvale Road.

As discussed in **Section 8.3.1.1**, NTGVVP recorded in the Assessment Area is split across 16 patches, all low to moderate quality. The location of the NTGVVP patches within the road reserve and adjacent to an agricultural paddock with no current protection, has resulted in the community being exposed to ongoing vehicle and agricultural disturbances. The Willowvale Road reserve would have once supported a contiguous corridor of NTGVVP, however has become fragmented due to these ongoing disturbances and the increased cover of exotic grasses in areas of the road reserve.

The construction footprint would only impact on the eastern edge of 13 discrete patches of NTGVVP along the road reserve of Willowvale Road, which are all fragmented remnants of the community. These edge impacts would only slightly reduce the extent of each patch (see **Figure 8.24**). However, as the minimum patch size threshold for NTGVVP is 0.05 ha or 0.5 ha, any patches that have been reduced to a retained area of less than 0.05 ha has been included in the impact assessment and assumed lost.

Table 8.24 provides a summary of the Project's impact on 13 of the 16 recorded patches of NTGVVP within the Assessment Area. Of these 13 patches, the largest reduction in extent is 0.420 ha, which occurs to PG38, that has an overall size of 1.109 hectares and was the largest patch of NTGVVP recorded. All other impacts to the NTGVVP patches are of an area of 0.163 hectares or less, with six patches having less than 0.099 hectares of impact.

Table 8.24 Summary of Impact to Natural Temperate Grassland of the Victorian Volcanic Plain TEC

Patch ID	Overall size of patch	Impacted extent	Retained extent (ha)
PG12	**0.286**	**0.0429**	**0.2431**
PG20	**0.516**	**0.1633**	**0.3527**
PG22	**0.170**	**0.013**	**0.1562**
PG24	**0.281**	**0.0986**	**0.1824**
PG25	**0.228**	**0.0679**	**0.1601**
PG26	**0.460**	**0.1294**	**0.3306**
PG28	0.102	0.00	0.102
PG30*	**0.056**	**0.056 (0.0007)**	**0.000 (0.0493)**
PG36	**0.097**	**0.0286**	**0.0684**
PG38	**1.109**	**0.4206**	**0.6884**
PG42*	**0.090**	**0.090 (0.0455)**	**0.000 (0.0445)**
PG44*	**0.055**	**0.055 (0.0075)**	**0.000 (0.0474)**
PG45	**0.092**	**0.0108**	**0.0812**
PG48*	**0.056**	**0.056 (0.0205)**	**0.000 (0.0355)**
PG52	0.060	0.00	0.060
PG70	0.4122	0.00	0.4122
Total	**4.062**	**1.234**	**2.835**

Table notes:

Impacted patches are noted in bold.

** Indicates that the patch size will fall below the 0.05 ha minimum size threshold to qualify for a patch of NTGVVP, therefore is considered entirely lost. The area of physical disturbance and physical retention of these patches is provided in brackets.*

As noted above, the construction footprint is anticipated to impact on 1.234 ha of NTGVVP, which includes both direct and indirect impacts. Within the construction footprint, a 1.35 m indirect impact footprint area along the western edge of the disturbance area (i.e. the 3.15 m trenched area where the cable will be installed) has been included to capture indirect impacts that may occur to the NTGVVP located directly adjacent to the physical disturbance footprint. No vegetation within the indirect impact footprint area will be physically removed.

The 1.35 metre indirect impact footprint adjacent to the disturbance area is considered sufficient to protect the adjacent retained NTGVVP from indirect impacts resulting from the installation of the underground transmission line due to:

- The short-term nature of the disturbance. All ground disturbance will be completed in a day (i.e. soil removed and reinstated in a day) to minimise local environment / microclimate disturbance to the retained NTGVVP.
- Standard construction mitigation measures will be implemented prior to and during construction, such as dust control, no-go zone fencing, sediment control, site inductions, equipment hygiene, storage requirements, stockpile management etc, to mitigate and prevent indirect impacts to the retained areas of NTGVVP.
- Weed control works will be undertaken during and after construction, following a Biosecurity Management Plan, to prevent weed encroachment into the retained NTGVVP.

Prior to commencement of works, a No-Go Zone fence and sedimentation fence will be installed directly along the western edge of the proposed disturbance area to protect the adjacent retained areas of NTGVVP from indirect impacts such as sediment and vehicle or plant disturbance. Physical disturbance of the vegetation and ground will then occur over a two-day period within the disturbance area, but no vegetation within the indirect impact footprint area will be physically removed. Upon completion of the installation, the removed soil will be backfilled up to the pre-disturbed ground level. Any excess soil will be removed from site.

Works along Willowvale Road will be split into 50 to 250 metre segments, progressively working along the road reserve. This approach will minimise the time that construction activities occur at a location and minimise the amount of time the trench is exposed. Construction within each segment is anticipated to occur over two days, with soil stripped the first day, and trench excavation, cable installation and backfilling in the second day. No infrastructure will be present at surface level, with the exception of signage.

During construction, specific measures will be implemented to ensure protection of retained areas of the NTGVVP community. These include fencing and/or bunting around works areas in proximity to known areas of the NTGVVP community and installing signs highlighting the importance and significance of the community at the entrance to these work areas (see mitigation measure MM-BD04).

Following completion of construction, the construction corridor along Willowvale Road will be revegetated with local provenance seeds (i.e. direct seeded) upon completion of the works (see mitigation measure MM-BD13). Revegetation will consist of grassland species, such as Kangaroo Grass to replicate the current species present along Willowvale Road. A Revegetation Plan will be prepared to detail the proposed revegetation within the transmission line construction footprint along Willowvale Road (see mitigation measure MM-BD13).

The Project would not fragment or increase fragmentation of the community as only the edges of affected patches would be impacted. No individual patches would be fragmented. The ecological function of the community would not be altered as a result of the Project's construction due to the small nature of impact at each patch along the construction footprint.

An assessment of the Project's impact on NTGVVP against the significant impact guidelines (see **Table 8.25**) demonstrates that the Project would reduce the extent of 13 patches by 1.234 ha, however no other criteria would be met. Therefore, the Project is **considered to result in a significant impact** on this TEC.

Offsets are proposed to be secured to offset the impacts on NTGVVP. To offset the impact to 1.234 ha of NTGVVP, it is estimated that an offset site between 6 – 13 hectares will be required (subject to offset site condition and available gain). An offset site that meets the requirements of the Project will be secured in accordance with the EPBC Act environmental offsets policy (DSEWPC 2012) and the offset assessment guide calculator. The Proponent, in partnership with ecology experts has been and continues to engage in investigations of potential sites to offset the proposed impact to NTGVVP.

Investigations into potential offset sites are currently underway and include an assessment of both third and first party offset sites. Engagement with native vegetation offset brokers to help locate suitable offset site/s for the Project has commenced, along with an investigation of landholders within the footprint of Proponent-owned projects, to see if there is the possibility to establish a first party offset site.

The offsets will be secured by the Proponent following approval of the Project and as a condition of consent. The site will be secured, likely via a conservation covenant registered on title under the *Victorian Conservation Trust Act 1972* and established through Trust for Nature (TFN) or through DEECA with a Section 69 agreement under the *Conservation, Forests and Land Act 1987*. An Offset Management Plan (OMP) will be created for the site to the satisfaction of DCCEEW, TFN/DEECA and the landowner, to be implemented by the landowner following purchase of the offsets and registration of the covenants on title. The OMP will include identification of threats, management actions to be undertaken (including timing, responsibility and standards to be achieved) and a demonstration of how the site meets the EPBC Act Environmental Offsets Policy.

Should the Project be approved, the next step for prospective offset sites would be to determine their suitability in accordance with the EPBC Act Environmental Offsets Policy, which will involve further site assessment by ecologists and liaising with DCCEEW to ensure the sites align with Commonwealth requirements.

Table 8.25 Assessment of the Project against the significant impact guidelines for Critically Endangered Ecological Communities (NTGVVP)

Criteria	Assessment
Reduce the extent of an ecological community.	**Yes.** The proposed action will result in a minor reduction in extent of the ecological community, with the proposed removal of a maximum of 1.234 ha out of a mapped area of 3.399 ha of the community within the Willowvale Road corridor. This impact accounts for 36% of the overall mapped extent of NTGVVP within the Flora Assessment Area. The proposed impacts are all directly associated with the construction of the underground transmission line, where the western edge of the construction footprint impacts upon the eastern edge of the NTGVVP patches, reducing their extent, but not removing any patches entirely.
Fragment or increase fragmentation of an ecological community, for example by clearing vegetation for roads or transmission lines	**No.** The NTGVVP community is present within several road reserves in the local region and is surrounded by a modified agricultural landscape. The 1.234 ha proposed to be impacted for the Project occurs within the Willowvale Road reserve. The existing patches of NTGVVP within this road reserve have already been subject to past disturbance, through the creation of the road, machinery disturbance to the vegetation within the road reserve, creation of access tracks/driveways and roadside drainage lines, and adjacent paddocks being modified for agricultural use. The community will not be further fragmented by the Project, or result in its ecological function being significantly altered as a result of the Project, due to the small nature of impact at each location along the edge of the construction footprint. All impacts to NTGVVP will occur along the eastern edge of the patches and will not result in any fragmentation of the individual patches proposed to be impacted.
Adversely affect habitat critical to the survival of an ecological community.	**No.** The proposed action is not likely to adversely affect the long-term survival of the ecological communities, given that most of the mapped area of each community within the Flora Assessment Area are being avoided by the proposed action.
Modify or destroy abiotic (non-living) factors (such as water, nutrients, or soil) necessary for an ecological community's survival, including reduction of groundwater levels, or substantial alteration of surface water drainage patterns.	**Negligible.** The proposed action will result in the removal of surface soil within the construction footprint required to construct and install the underground transmission line where patches of NTGVVP were recorded. Any soil removed during the construction works will not be stockpiled outside of the construction footprint and will be reinstated to the pre-disturbance ground levels as soon as possible (where feasible for the underground transmission line). Erosion and sedimentation controls will be implemented as required through a CEMP to mitigate impacts to abiotic factors, and any existing roadside drains will be managed and maintained during the construction phase to prevent impacts such as a change in surface water movement that may result in short-term flooding of areas supporting significant ecological communities. Given the small, localised nature of works within the impact areas supporting the ecological communities and the existing presence of the roads, groundwater levels, water drainage patterns and nutrient loads are unlikely to be affected by the proposed action.

Criteria	Assessment
Cause a substantial change in the species composition of an occurrence of an ecological community, including causing a decline or loss of functionally important species, for example through regular burning or flora or fauna harvesting.	**No.** The patches of NTGVVP within the Flora Assessment Area all contained relatively similar native flora species, dominated largely by Kangaroo Grass. Whilst the proposed works will result in the removal of sections of these ecological communities and associated flora species, the works will not result in the loss of any individual species from the broader extent of the communities in the Project Site (i.e. the retained patches), as no works are proposed in these areas. Of the works proposed within the construction footprint, the works will be a one-off event, and not re-occurring. No individual flora species will be targeted for the Project. The overall functionality of NTGVVP will not be affected by the proposed action. This is due to the small, localised nature of the proposed impacts to the communities, and the retention of the remainder of the communities adjacent to the construction footprint. The implementation of a CEMP for the Project will further reduce the risk of a substantial change to the floristic composition occurring, through implementation of appropriate weed and pathogen control measures (within the construction footprint).
Cause a substantial reduction in the quality or integrity of an occurrence of an ecological community, including, but not limited to: a. assisting invasive species, that are harmful to the listed ecological community, to become established or b. causing regular mobilisation of fertilisers, herbicides or other chemicals or pollutants into the ecological community which kill or inhibit the growth of species in the ecological community.	**No.** The overall quality of the ecological community is not likely to be affected by the proposed action. The community is present within existing road reserves in the broader region, and the installation of the underground power cabling will not cause a substantial reduction in the quality or integrity of the remaining ecological community. Appropriate management of the construction process and machinery will be used to ensure that any weed species, pollutants and/or pathogens are not inadvertently spread into areas supporting retained areas of NTGVVP.
Interfere with the recovery of an ecological community.	**No.** The proposed action is not likely to interfere with the ecological processes or recovery of the ecological community, due to the retention of larger, adjacent patches of the community

Western (Basalt) Plains Grassland Community

Construction of the Project would directly remove 1.42 ha of WBPG associated with the underground transmission line along Willowvale Road, road widening and access along Rankin Road and Lismore-Pittong Road, and two sections of electrical reticulation along Rankin Road and Hendersons Road.

All patches of Plains Grassland (EVC 132_61) impacted by the construction footprint have been classified as the WBPG community (see **Figure 8.24**). Impacted patches are all located within the road reserve. While the Project would slightly reduce the extent of this community by 0.339 ha, this is spread across 18 patches. The remaining 4.61 ha of WBPG recorded within the Assessment Area will be retained.

Although access tracks and reticulation will be constructed through some road reserves where WBPG is present, it is not considered that the community will be fragmented or result in its ecological function being significantly altered.

In accordance with mitigation proposed for NTGVVP, fencing and/bunting around works areas in proximity to known areas of WBPG will be implemented during construction (see mitigation measure MM-BD04). This includes impacted areas along Willowvale Road, as well as the small sections of impact along Lismore-Pittong Road and Rankin Road. These areas would also be rehabilitated, except for the impacted area on Rankin Road, as this is associated with a permanent road upgrade and therefore cannot be revegetated.

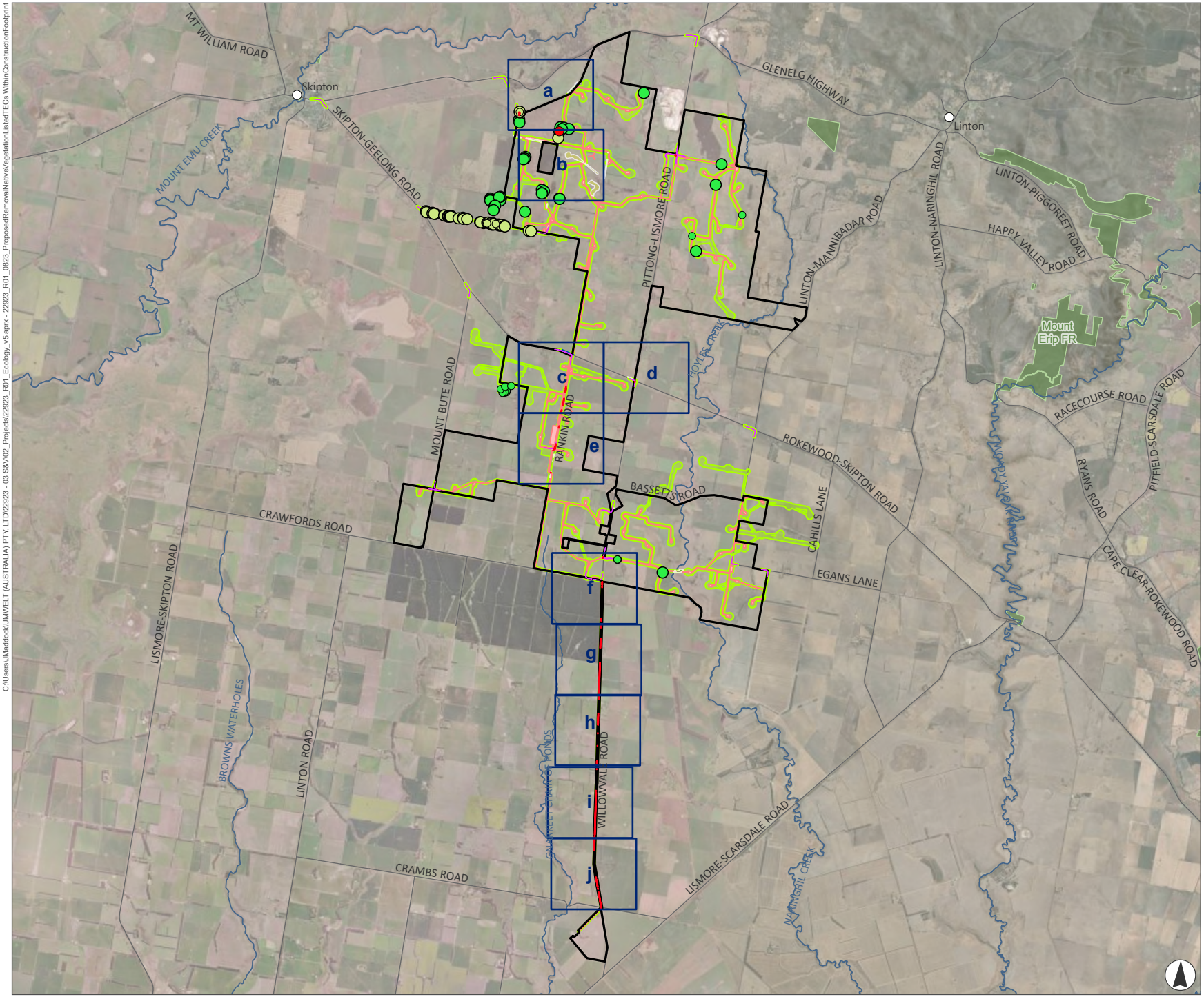

FIGURE 8.24

Proposed Removal of Native Vegetation and Listed TECs Within the Construction Footprint

Legend

- Major Watercourse
- Roads
- Parks and Reserves
- Project Site
- Flora Assessment Area
- Tyre Impact Envelope - Swept Path
- Construction Footprint
- Natural Temperate Grassland of the Victorian Volcanic Plain

Mapped Vegetation

- Impacted Native Vegetation
- Impacted Tree
- Scattered Large Tree
- Scattered Small Tree
- Large Tree in patch
- Small Tree in patch

EVC

- Grassy Woodland (EVC 175)
- Grassy Woodland (EVC 175_61)
- Heathy Dry Forest (EVC 20)
- Plains Grassland (Heavier Soils) (EVC 132_61)
- Plains Grassy Wetland (EVC 125)
- Plains Grassy Woodland (EVC 55)
- Plains Sedgy Wetland (EVC 647)

0 2.5 5

Kilometres

Scale 1:140,000 at A4
GDA2020 MGA Zone 54

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FIGURE 8.24b

Proposed Removal of Native Vegetation and Listed TECs Within the Construction Footprint

Legend

- Project Site
- Flora Assessment Area
- Construction Footprint

Mapped Vegetation

- Impacted Native Vegetation
- Impacted Tree
- Scattered Large Tree
- Large Tree in patch

EVC

- Grassy Woodland (EVC 175)
- Grassy Woodland (EVC 175_61)
- Plains Sedgy Wetland (EVC 647)

0 0.1 0.2

Kilometres

Scale 1:10,000 at A4
GDA2020 MGA Zone 54

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FIGURE 8.24c

Proposed Removal of Native Vegetation and Listed TECs Within the Construction Footprint

Legend

- Roads
- Project Site
- Flora Assessment Area
- Tyre Impact Envelope - Swept Path
- Construction Footprint
- Natural Temperate Grassland of the Victorian Volcanic Plain

Mapped Vegetation

- Impacted Native Vegetation

EVC

- Plains Grassland (Heavier Soils) (EVC 132_61)

0 0.1 0.2

Kilometres

Scale 1:10,000 at A4
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FIGURE 8.24d

Proposed Removal of Native Vegetation and Listed TECs Within the Construction Footprint

Legend

- Roads
- Project Site
- Flora Assessment Area
- Tyre Impact Envelope - Swept Path
- Construction Footprint

Mapped Vegetation

- Impacted Native Vegetation

EVC

- Plains Grassland (Heavier Soils) (EVC 132_61)

0 0.1 0.2

Kilometres

Scale 1:10,000 at A4
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FIGURE 8.24e

Proposed Removal of Native Vegetation and Listed TECs Within the Construction Footprint

Legend

- Roads
- Project Site
- Flora Assessment Area
- Tyre Impact Envelope - Swept Path
- Construction Footprint

Mapped Vegetation

- Impacted Native Vegetation

EVC

- Plains Grassland (Heavier Soils) (EVC 132_61)

0 0.1 0.2

Kilometres

Scale 1:10,000 at A4
GDA2020 MGA Zone 54

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8.6.2 Direct Removal of Fauna Habitat from Clearance, Earthworks and Physical Disturbance

8.6.2.1 Striped Legless Lizard and Tussock Skink

Construction of the Project would require the direct removal of 1.42 ha of low quality habitat for Striped Legless Lizard and Tussock Skink. These areas of low quality habitat are associated with impacted patches of Plains Grassland (EVC 132_61), which also correlate with the impacted patches of the WBPG community (see **Figure 8.24**). This habitat is not considered to be critical to the survival of these species, as it is already fragmented, of low quality and isolated from other larger areas of nearby confirmed habitat due to roads and agricultural activities.

Based on the low quality and highly fragmented nature of potential habitat being impacted, it's unlikely an important population of Striped Legless Lizard or Tussock Skink is supported within the Assessment Area or broader Project Site.

Mitigation measures will be implemented to reduce impacts on Striped Legless Lizard and Tussock Skink, such as protection of retained areas of habitat through No-Go Zone fencing and fauna pre-clearance checks and salvage (see mitigation measure MM-BD03 and MM-BD06).

An assessment of the Project's impact on Striped Legless Lizard and Tussock Skink against the significant impact guidelines demonstrates the Project is **not considered to result in a significant impact** on these species.

A complete assessment against the significant impact guidelines is provided in Appendix 3 of the Ecological Assessment (**Appendix C**).

8.6.2.2 Growling Grass Frog

No Growling Grass Frog breeding habitat was found to be present within the Project Site, due to the ephemeral nature of the waterbodies present. In addition, no DEECA mapped wetlands are proposed to be impacted during construction.

Hoyles Creek and Naringhil Creek were identified as potential dispersal corridors within the Project Site. A small section of overhead reticulation is proposed to span Naringhil Creek to avoid directly impacting on this creek, which would have otherwise been trenched to install underground reticulation. Overhead reticulation poles have been set back at least 170 m from the centreline of the creek to also avoid any direct impacts.

A proposed access track and underground electrical reticulation also cross Naringhil Creek between WTG 51 and 55. The proposed crossover location aligns with an existing farm track. Any upgrades proposed to the existing farm track will ensure that the works do not result in a barrier to the flow of water within the creek, through installation of a suitable culvert (if not already present) (see mitigation measure MM-BD11).

The underground transmission line intersects with the Gnarkeet Chain of Ponds, which is an ephemeral waterway. Lismore – Pittong Road runs adjacent to the underground transmission line route and has a culvert installed where the waterway passes underneath. The transmission line will be either trenched during a dry period with topsoil reinstated to natural levels, or bored under the waterway to avoid impacts (see mitigation measure MM-BD09).

Construction of the Project would not require any direct removal of, or impact on, any Growling Grass Frog habitat as there is no known habitat within the Project Site. However, some construction works will temporarily impact on ephemeral waterways within the Project Site, but this does not involve direct removal of habitat.

8.6.2.3 Brown Treecreeper

Brown Treecreeper is known to inhabit open forest and woodland areas within the ROI. Although suitable habitat exists within the broader ROI, the Project Site itself provides limited habitat due to extensive disturbance from agricultural activities. The Project proposes to remove 0.027 ha of Grassy Woodland (EVC 175) habitat along a proposed access track between WTG 6 and WTG 7 (see **Figure 8.24**). Only a small section of the northern corner of this patch of Grassy Woodland is proposed to be removed. Given the known foraging behaviour of Brown Treecreeper, typically foraging on the ground, fallen logs, and in trees, the Project will result in a small indirect impact to Brown Treecreeper through the loss of this small amount of habitat.

8.6.3 Direct Impacts on Fauna from Vehicle Strikes / Trench Entrapment

Terrestrial mammals have potential to be impacted through direct mortality of individuals from vehicles and machinery accessing the Project Site and moving between private landholdings and public land during construction.

Whilst no threatened terrestrial mammal species were found within the Project Site (or, have a moderate or higher likelihood of occurrence), surveys found some low quality habitat for the Striped Legless Lizard and Tussock Skink. However, based on the low quality and highly fragmented nature of potential habitat being impacted, it's unlikely an important population of Striped Legless Lizard or Tussock Skink is supported within the Assessment Area or broader Project Site.

Therefore, it is not likely that vehicle movements throughout the Project Site would directly impact on any threatened terrestrial mammal species through vehicle strikes. Any potential impacts will be managed through mitigation measures such as the recording of any vehicle-wildlife interactions and implementing speed limits on vehicles (see mitigation measure MMBD-18).

Terrestrial fauna also have potential to fall into trenches or pits introduced to their normal environment by Project construction works and cause injury or mortality. Although the types of threatened fauna found within the Project Site are avifauna and therefore unlikely to be impacted by these trenching activities, there remains a low potential risk to non-threatened species.

Mitigation to further reduce the incidence of trench entrapment will include best-practice trenching management such as minimising the amount of time trenches and other excavations are open, installing exit ramps at the end of trenches for fauna, daily inspections to remove any trapped fauna, and checking for fauna prior to backfilling trenches (see mitigation measure MM-BD16).

8.6.4 Temporary Disturbance to Fauna Caused by Factors such as Noise, Dust, Light and Vibration

Noise, dust and the presence of the workforce and machinery could disturb fauna or discourage them from using certain areas. However, construction noise and vibration would be temporary and localised to areas where construction is occurring.

The Project Site is not considered to provide habitat or resources critical for the survival of any threatened species. Project surveys did not identify many listed species that would regularly use habitat within the Project Site. No listed species are known to use habitat within the Project Site for breeding or nesting. This lack of breeding or nesting activity within the Project Site is largely due to the lack of vegetation required, such as large trees or hollow bearing trees. Use of the Project Site by recorded listed fauna species was typically found to be limited to transient foraging and flight activity from bird species. These species are unlikely to be impacted through temporary disturbance caused by construction activities due to their transient nature and temporary use of the Project Site.

Wedge-tailed Eagle is the only species recorded during Project surveys to be nesting outside of the Project Site, with an active nest recorded along the north-western boundary of Lake Widderin. The active nest is approximately 4.5 km from the nearest WTG and the construction footprint. Temporary disturbance from construction activities is therefore unlikely to impact this active nest due to the distance.

Mitigation measures will be implemented as part of the CEMP/OEMP that would minimise potential disturbance on fauna. In areas where external visible artificial lighting has potential to disturb sensitive fauna species, the Project would implement lighting technology that limits the spread of light outside of the construction work area and into adjacent habitat. This includes keeping lights close to the ground and shielding lights to avoid light spill beyond the works area, in accordance with the National Light Pollution Guidelines for Wildlife (DCCEEW, 2023) (see mitigation measure MM-BD17). Standard dust control measures would also be implemented including the use of water sprays on unsealed roads and surfaces (see mitigation measures MM-BD14).

Due to the lack of long-term habitat the Project Site provides, and with the implementation of mitigation, it is unlikely project construction activities would impact on any threatened fauna.

8.6.5 Habitat and Vegetation Degradation from Indirect Impacts

The degradation of fauna habitat and vegetation may occur from indirect effects from construction activities such as:

- The introduction of invasive weed species or pathogens into the Project Site from construction equipment or materials.
- Increased sedimentation from construction activities into nearby waterways.
- Contamination caused by accidental spills of materials and machinery maintenance which may cause harm.

Weeds and pathogens have potential to be lodged and transported into the Project Site through construction equipment and materials. Additionally, plant and equipment used within the Project Site can spread weeds and pathogens to other receptors outside the Project Site. Unauthorised access (off-road/track, parking or stockpiling construction materials on native vegetation) could also damage vegetation and/or soil which can provide access by weeds and pathogens.

Hygiene controls for personnel and machinery will be implemented during construction to control the spread of weeds and pathogens. A Biosecurity Management Plan and Hygiene Protocol will be developed which will include an induction for all contract staff that details the requirements for vehicles and equipment to be free of mud and plant material before entering site, and establish a hygiene cleaning facility (e.g. designated wash-down locations for machinery, vehicles, tools and footwear) (see mitigation measure MM-BD08). Initially when clearing is occurring during construction, hygiene facilities will be strategically located throughout the Project Site based on weed surveys undertaken. Once clearing is completed, access tracks into and out of the Project Site become a clean route for ongoing trafficking. At that time, hygiene facilities will be limited to the construction compound location. The residual impact of invasive species and/or pathogens on native vegetation, listed species and TECs are expected to be very low with the implementation of mitigation measures.

Construction in and around waterways has the potential to increase sedimentation through run off over disturbed areas, which could impact on the surface water quality for native vegetation and nearby waterways. Industry standard erosion and sediment control mitigation measures will be implemented to ensure run off from construction sites does not impact on surface water quality for native vegetation or nearby waterways. Such measures include installing sediment controls (such as sediment fences) around stockpiled materials and installing appropriately designed drainage systems prior to earthworks to prevent erosion, scour and ponding (see mitigation measures MM-BD10). The residual impact of increased sedimentation would be very low with the implementation of mitigation measures. No impacts are anticipated on aquatic fauna, as none were identified within the Project Site.

Spills of fuels and other liquid pollutants used during Project construction could flow into local waterways and drainage lines, resulting in contamination. These fuels and pollutants can contain harmful substances that reduce surface water quality. Mitigation measures will be implemented to avoid and minimise the potential for spills, such as storing fuels and hazardous liquids away from waterways and ensuring any refuelling activities occur away from waterways. The residual impact of contamination from potential spills is expected to be very low with the implementation of mitigation measures (see mitigation measures MM-BD15).

8.6.6 Potential Bird and Bat Collisions with WTG

During operation of the Project, there is potential for birds and bats to collide with WTGs. The following sections provide an assessment of the potential residual impact from collision on individual bird and bat species.

The BAM Plan (see mitigation measure MM-BD19) will be implemented for the Project to minimise, manage and mitigate residual collision risk for all bird and bat species arising from the operation of the wind farm and to ensure unexpected bird mortalities are responded to appropriately. This includes a five-year monitoring plan to understand the effectiveness of mitigation being implemented and provide an adaptive response should measures require adjustment based on the outcomes of monitoring.

8.6.6.1 Blue-winged Parrot

Blue-winged Parrot was observed during bird utilisation surveys on eight occasions, totalling 27 individuals. The species was not observed during the first two bird utilisation surveys in 2020 and 2021 but was recorded in subsequent survey periods. All individuals were observed below the RSA, with a maximum recorded height of 15 m, well below the lower bound of the RSA at 44 m. This is consistent

with the typical behaviour of the species, being primarily a ground-foraging parrot. There has been one recent recorded Blue-winged Parrot mortality at a Victorian wind farm, indicating the species can fly at RSA height.

The Project Site is unlikely to support an ecologically significant population of the species, but it is likely that Blue-winged Parrot will continue to utilise habitats within the ROI. While it is possible that some individuals may fly at RSA height over the Project Site during dispersal, the frequency and intensity of such movements are highly likely to be low. Blue-winged Parrot is considered to have a low risk of collision. As such, the Project is not considered to increase the collision risk, or result in unknown, unpredictable, or irreversible impacts on Blue-winged Parrot.

An assessment of the Project's impact on Blue-winged Parrot against the significant impact guidelines demonstrates the Project is **not considered to result in a significant impact** on this species.

A complete assessment against the significant impact guidelines is provided in Appendix 3 of the Ecological Assessment (**Appendix C**).

8.6.6.2 Brown Treecreeper

Brown Treecreeper was observed in low numbers during bird utilisation surveys (four observations, four individuals). All observations were below RSA, with the maximum flight height at 10 m. The species was only recorded during the fourth survey event in Summer 2023. Brown Treecreepers typically fly below the RSA and are mostly found foraging on the ground and in the sub-canopy of trees. They are therefore unlikely to be at risk of colliding with wind turbines.

Post-construction mortality survey data for 15 Victorian wind farms (2003 to 2018) recorded no mortalities for this subspecies (Moloney, et al., 2019), and Brown Treecreeper is not listed as a Species of Concern for Victorian Wind Energy Facilities.

Brown Treecreeper is considered to have a low risk of collision. An assessment of the Project's impact on Brown Treecreeper against the significant impact guidelines demonstrates the Project is **not considered to result in a significant impact** on this species.

A complete assessment against the significant impact guidelines is provided in Appendix 3 of the Ecological Assessment (**Appendix C**).

8.6.6.3 White-throated Needletail

White-throated Needletail was not recorded during bird utilisation surveys, however an incidental observation of eight White-throated Needletail was recorded during targeted raptor surveys flying at approximately 70 m in height, approximately 4 km to the north-east of the Project Site. There are few local records within the ROI, but there are numerous records at the regional and State level.

White-throated Needletail is a widely distributed migratory species that occurs throughout coastal and inland regions of Victoria during the summer months. The population of the species is estimated at 10,000 individuals or more. The species is not restricted to specific sites or localised areas and is regularly observed across a wide range of landscapes, particularly in association with storm fronts and uplift conditions. Documented records of White-throated Needletail are widespread across Victoria, including along the coast and hinterland, indicating that the Project Site is not unique or disproportionately important for the species' site occupancy. This broad distribution highlights that potential interactions with wind turbines occur at a landscape scale, rather than being confined to the Project Site.

The species is known to fly at high altitudes, frequently above the RSA of modern wind turbines. However, collision with turbines has been identified as a key emerging threat to the species (TSSC, 2019) (DELWP, 2020), with confirmed mortality records from operational wind farms in Victoria and other jurisdictions (Moloney, et al., 2019) (DEECA, 2025) (DEECA, 2025). Despite this, DCCEEW conservation advice regarding the assessment of threats to White-throated Needletail notes that 'collision with wind turbines is of low severity and affects a small number of birds' (relative to the overall population numbers) (DAWE, 2019).

A wind farm risk assessment in 2018 (BL&A) found that the risk of direct collision with operating turbines was unlikely and had low consequences with an overall negligible rating for the species. Carcass searches across 10 wind farms (BL&A, 2018) found only two occurrences of White-throated Needletail mortalities. Post-construction mortality data provided by DEECA indicated at least 13 White-throated Needletail deaths from seven windfarms over a period of 18 years (DEECA comms. 2024).

The potential impact from collision with turbines because of the Project is low due in part due to their wide distribution, the species' highly manoeuvrable flight behaviour which enables birds to avoid turbines, and the species' ability to cover large distances in a day. Overall, it is unlikely that White-throated Needletail would fly over the Project Site in great numbers, or for extended periods of time (i.e. the species would be only an occasional visitor). While it is possible a small number of individuals may be at risk of turbine collision during operation of the Project, given the known distribution and population size of the species, any impact from the Project is not considered to be significant at a local, regional, or national scale. As such, the loss of occasional individuals due to collision is not expected to result in the long-term decrease in an important population of the species.

As detailed in the draft BAM Plan, a post-construction migratory species-specific survey program will be implemented, which involves annual surveys for migratory birds (including White-throated Needletail). The aim of the surveys is to determine with greater certainty the likelihood of occurrence, site utilisation and collision risk for White-throated Needletail and other migratory birds. Migratory bird monitoring surveys will be undertaken for two years from the commencement of turbine operation, at which point DEECA will be consulted with to determine whether further monitoring surveys are required. Further details on the proposed post-construction migratory species survey program are provided in the draft BAM Plan (**Appendix E**).

An assessment of the Project's impact on White-throated Needletail against the significant impact guidelines demonstrates the Project is **not considered to result in a significant impact** on this species. A complete assessment against the significant impact guidelines is provided in Appendix 3 of the Ecological Assessment (**Appendix C**).

8.6.6.4 Brolga

With the implementation of the turbine-free buffers detailed in **Section 8.5.1.2,** the Project is not expected to result in a significant impact on Brolga or their breeding and flocking habitats. Turbines have been relocated away from Lake Widderin to avoid reduced breeding success, and to allow continued access to nearby foraging habitats, and do not create a barrier between these habitats.

The application of these buffers is expected to reduce potential collision risk for Brolga by maintaining separation distances between recorded flight paths and turbine locations, lowering the likelihood of interaction between Brolga and the Project. These buffers together with the low flight heights observed during Brolga local movements, suggests a very low risk of turbine collisions under the refined layout.

This is further supported by the results of collision risk modelling, which predicts the following annual collisions under various avoidance rates:

- 0.016 collisions at a 90% avoidance rate
- 0.008 collisions at a 95% avoidance rate
- 0.003 collisions at a 98% avoidance rate.

Under a scenario where flocking occurs every year at Lake Widderin, and Brolgas disperse as far as 5 km in all directions from the lake, the following annual collisions are predicted:

- 0.019 collisions at a 90% avoidance rate
- 0.01 collisions at a 95% avoidance rate
- 0.004 collisions at a 98% avoidance rate.

While the risk of the Project impacting on Brolga through turbine collision is considered low, additional mitigation is proposed to be implemented to further minimise potential impacts.

Although Brolga are infrequent visitors to the proposed RSA, increasing the minimum RSA for the Project WTGs from 44 m above ground to 61 m above ground would aid in reducing collision risk. Of the 150 flight events recorded during the 2024 flocking season, five flights (3.3%) were recorded in the RSA. Increasing the minimum RSA to 61 m would mean only two flights (1.3%) would have occurred within the RSA. The Project has conservatively assessed a minimum RSA of 44 m to provide a worst-case assessment of potential impacts. The final WTG model and specifications will be determined during detailed design with the ability to increase the minimum RSA.

As detailed in the draft BAM Plan, a post-construction species utilisation program for Brolga is proposed which consists of a five-year Brolga desktop assessment and a two-year Brolga behavioural study, with a trigger for additional surveys. The desktop assessment includes quarterly searches of biodiversity databases to monitor for any recent verified records of Brolga within the Project Site and 3.5 km radius. The behavioural study will involve monthly monitoring to identify opportunistic observations of Brolga, as well as bi-seasonal (a minimum of twice per breeding season and twice per flocking season) inspections of Lake Widderin as well as other wetland habitats located within the Project Site boundary where brolga have previously been observed. Brolga monitoring will begin in the first season of wind farm operation (when the first turbine becomes operational). DEECA and the responsible authority will be notified within five business days of the survey completion if Brolga are observed within the Project Site during operation. Further details on the proposed post-construction Brolga survey program are provided in **Appendix E**.

Further investigation into the use and implementation of automated detected systems at the Project Site to reduce collision risk for Brolga will be undertaken through a targeted research trial, to be documented in a Trial Plan (see mitigation measure MM-BD20).

The Trial Plan will be prepared and incorporated into the BAM Plan and will include a trial of a technology selected by the Proponent, focused on turbines within 5km of Lake Widderin. The trial would run for a three year period, including approximately 6 months of pre-trial activities (ahead of wind farm commissioning) such as technology selection and installation, approximately 24 months of trial technology operation on-site and approximately 6 months of post-trial activities including analysis and reporting. An onsite trial for 24 months is proposed to allow the opportunity to capture data during an active flocking season, noting Lake Widderin has not been observed as a continuously used flocking site.

The results of the trial will determine if a technology of choice should be implemented as part of ongoing site operations or whether further research is warranted. The Trial Plan will be prepared for DEECA consideration and inputs.

In accordance with the interim guidelines, the Proponent will also develop a Brolga Compensation Plan in consultation with DEECA that will outline a strategic approach to ensure there will be 'zero net impact' on the Victorian Brolga population (see mitigation measure MM-BD21).

8.6.6.5 Microbats

Table 8.20 assesses the impact of microbat collisions with WTGs during Project operation. The four microbat species identified as key species of concern within the scoping document have been assessed. Southern Bent-wing Bat, Eastern Bent-wing Bat and Yellow-bellied Sheath-tailed Bat are all threatened species listed as 'probable concern' relevant to onshore wind energy facilities in Victoria. While not listed as a threatened species, White-striped Freetail Bat is considered to have potential to become threatened.

Although the Project is considered unlikely to result in a significant impact on either Southern Bent-wing Bat or Eastern Bent-wing Bat, a three-level approach to a decision-making framework specific to these species has been developed in the draft BAM Plan (**Appendix E**). The BAM Plan outlines triggers and actions for each level in the instance an individual of either species is found deceased in the inner or outer search zones within the Project Site.

Table 8.26 Assessment of Potential Wind Turbine Collisions for Microbat Species

Microbat species	Potential collision impact assessment
Southern Bent-wing Bat	It is considered highly unlikely that Southern Bent-wing Bat regularly visit the Project Site. This is based on the distance to known roosting sites (over 65 km), the species' known foraging range, and the expectation that if the species was present, it is highly likely that it would have been detected during the microbat surveys. A recent study (Bush, et al., 2025) found that of 4,289 Southern Bent-wing Bat flights recorded with GPS tags, over 95.98% of flight activity occurred below 30 m, and more than 99.7% occurred below 60 m. This confirms that elevated flight is extremely rare for this subspecies. Given the lower bound of the RSA is 44 m for the Project, there is a greater than 95.98% likelihood that any Southern Bent-wing Bat intersecting the Project Site, albeit an infrequent or rare occurrence, would be flying below the RSA. Consequently, the risk of collision posed by the Project to the subspecies is considered low.
Eastern Bent-wing Bat	Eastern Bent-wing Bat is a cave dwelling bat that forages at and around canopy height in treed areas, and close to the ground in grassy areas. There are no published collision mortalities in Victoria. Based on the general low flight height and preference to forage around tree canopies, the Project is not anticipated to impact on Eastern Bent-wing Bat through turbine collision. While the Project Site may provide foraging habitat for the species, it does not overlap with any known maternity caves, with the nearest located in East Gippsland, near Bairnsdale. As there is suitable habitat available in the broader locality and region and the species has a low flight height below RSA, it is considered unlikely that the Project will significantly impact the species.

Microbat species	Potential collision impact assessment
Yellow-bellied Sheath-tailed Bat	There were no confirmed Yellow-bellied Sheath-tailed Bat calls recorded during Project surveys, however one call was classified as 'potential' and therefore the species presence within and surrounding the Project Site cannot be discounted. DEECA is aware of on reported fatalities of the species as a result of wind turbine collisions in Victoria. The Project is not anticipated to significantly impact on Yellow-bellied Sheath-tailed Bat during operation of the Project.
White-striped Freetail Bat	White-striped Freetail Bat is a widespread and common species across southern Australia that was frequently recorded during microbat surveys. The species typically flies higher than Southern Bent-wing Bat, Eastern Bent-wing Bat and Yellow-bellied Sheath-tailed Bat, often exceeding 50 m and increasing their susceptibility to collision with turbines. Collisions with turbines at Victorian wind farms are most likely to occur between September and May, with a potential peak in mortality during March and April, coinciding with the post-weaning activity period. Moloney et al. (2019) found that White-striped Freetail Bat accounted for 67% of all bat carcass finds at Victorian wind farms between 2003 and 2018. While operation of the Project is anticipated to result in the direct loss of White-striped Freetail Bats, this is not anticipated to be a significant impact on the species due to the common and widespread nature of the species.

8.6.6.6 Little Eagle

Little Eagle was recorded twice during bird utilisation surveys at RSA and once during targeted raptor surveys below the RSA (outside of the Project Site). The species can fly at RSA and is able to fly at heights of up to 500 m where it will soar searching for prey before swooping to take prey from the ground or within trees or shrubs. There is only one documented mortality of Little Eagle from a wind farm in Victoria (Moloney, et al., 2019) (DEECA, 2025).

The Project Site does not contain typical nesting habitat for the species, indicating the species would not regularly use or visit the Project Site. While there is potential for some individuals to fly over the Project Site (including within the RSA), the frequency and intensity of such movements are highly likely to be low.

8.6.6.7 Black Falcon

All three observations of Black Falcon during targeted raptor surveys were below RSA, with the maximum height recorded at 15 m. While this is below the RSA, the species can fly within the RSA. The species typically occupy arid and semi-arid zones, and frequent low, open wooded grasslands and waterbodies. No confirmed Black Flacon nests were identified during surveys, although the species typically occupy abandoned stick nests of other bird species.

There is one documented mortality of the species from a wind farm in Victoria (Moloney, et al., 2019) (DEECA, 2025), however DEECA are aware of nine Black Falcon strikes in Victoria. Black Falcon are likely infrequent and opportunistic visitors to the Project Site and may fly over the Project within the RSA, with a small number potentially at risk of turbine collision. However, it is unlikely that an ecologically significant population of Black Falcon would fly in the RSA within the Project Site.

Additional Black Falcon monitoring will be undertaken prior to construction during breeding season (May to November) to confirm presence of the species on site. This will be implemented through the BAM Plan (see mitigation measure MM-BD19).

8.6.6.8 Spotted Harrier

All four observations of Spotted Harrier during targeted raptor surveys were below RSA, with three of them at, or below 10 m. These observations are consistent with their known behaviour as a ground-hunting raptor, often found in open grasslands and agricultural areas gliding low to the ground before dropping onto prey. However, the species is capable of soaring at higher altitudes, including within the RSA. There is at least one documented mortality of the species as a result of wind farms in Victoria (Moloney, et al., 2019) (DEECA, 2025).

The Project Site does not contain typical nesting habitat for the species, indicating the species would not regularly use or visit the Project Site. While there is potential for some individuals to fly over the Project Site (including within the RSA), the frequency and intensity of such movements are highly likely to be low.

8.6.6.9 Wedge-tailed Eagle

Wedge-tailed Eagle are a highly common species, occupying a range of habitats. They are the largest bird of prey in Australia, and are highly aerial soaring for hours and reaching heights over 1,800 m. Individuals can spot prey from over a kilometre away. A total of 92 observations (comprising 150 individuals) of Wedge-tailed Eagle were made during targeted raptor species, and 23 observations (comprising 34 individuals) were made during bird utilisation surveys. These results highlight the common nature of the species. They were observed within and below the RSA. There are at least 58 documented mortalities of the species as a result of wind farms in Victoria (Moloney, et al., 2019) (DEECA, 2025).

One active nest was recorded on the northern edge of Lake Widderin, approximately 4.5 km from the nearest WTG and the construction footprint. Two inactive nests were also recorded north-east of the Project Site. Breeding territories for the species have been found to average17.6 km with a nearest neighbour of 4.7 km. This indicates there were unlikely to be other active nests within or in close proximity to the Project Site at the time of survey.

There are 203 historical records of the species within the ROI, which aligns with the results of project surveys. The bird utilisation survey effort comprised 7,240 minutes of observation time, comparable with other large wind farm assessments. Wedge-tailed Eagle was recorded on 23 occasions (comprising 34 individuals), meaning the rate at which Wedge-tailed Eagles were recorded during bird utilisation surveys was every 315 minutes on average. When compared to other Victorian wind farms, the rate at which Wedge-tailed Eagle was observed during bird utilisation surveys was substantially lower, with other projects recording the species as frequently as every 45 minutes during these surveys (Biosis, 2024). While there is no direct comparison for Wedge-tailed Eagle records made during targeted raptor surveys, if the rate of records from both bird utilisation surveys and targeted raptor surveys for the Project are combined this results in an average record every 131 minutes and 106 minutes, respectively. This is considered extremely conservative, and is still lower compared to other observation rates.

These results and observations between 2020 and 2025 indicate that Wedge-tailed Eagles use the Project Site at a lower level than comparable projects. While there is potential for some individuals to fly over the Project Site (including within the RSA), the frequency and intensity of such movements are highly likely to be low, particularly when compared to other projects. The turbine-free buffers applied around Lake Widderin (and subsequently the active nest) in response to Brolga assessments (see **Section 8.5.1.2**), will also help reduce the potential direct impact of Wedge-tailed Eagles colliding with WTGs.

The draft BAM Plan details impact triggers for non-listed species, such as Wedge-tailed Eagle, whereby further evaluation of impacts will be undertaken should five or more Wedge-tailed Eagle carcasses be found during a single year of monitoring. Further details are provided in **Appendix E.**

8.6.6.10 Grey-headed Flying Fox

Grey-headed Flying-fox was recorded at the Lismore Camp in 2023 and 2025. The species was not recorded at this location in 2024, noting that the 2024 survey was undertaken earlier than the 2023 and 2025 survey, and the species may have been foraging elsewhere at this time. However, on one day in 2024, up to 55 individuals were recorded approximately 6 km south-west of the Project Site post-dusk.

Grey-headed Flying-fox are known to fly as far as 40 km to feed, before returning to their camp on the same night. However, Westcott, et al., (2015) reported a mean distance between foraging sites and returned camps of 10.9 km (quartile range from 6.2 km to 27.9 km). These findings are consistent with the project survey records of the species approximately six km south-west of the Project Site, noting that the Lismore Camp is around 20 km to the south. Therefore, it is possible that individuals that may visit or pass through the Project Site during nightly foraging activity, or when moving to areas of more suitable habitat, are at risk of turbine collision. However, the risk of collision is considered low due to the recorded flight height for the species being predominately less than the proposed RSA, with lower flight heights more common when searching for food resources (Meade et al. 2025).

Although there have been 29 mortalities recently recorded due to turbine strikes at other wind farms in Victoria, the Project Site is located on the outer range of the species' typical foraging range associated with the Lismore Camp and so flights near the Project Site are likely to be infrequent. In addition, the Project would not result in the removal of any foraging habitat for this species which may be utilised by individuals residing in the Lismore Camp. Given the broad spread of foraging habitat within the broader region (i.e. remnant eucalypts, fruit trees and eucalypt windrows), this indicates that the species is unlikely to regularly fly through the Project Site. Research also suggests any potential movements (foraging only) are likely to occur below the RSA. Overall, operation of the Project is a low risk to the species.

An assessment of the Project's impact on Grey-headed Flying-fox against the significant impact guidelines demonstrates the Project is **not considered to result in a significant impact** on this species.

A complete assessment against the significant impact guidelines is provided in Appendix 3 of the Ecological Assessment (**Appendix C**).

8.6.6.11 Sharp-tailed Sandpiper

Sharp-tailed Sandpiper was observed on one occasion during bird utilisation surveys, with six individuals recorded foraging at ground level on the south-east edge of Lake Widderin in October 2024. While the ROI includes some suitable habitat for the Sharp-tailed Sandpiper, the Project Site generally lacks the hydrological, vegetative, and structural features required for typical Sharp-tailed Sandpiper habitat.

Given the agricultural landscape context of the Project Site and the preference of the species for inland wetlands that range from freshwater to hypersaline, the Project Site is unlikely to represent either core habitat or a movement corridor of frequent use by the species. This significantly limits the potential for the species to interact with the Project infrastructure on a regular basis.

Sharp-tailed Sandpiper is not a listed species of concern for wind farms in Victoria by DEECA.

Given the few historical records of the species within the ROI, and only one observation of the species at a bird utilisation survey reference location, the frequency and intensity of the species' movements over the Project Site are highly likely to be low. The Project is considered unlikely to result in a direct impact on the species.

The Project Site is not considered to support an important population of the species due to lack of habitat, and given the species breed in the northern hemisphere. Given the highly mobile nature and broadly dispersed range of the species it is considered unlikely that the Project would result in the fragmentation of any populations that may occur within the Project Site.

As detailed in the draft BAM Plan, a post-construction migratory species-specific survey program will be implemented, which involves annual surveys for migratory birds for two years from the commencement of turbine operation, at which point DEECA will be consulted with to determine whether further monitoring surveys are required. Further details on the proposed post-construction migratory species survey program are provided in **Appendix E.**

An assessment of the Project's impact on Sharp-tailed Sandpiper against the significant impact guidelines demonstrates the Project is **not considered to result in a significant impact** on this species. A complete assessment against the significant impact guidelines is provided in Appendix 3 of the Ecological Assessment (**Appendix C**).

8.7 Assessment of Alternatives

As discussed in **Section 3.2**, the Project will seek planning approval for up to 62 WTGs, however technical assessments (including the Ecological Assessment) have assessed a layout of 68 WTGs to enable flexibility in the final layout selection.

From an ecological perspective, all 68 WTGs have avoided directly impacting on native vegetation, listed flora species and threatened ecological communities.

Collision risk for bird and bat species remains largely the same for all 68 WTGs assessed in the layout until post mortality monitoring defines individual turbine risk.

Further investigation and consideration into the final 62 WTGs selected for the Project will be undertaken post approval. The final turbine layout will be informed by findings of the CHMP, outcomes of ongoing host landholder discussions around amenity, and following OEM selection for the turbines.

8.8 Cumulative Impact Assessment

A cumulative impact assessment was undertaken to understand the potential for cumulative impacts to arise from the Project in conjunction with other nearby developments, particularly other wind farm developments. The assessment focussed on threatened fauna species and ecological communities that were confirmed to be present within the Project Site, or are considered likely to occur.

A spatial scale of 50 km was applied for the cumulative impact assessment, with the following wind farm developments were considered in the cumulative impact assessment (see **Figure 8.25**):

- Stockyard Hill Wind Farm (operational, approximately 3 km north of the Project Site)
- Chepstowe Wind Farm (operational, approximately 8 km north of the Project Site)
- Berrybank Wind Farm (operational, approximately 9.5 km south of the wind farm site)
- Golden Plains Wind Farm (approved and partly operational, 10 km south-east of the Project Site)
- Challicum Hills Wind Farm (operational, 41 km north-west of the Project Site)
- Waubra Wind Farm (operational, approximately 30 km north of the Project Site)
- Brewster Wind Farm (approved, approximately 23 km north of the Project Site)
- Lal Lal Wind Farm (operational, approximately 41 km east of the Project Site)
- Mount Mercer Wind Farm (operational, approximately 29 km east of the Project Site)
- Mount Gillibrand Wind Farm (operational, approximately 50 km south-east of the Project Site)
- Dundonnell Wind Farm (operational, approximately 33 km south-west of the Project Site)
- Mount Fyans Wind Farm (approved, approximately 36 km south-west of the Project Site).

The cumulative impact assessment considered projects that may overlap with construction or operation of Moreton Hill Wind Farm, however the assessment predominantly considered other wind farms during the operational phase of the project as collision of birds and bats is the greatest risk for cumulative impacts.

For bat and avifauna impacts, the assessment relied on the information presented in (Moloney, et al., 2019) and Symbolix (2020), in addition to any known publicly available BAM Plan monitoring reports for wind farms within the spatial range published after 2019.

A summary of the cumulative impact assessment for key biodiversity values is provided in **Table 8.27.**

Operation of the Project will contribute to cumulative pressures within the broader landscape, but is considered unlikely to significantly increase these pressures, particularly in relation to significant flora and fauna species and ecological communities. This is due to the infrastructure footprint largely being located in a setting within a predominantly cleared and uniform landscape, outside the likely common distribution range of key species potentially impacted by wind farm developments.

While birds and bats are known to collide with operating turbine blades, such impacts must be considered at the species level, whereby flight behaviour and characteristics (i.e. average flight height and distance, in flight manoeuvrability, and distance to reaching average flight height) are critical to determining impacts.

Overall, the Project is not anticipated to significantly contribute towards cumulative impacts on biodiversity values in the local region.

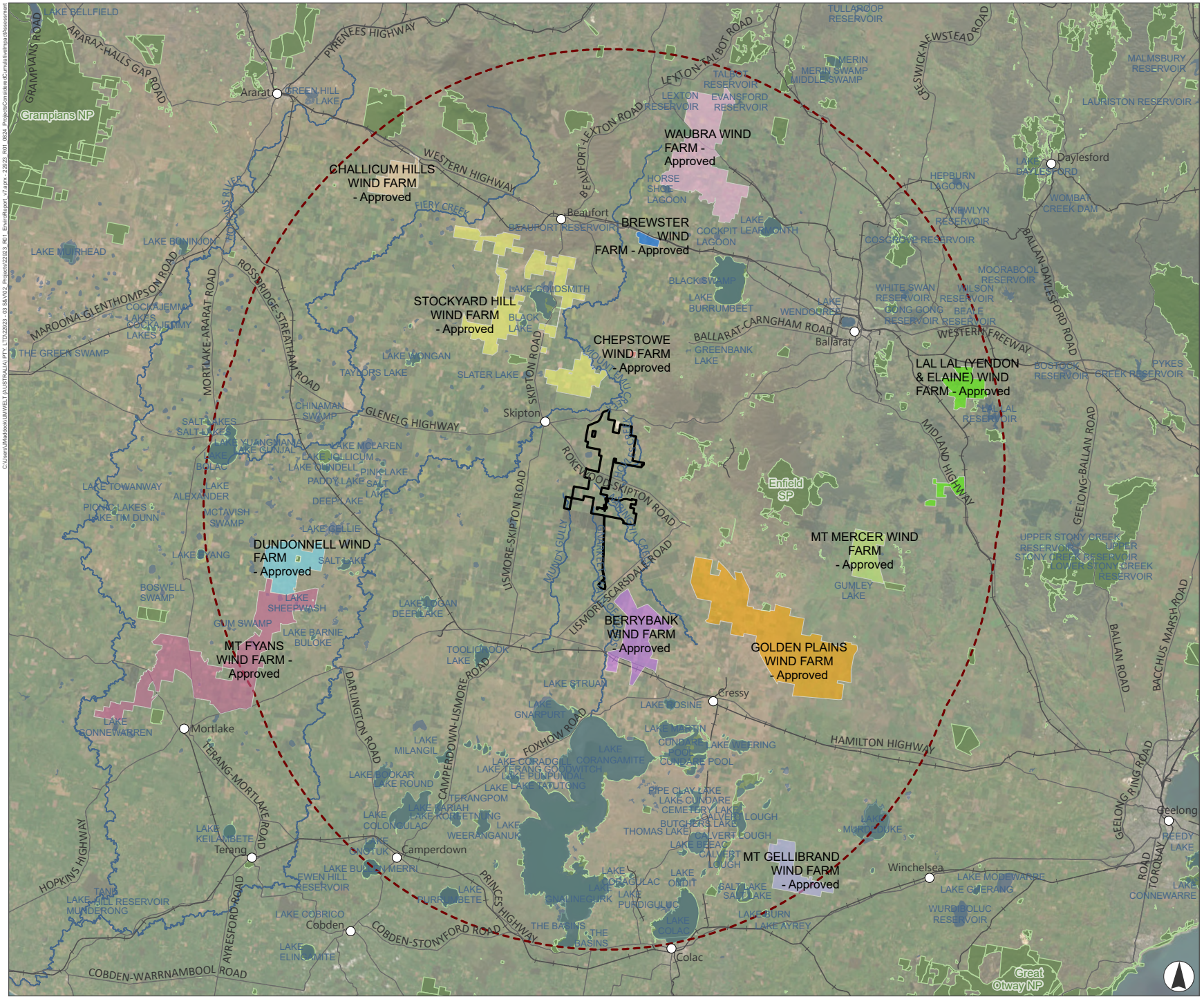

FIGURE 8.25

Regional Context

Legend

- Project Site
- Watercourse
- Roads
- Railway
- 50km Site Buffer
- Waterbody
- Parks and Reserves

Renewable Energy Facilities

- BERRYBANK WIND FARM, Operating
- CHALLICUM HILLS WIND FARM, Operating
- CHEPSTOWE WIND FARM, Operating
- DUNDONNELL WIND FARM, Operating
- LAL LAL (YENDON & ELAINE) WIND FARM, Operating
- MT GELLIBRAND WIND FARM, Operating
- STOCKYARD HILL WIND FARM, Operating
- WAUBRA WIND FARM, Operating
- GOLDEN PLAINS WIND FARM, Approved
- BREWSTER WIND FARM, Under Consideration
- MT FYANS WIND FARM, Under Consideration
- MT MERCER WIND FARM, Expired/Lapsed/ Withdrawn

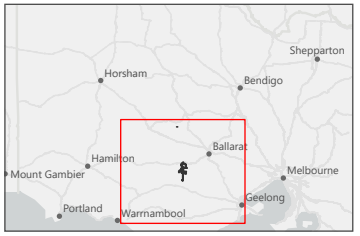

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Image Source: ESRI Basemap (2026) | **Data Source:** DEECA (2026), Squadron Energy (2026)

Table 8.27 Cumulative Impact Assessment of Key Biodiveristy Values

Value	Baseline	Impact	Phase	Cumulative impact
TECs	4.062 ha of NTVGGP 6.03 ha of WBPG	1.234 ha of NTVGGP 1.420 ha of WBPG	Construction	Golden Plains Wind Farm also impacted on NTGVVP with 28.74 ha impacted. This area of NTGVVP is anticipated to have also supported the WBGP community. The primary impact on these communities has been through historic land clearing for agriculture, where modification of land has removed much of the native grasslands. The additional removal of 1.234 ha of NTGVVP and 1.42 ha of WBPG from the Project is not anticipated to substantially contribute towards the known cumulative impact on these communities, due to the small size of impact, known extent and one-off nature of the impacts. Furthermore, the construction footprint along Willowvale Road is proposed to be revegetated with local provenance species.
Blue-winged Parrot **White-throated Needletail** **Grey-headed Flying-fox** **Sharp-tailed Sandpiper**	All species recorded within the Project Site or the ROI.	Potential collision risk	Operation	These species are addressed in the Berrybank Wind Farm BAM Plan, Golden Plains Wind Farm BAM Plan and draft BAM Plan prepared for the Project under conservation listed species, where impacts to any conservation listed species will trigger an impact and require management. This process requires notification to DEECA for all Projects, allowing DEECA to monitor any significant cumulative impacts. When the mortality of one or more of a conservation listed fauna species is recorded, an investigation into the cause of death is triggered under the draft BAM Plan prepared for the Project, which includes notification to DEECA and DCCEEW (for EPBC Act listed species). The recording of mortalities, along with the requirement to investigate cause of death, can trigger further mitigation measures to reduce ongoing occurrences (if deemed necessary). The implementation of this procedure, along with the general absence of preferred habitat for significant fauna species within the Project Site, reduces the likelihood that the Project would substantially contribute to a cumulative impact for these significant species.

Value	Baseline	Impact	Phase	Cumulative impact
Striped Legless Lizard **Tussock Skink**	6.03ha of low quality habitat identified	1.420 ha of habitat impact	Construction	Stockyard Hill Wind Farm and Golden Plains Wind Farm impacted on Striped Legless Lizard habitat, totalling 86.26 hectares of habitat previously approved for removal. This habitat likely also supported suitable habitat for Tussock Skink. The other primary impact to these species has been through historic land clearing for agriculture, where modification of land for cropping has removed suitable habitat. The additional removal of 1.42 hectares of low quality habitat is not anticipated to substantially contribute towards the known cumulative impact to these species, due to the small size of impact, known extent and one-off nature of the impacts.
Raptors (Wedge-tailed Eagle, Black Falcon, Little Eagle, Spotted Harrier)	All species recorded within the Project Site or ROI.	Potential collision risk	Operation	An impact trigger of one individual threatened bird species has been defined in the draft BAM Plan (including Black Falcon and Little Eagle). An impact threshold of five or more Wedge-tailed Eagle mortalities in a single year has also been set in the draft BAM Plan prepared for the Project to monitor and regulate impacts to raptors. Golden Plains has also included an impact threshold for raptors, for six mortalities in a single year. The first annual BAM Plan report prepared for the project identified three raptor mortalities between October 2024 – September 2025 - Nankeen Kestrel (12 mortalities), Brown Falcon (6 mortalities), Black Falcon (3 mortalities) (Nature Advisory 2025). The management process requires notification to DEECA for all Projects, allowing DEECA to monitor any significant cumulative impacts. The implementation of this procedure reduces the likelihood that the Project would substantially contribute to a cumulative impact to raptor species.
Brolga	Recorded within Project Site and primarily within Lake Widderin, west of Project Site.	Potential collision risk / movement barrier	Operation	An impact threshold of one Brolga mortality is defined in the Project's draft BAM Plan, the Berrybank Wind Farm BAM Plan and Golden Plains Wind Farm BAM Plan. The management process requires notification to DEECA for all Projects, allowing DEECA to monitor any significant cumulative impacts. Ongoing Brolga breeding and flocking monitoring is required for 24 months, to commence upon the first turbine becoming operational. This ongoing monitoring, combined with the mortality detection program, will increase the chance of observing any Brolga mortalities.

Value	Baseline	Impact	Phase	Cumulative impact
				If a Brolga mortality is recorded and associated with the operations of the Project, further detailed monitoring is triggered. If further monitoring indicates Brolga mortalities are potentially a regular occurrence or likely significant, mitigation measures will be developed in consultation with DEECA and implemented based on monitoring results. The implementation of this procedure, along with the low predicted collision risk, and the lack of known breeding or flocking sites within the Project Site boundary, reduces the likelihood that the Project would substantially contribute to a cumulative impact to Brolga.
Microbats	Eastern Bent-wing Bat and White-striped Freetail Bat recorded during microbat surveys. Potential for Yellow-bellied Sheathtail Bat to occur.	Potential collision risk	Operation	Of the 25 most documented species during carcasses searches complied by Symbolix (2020), 10 species were microbats[2]. This included one species of concern recorded within the study area, White-striped Freetail Bat. These species are addressed in the Berrybank Wind Farm BAM Plan, Golden Plains Wind Farm BAM Plan and draft BAM Plan prepared for the Project under conservation listed species, where impacts to any conservation listed species will trigger an impact and require management (as defined in the relevant BAM Plan). This process requires notification to DEECA for all Projects, allowing DEECA to monitor any significant cumulative impacts. Non-threatened microbats will be recorded for all projects as a part of the monitoring and reporting programs for each project, to allow an evaluation of impacts. The implementation of this procedure, along with the lack of any maternity or breeding caves for significant bats or high quality foraging habitat within the Project Site, reduces the likelihood that the Project would substantially contribute to a cumulative impact to microbats.

[2] Assumption that the unidentified bat records were microbat species

8.9 Summary of Residual Impacts

The Project will result in the following residual impacts:

- Direct removal of 1.64 ha of native vegetation, across two EVCs, and included one large scattered tree.
- Direct and indirect impact on 1.234 ha of EPBC Act listed Natural Temperate Grassland of the Victorian Volcanic Plain TEC and 1.42 ha of FFG Act listed Western (Basalt) Plains Grassland TEC.[3]
- Direct removal of 1.42 ha low quality habitat for EPBC Act listed Striped Legless Lizard and FFG Act listed Tussock Skink.
- Direct removal of 7 FFG Act listed Pale Swamp Everlasting individuals.
- Potential collision risk for the following EPBC Act listed species:
    - White-throated Needletail
    - Grey-headed Flying-fox
    - Southern Bent-wing Bat.
- Potential collision risk for the following FFG Act listed species:
    - Brolga
    - Little Eagle
    - Black Falcon
    - Eastern bent-wing Bat.
- Potential for noise, dust and the presence of the workforce and machinery to temporarily disturb fauna or discourage them from using certain areas. However, construction works would be temporary and localised to areas where construction is occurring. Industry standard mitigation would minimise the potential for temporary disturbance to fauna.
- Potential habitat and vegetation degradation could occur from works, via increased sedimentation from surface water runoff, introduction of weeds and pathogens into the Project Site and contamination from accidental spills and machinery maintenance. Industry standard mitigation would minimise the potential for temporary disturbance to fauna.

[3] Direct removal of TECs has been included in the overall direct removal calculations of native vegetation (1.64 ha)

9.0 Proposed Environmental Management Framework

9.1 Overview

This Environmental Management Framework (**EMF**) has been developed to provide the Project with a transparent and integrated governance framework describing the Proponent's proposed environmental management commitments and associated arrangements to ensure that proposed mitigation is effectively implemented regarding impacts on matters of state and/or national environmental significance.

This EMF outlines clear accountabilities for complying with approvals and managing and monitoring environment effects and risks associated with the design, construction, operation, and decommissioning phases. This EMF also details procedures to be followed for the development, review, approval and implementation of the management plans and outlines proposed independent monitoring, auditing and reporting of environmental management documentation for compliance with relevant statutory conditions and standards.

9.2 Governance

9.2.1 Governance Framework

MHWF Nominees Pty Ltd is the Proponent seeking planning approval and is identified in this EMF as the party responsible for governance of the Project's environmental commitments. While MHWF Nominees currently holds ultimate responsibility for ensuring compliance with relevant legislation, regulations, guidelines, and approval conditions, it is acknowledged that ownership and/or construction of the Project may be transferred to another party.

In such a case, this EMF must be implemented by the Project owner at the time, in accordance with the planning permit and other approval requirements.

9.2.2 Roles and Responsibilities

The Proponent will hold overarching responsibility for ensuring compliance of the Project with the State and Commonwealth environmental approval requirements for environmental management throughout the lifecycle of the Project. The Proponent will ensure that all its employees, contractors (and their sub-contractors) are made aware of, and are instructed to comply with, the conditions of the consent relevant to activities they carry out in respect of the development.

The Proponent will engage a contractor who will be responsible for the detailed design and construction of the Project. The contractor will be responsible for preparing a Construction Environmental Management Plan (**CEMP**) to meet all statutory requirements as it relates to the scope of their works and environmental requirements. The CEMP will be prepared in accordance with the Proponent's Environmental Management System (**EMS**) (see **Section 9.3**), this EMF and any requirements set out in the Project's planning permit conditions or EPBC Act approval conditions.

The contractor's CEMP will include roles and responsibilities, reporting procedures, authorisations for managing environmental incidents, non-compliance, environmental management and mitigation, risk assessment and inspection and audit of the Project during the detailed design and construction phase. These obligations are detailed in the contract between the two parties.

The CEMP will be prepared before the commencement of construction and will be reviewed by the Proponent. Once completed the CEMP will be submitted to the relevant authority for their review, approval and endorsement to satisfy the planning permit condition prior to the start of works.

The CEMP will be periodically reviewed and where necessary revised by the contractor to reflect the stage of construction and environmental risks associated with that stage of construction. Any major modifications to the CEMP must be undertaken with the written consent of the relevant authority. The Proponent will review the contractor's documentation to confirm consistency with the requirements of the EMS, this EMF and subplans.

The Proponent's EMS will be revised to reflect the operational status of the Project. The Operational Environmental Management Plan (**OEMP**) will be prepared in line with the EMS and to meet all statutory requirements as it relates to the scope of their works and environmental requirements.

The Proponent will undertake audits and inspections of the contractors to assess compliance and environmental management. The scope and frequency of the environmental audits is described in **Section 9.3.3**. The contractors will be required to keep and supply records that support compliance and environmental obligations to the Proponent. Incidents and non-compliances must be reported to the Proponent in accordance with the timeframes and to meet the requirements specified in the contract, and as described in **Section 9.3.4**.

Project roles and responsibilities are outlined in **Table 9.1.**

Table 9.1 Roles and Responsibilities

Level within organisation	Responsibilities
Proponent Project Manager	• Responsible for implementation of the Proponent's Environmental Policy. • Responsible for engagement of contractor who will be responsible for preparing a CEMP to meet all statutory requirements. • Responsible for the preparation of the OEMP to meet all statutory requirements. • Responsible for delivery of the Project in accordance with the Proponent's EMS, this EMF, associated plans, and State and Commonwealth conditions of approval. • Review and approve Project design changes and update Project Environmental Advisor and Stakeholder Engagement Officer. • Develop a risk assessment matrix for construction, operation and decommissioning and periodically review the matrix. • Provide adequate resources to allow the implementation of this EMF and the Proponent's EMS. • Issue non-compliance notices and actions to avoid or minimise potential environmental impacts, and failing the effectiveness of such steps, order cessation of a specific activity. • Ensure all Project personnel attend an environmental site induction prior to commencing work. • Ensure the community is well informed of activities at the Project Site, including those which may affect the community and their interests, and be the primary point of contact for community and liaison. • Hold regular Project team meetings.
Project Environmental Advisor	• Ensure site specific environmental requirements are fulfilled. • Ensure sub-contractors and agents comply with the Proponent's EMS, this EMF, management plans and programs. • Request reasonable steps to be taken to avoid or minimise unintended or adverse environmental impacts, and failing the effectiveness of such steps, direct that relevant actions be ceased immediately. • Be the primary point of contact for regulatory agency liaison. • Undertake environmental surveillance, auditing and reporting. • Oversee environmental monitoring. • Provide input to the development and periodic review of the Project's risk assessment matrix. • Ensure all staff and contractors are aware of the community. • Implement consultation requirements and complaints protocols in coordination with the Proponent Project Manager. • Report to the Proponent Project Manager on environmental performance of the contractor and sub-contractors.

Level within organisation	Responsibilities
Contractor Project Manager	• Overall responsibility for all contractors and subcontractors involved in the Project. • Develop a risk management plan for construction and maintain that plan throughout construction. • Consult with Proponent Project Manager in relation to all Project design plan changes. • Ensure adequate resources are available for all contractors and subcontractors to deliver the Project in compliance with the Proponent's EMS, this EMF and other relevant documents. • Ensure all contractors and subcontractors are inducted prior to commencing work. • Hold regular Project team meetings and toolbox talks, ensuring information is shared between all site personnel. • Support and attend Community Consultative Committee (CCC) meetings at the request of the Proponent Project Manager.
Contractor Environmental Advisor	• Obtain the relevant licences and approvals for construction. • Implementation, monitoring and performance against CEMP commitments (as consistent with the planning permit and associated management plans). • Manage environmental incidents in accordance with approval documentation. • Keep environmental related registers including compliance, waste tracking, complaints, training, incidents and non-compliance accurate and up to date. • Undertake regular (at least weekly) environmental inspection and provide advice to ensure compliance with relevant approvals and associated management plans. • Prepare reports (at least fortnightly) on compliance to the satisfaction of the Project Environmental Advisor. • Prepare environmental induction training materials in accordance with the Proponent's EMS, this EMF and associated plans. • Attend and input to daily/weekly Project team meetings with the contractor team to share environmental information such as no-go zones, specific environmental mitigation measures and daily weather review to inform appropriate mitigation e.g. for dust suppression or erosion and sediment control on site. • Deliver and/or implement the management plans and programs identified in **Section 9.3.2** and the additional responsibilities identified in those plans.
All Employees and Contractors	• Complete a site induction prior to commencing works on site. • Attend all environmental training as required. • Comply with the environmental controls in the Proponent's EMS, this EMF and all associated plans, sub plans and strategies. • Undertake all activities in accordance with agreed procedures and work methods. • Implement the actions identified in their management plans and programs in order to comply with the planning permit conditions and other approvals/licences. • Follow instructions of the Project Environmental Advisor.

Level within organisation	Responsibilities
Independent Environmental Auditor	• Review the adequacy of the measures undertaken to deliver the Project in accordance the Proponent's EMS, this EMF, management plans, programs and State and Commonwealth approvals. • Independent audits to be undertaken within six months of the commencement of construction and every three years thereafter, consistent with the requirements of the approval. • Request reasonable steps to be taken to avoid or minimise unintended or adverse environmental impacts, and failing the effectiveness of such steps, direct that relevant actions be ceased immediately. • Provide an audit report to be forwarded to the responsible authority as relevant that: ○ assesses whether the Project complies with the relevant requirements in this consent, and any strategy, plan or program required under the consent. • Recommend appropriate measures or actions to improve the environmental performance of the development and any strategy, plan or program required under the consent.
Regulators and Agencies	• Review and assess applications and decide whether to grant primary and secondary permits and approvals. • Review, comment and where necessary approve relevant plans and documents as required by the planning permit conditions.
Victorian Minister for Planning	• Review the environment report and determine its adequacy for public notice. Following public notice, the Proponent will consider and respond to submissions, update the environment report where required, and submit to the Minister for Planning for assessment. • Prepare an assessment on the potential environmental effects of the Project based on the findings of this environment report for the Project. • Assess and determine planning approval under the *Planning and Environment Act 1987*, as the responsible authority including decision on appropriate conditions of the planning permit.
Commonwealth Minister for the Environment and Water	• Decide whether to approve the Project under the EPBC Act informed by the Victorian Minister's assessment of matters under the EPBC Act through the Environment Report as set out in the Bilateral Agreement. • Review and approve management plans relevant to EPBC matters as required by any conditions of approval under the EPBC Act.
WTOAC	• Assess and approve the Project's CHMPs as the relevant RAP/or approval authority. WTOAC is responsible for assessing and approving CHMP 19190. In accordance with Section 52 of the *Aboriginal Heritage Act 2006*, the planning permit cannot be issued by the Minister until the CHMP for the Project has been approved.

9.2.3 Proponent's Company Environmental Policy

All Project activities will be undertaken in accordance with the Proponent's Environmental Policy (see **Appendix F**). The policy has been structured generally in accordance with ISO 14001:2015 and documents the Proponent's commitment to minimising environmental impacts in addition to the principles of ecologically sustainable development to ensure the protection and preservation of the environment for current and future generations.

The Proponent's values of integrity, generating ideas and empowerment of people underpin the Environmental Policy. This includes maintaining their ISO accredited EMS, set and review environmental objectives and targets, conduct regular audits, inspections and monitoring programs to monitor controls, and ensure compliance with all relevant environmental legislation and project approval conditions.

The Proponent aims to undertake environmental assessment for projects early to identify best opportunities to avoid, minimise, mitigate and offset environmental impacts, as well as implementing risk management processes and robust 'lessons learned' processes for all projects to support continual improvement of environmental outcomes.

The policy will be communicated to all staff and contractors during induction and will be periodically reviewed against environmental performance and industry practice.

As the Proponent and operator, MHWF Nominees will hold full and ultimate responsibility for implementation of this policy and are committed to managing and delivering this Project in accordance with the statutory requirements and commitments within this environment report.

9.3 Environmental Management System

9.3.1 Overview

This EMF is intended to form part of the Proponent's broader integrated EMS, which aims to ensure a consistent approach to management of environmental impacts and risks. The Proponent's EMS is certified in accordance with *AS/NZS ISO 14001 Environmental Management Systems – requirements with guidance for use*. The EMS is structured generally in accordance with ISO 14001:2015's process of Plan-Do-Check-Act. (see **Figure 9.1**).

The EMF includes of a suite of discipline-specific environment management plans (**EMPs**), which will incorporate the commitments, objectives and targets outlined in this Environment Report and the conditions of any planning permit, EPBC Act approval, or other Project consent or approval.

The purpose of the EMF is to establish a process for the comprehensive and integrated identification and management of environmental risks and impacts throughout all phases of the Project.

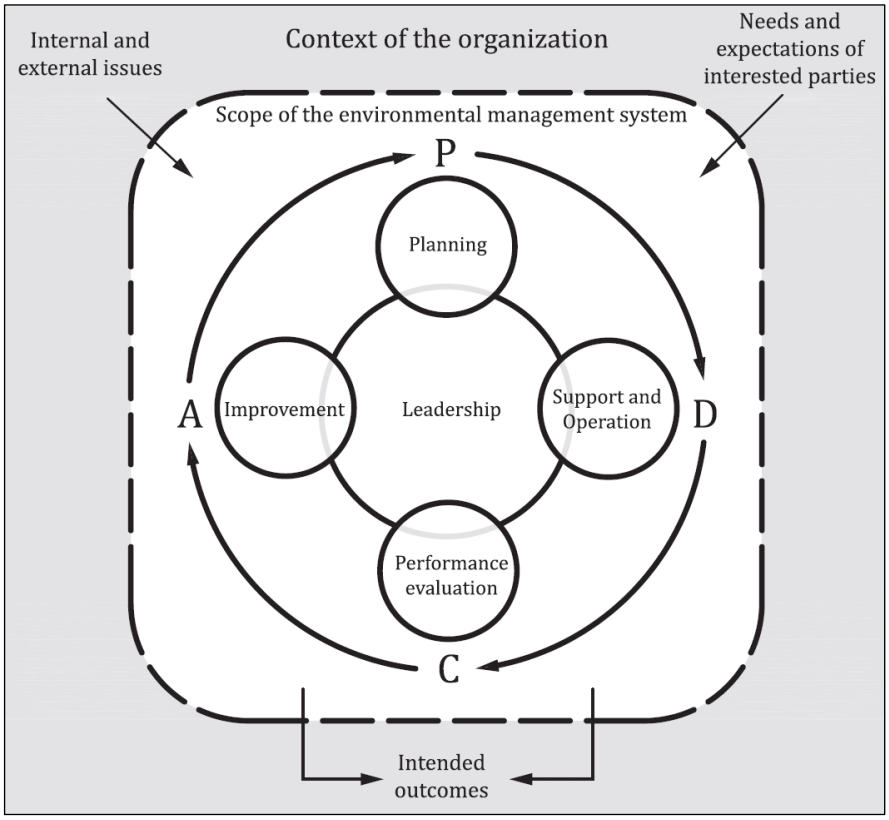

Figure 9.1 Plan, Do, Check, Act Cycle

9.3.2 Environmental Management Plans, Strategies and Programs

The Project's EMF consists of several key documents, including environmental strategies, plans and programs which contain the detailed mitigation measures necessary to minimise environmental impact and achieve compliance. It also consists of relevant legislation, approvals and approval conditions that must be complied with. The structure of proposed environmental management documents is shown in **Figure 9.2.**

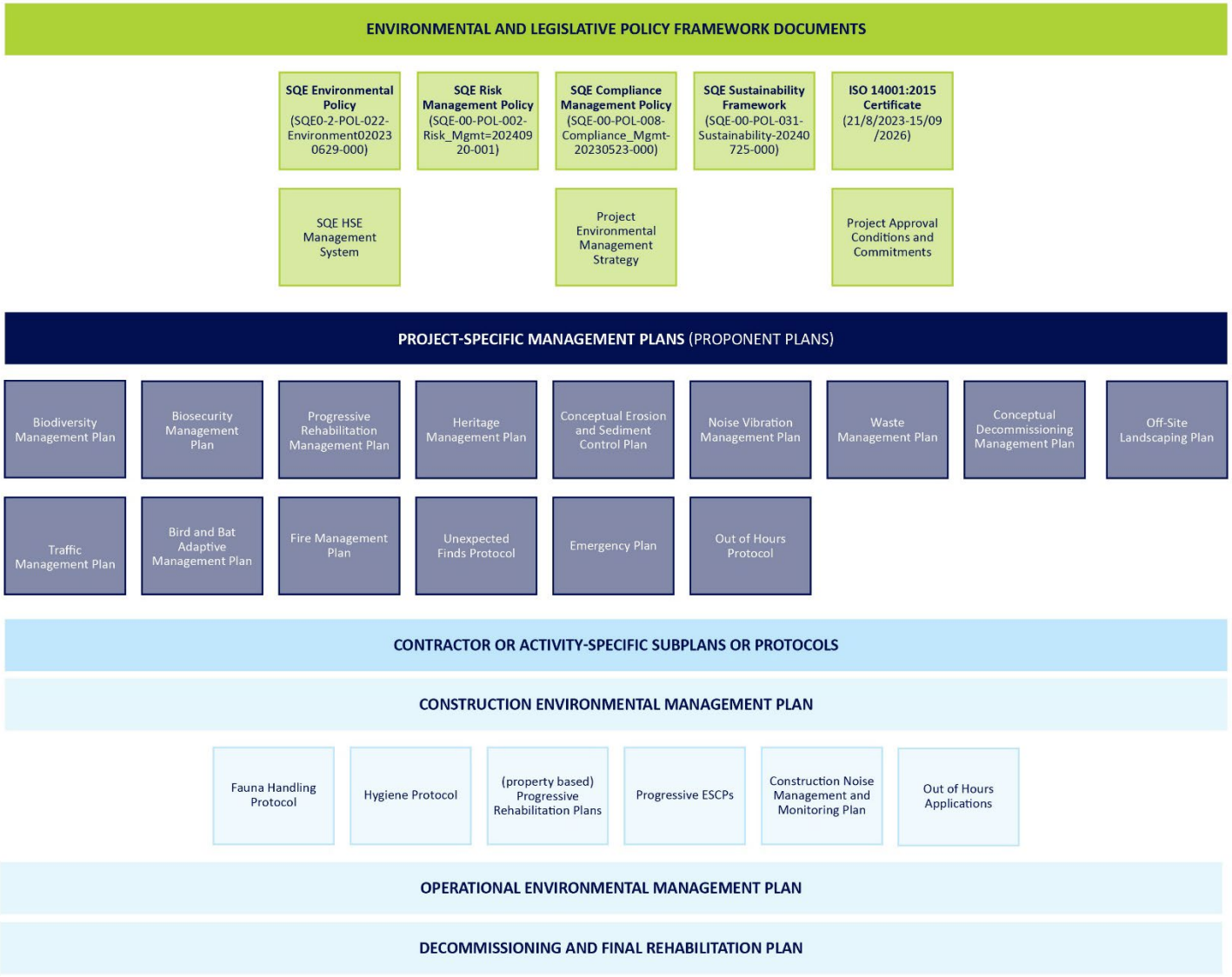

Figure 9.2 Environmental Management Framework Documentation

These management plans will consolidate all environmental management sub-plans, mitigation and management measures for the Project as well as outline their implementation, and any relevant performance objectives, standards and measurement criteria. Project contractors will prepare management plans in accordance with the Proponent's EMS and relevant planning permit conditions, and plans will be reviewed and approved by the Proponent prior to commencement of any works. Where required, these plans will be subject to regulatory approval from relevant agencies.

Key environmental management plans relating to biodiversity include:

- Biodiversity Management Plan
- Biosecurity Management Plan
- Progressive Rehabilitation Plan
- Bird and Bat Adaptive Management Plan
- Conceptual Erosion and Sediment Control Plan.

Several additional plans and their associated mitigation measures relate to technical assessments undertaken for the planning permit application and are not the subject of this environment report. These other plans identified in **Figure 9.2** are not discussed within this chapter but will be prepared in accordance with permit conditions. Details of the technical assessments and associated mitigation or management measures for disciplines beyond biodiversity can be found in the planning permit application for the Project.

The proposed management of the Project's environmental performance will be reviewed and revised as necessary throughout the Project's life to ensure continuous improvement. Revisions to management documentation may be potentially informed by:

- Results of monitoring programs.
- Findings of internal compliance audits.
- Findings of reporting by the independent environmental auditor.
- Incidents and/or complaints.
- Changes to the Project's design and/or activities.
- Other voluntary compliance obligations taken by the Proponent.

Where major revisions of CEMP/OEMP or sub-plans are proposed, contractors will submit documentation to the Proponent for review and approval. Major revisions are considered changes that will affect work and construction practices, roles and responsibilities, social and environmental risks and overall Project delivery. Any major documentation revisions must be amended within relevant documentation and re-submitted for approval by the relevant authorities.

9.3.2.1 Implementation of biodiversity management commitments

Table 9.2 provides a summary of proposed biodiversity mitigation and management measures (as detailed in **Table 8.20**) and the associated environmental management plan/document where the mitigation measure will be implemented.

Table 9.2 Biodiversity Mitigation and Management Measures Implementation

MM ID	Proponent management plan	Contractor management plan
MM-BD01 – Site inductions	OEMP	CEMP
MM-BD02 Vegetation surveys along the OD transport route	Biodiversity Management Plan	CEMP
MM-BD03 – Native vegetation protection	Biodiversity Management Plan	CEMP,
MM-BD04 – Natural Temperate Grassland of the Victorian Volcanic Plain	Biodiversity Management Plan	CEMP
MM-BD05 – Tree Protection Zones	Biodiversity Management Plan	CEMP
MM-BD06 - Offsets	Biodiversity Management Plan	NA
MM-BD07 – Pre-clearance surveys	Biodiversity Management Plan, OEMP	CEMP
MM-BD08 – Weed and pest control	Biosecurity Management Plan, OEMP	CEMP, Hygiene Protocol
MM-BD09 – Waterways crossings	Conceptual Sediment and Erosion Control Plan	CEMP
MM-BD10 – Sediment and erosion control	Conceptual Sediment and Erosion Control Plan, OEMP	CEMP
MM-BD11 – Surface water run off	Conceptual Sediment and Erosion Control Plan, OEMP	CEMP
MM-BD12 – Indigenous species	Offsite Landscape Screening Plan	NA
MM-BD13 – Rehabilitation of disturbed areas	Progressive Rehabilitation Plans, OEMP	CEMP
MM-BD14 - Dust control	OEMP	CEMP
MM-BD15 – Maintenance activities and refuelling	OEMP	CEMP
MM-BD16 – Trenching	Biodiversity Management Plan	CEMP, Fauna Handling Protocol
MM-BD17 – Lighting	OEMP	CEMP
MM-BD18 – Vehicle collision	OEMP	CEMP
MM-BD19 - Bat and Avifauna Management Plan	Bat and Avifauna Management Plan	OEMP
MM-BD20 – Trial Plan	Bat and Avifauna Management Plan	OEMP
MM-BD21 – Brolga Compensation Plan	Biodiversity Management Plan	

9.3.3 Monitoring and Compliance

Environmental monitoring will be conducted to measure performance of the EMF, including the effectiveness of environmental control measures, and compliance with the Project statutory approvals, licences, plans, strategies, and programs. Monitoring of the Project will be conducted through environmental inspections, environmental audits and specific monitoring of environmental aspects as required by planning permit conditions.

9.3.3.1 Environmental inspections

A range of environmental inspections will be conducted by the Proponent and the Contractor to evaluate the effectiveness of environmental controls and general compliance with the implementation of the EMF (and associated strategies, plans and programs) for site-based activities.

The Contractor must undertake regular (at least weekly during construction and monthly during operation) environmental inspections of all work areas. The outcomes of the environmental inspections will be reported within an environmental inspection checklist. The checklist will be developed as part of the Contractors CEMP. During the Construction phase of the Project, a report must be provided to the Proponent at least fortnightly documenting environmental compliance.

The Project Environmental Advisor will undertake environmental inspections (monthly, or more frequently as required during construction) to monitor compliance with the Project Approvals and adherence to the Strategies, Plans and Programs.

9.3.3.2 Environmental auditing

Independent environmental audits

Audits will be undertaken by an independent environmental auditor during construction and operation at regular intervals to verify compliance of the Project to environmental management documentation and the conditions of approvals. Independent audits will be undertaken within six months of the commencement of construction and at 6 month intervals during construction, followed by every three years thereafter during operation.

Audits are a mechanism proposed by the Proponent to display their commitment to achieving positive environmental outcomes and to comply with relevant legislation and regulations. This approach is proposed to provide communities and regulators with additional confidence in the environmental management of the Project and its potential impacts. This independent auditing will assess the effectiveness of environmental management documentation and assist in developing and implementing additional mitigation/ management measures if audits identify areas requiring further attention.

Internal project audits

The Proponent will undertake internal audits to verify compliance with the Project's statutory approvals and this EMF. The undertaking of the audits will be in accordance with a risk-based audit schedule, which will be developed by the Proponent Project Manager and Environmental Advisor and may be conducted on a quarterly basis during the construction phase. The audit schedule will identify the scope of the audit, timing of the audit, and the person(s) who will conduct the audit.

The internal project audits will be coordinated by the Project Environmental Advisor together with the Project Manager.

9.3.3.3 Specific environmental monitoring

Discipline specific monitoring will be undertaken where required by conditions of approval. Specific monitoring requirements will be detailed within the relevant discipline environmental management documentation, including the method, timing, responsibility and monitoring outputs (such as records/reporting types).

Relevant to biodiversity, specific monitoring requirements will be detailed in the draft BAM Plan (see **Appendix E**), Biodiversity Management Plan, Biosecurity Management Plan, Progressive Rehabilitation Management Plan, and Conceptual Erosion and Sediment Control Plan.

The complete biodiversity related monitoring requirements will be detailed within the appropriate management plan to be prepared following issue of Project approvals, and in accordance with the conditions of the planning permit and EPBC Act approval.

9.3.3.4 Non-compliance & Non-conformance

Non-compliance and non-conformance with the EMF and conditions of approval may be identified in several ways, such as internal or external independent audit, inspection, incident investigation or review.

Non-compliance is considered failure to meet a statutory or approval requirement, while non-conformance is considered a failure to meet an internal system, plan, or procedural requirement.

Where a non-compliance or non-conformance has been identified:

1. Notification to the Proponent Project Manager and Project Environmental Advisor within 2 days that a non-compliance or non-conformance has been identified/occurred.
2. The Proponent Project Manager and Project Environmental Advisor (or delegate) will ensure that the non-compliance or non-conformance is investigated by the responsible party (the party responsible for the non-compliance or non-conformance) in order to ascertain the source, reason, and implications of the non-compliance or non-conformance.
3. Corrective/ preventive actions will be developed and implemented by the responsible party, in consultation with Proponent Project Manager, and may include (but are not limited to):
    a. Amendment of the EMS or relevant strategy, plan, program, or procedure
    b. Additional or change of control measures
    c. Staff training
    d. Disciplinary actions.
4. The responsible party will prepare and submit an investigation report to the Proponent Project Manager which documents the above information.

A compliance tracking matrix is an internal Proponent document that has been developed as a tool for tracking compliance with the various Project statutory approvals. The Environmental Advisor will maintain the compliance tracking matrix throughout the development and ensure it is updated as required in response to the outcomes of compliance monitoring.

In the event of a non-compliance, the Proponent would provide a written report of the incident to the relevant authority where required.

9.3.4 Environmental Reporting and Notification

9.3.4.1 Internal reporting

Internal reporting for the Project will be designed to capture the overarching effectiveness of the EMF. The Project's performance against commitments made in this environment report and management plans will be regularly monitored by Project contractors and the Proponent. The Project contractors will present findings of monitoring in regular reports to the Proponent. The Contractor Environmental Advisor will prepare compliance reports for the Project Environmental Advisor at least fortnightly during the construction phase and at an agreed frequency during the operational phase of the Project (see **Table 9.1**).

The Project contractors, as per agreements, will present findings of monitoring, in regular reports to the Proponent. This is in addition to any Proponent led monitoring to enable internal and external reporting as required. This internal reporting will detail the implementation of monitoring programs, Project performance against identified objectives and targets, compliance with and effectiveness of environmental management documentation, and where required, corrective actions undertaken to meet mitigation measures or stakeholder interactions and complaints handling.

Specific reporting requirements (including the form and timing of reporting) will be agreed between the Proponent and the contractor, and internal reports are expected to include:

- Details of inspections/audits undertaken, key findings, and an assessment of Project performance against identified objectives and targets.
- Results and trends of monitoring programs.
- Assessments of overall compliance with Project approval requirements.
- Assessments of the effectiveness of environmental management, and recommendations for additional monitoring activities if required.
- Details of any environmental incidents if relevant and corrective action if undertaken

Internal reporting will be regularly reviewed by the Proponent, allowing for the early detection of potential non-compliance (see **Section 9.3.3.4**) and the identification of additional monitoring activities (see **Section 9.3.3**) to be proposed if considered necessary.

9.3.4.2 External reporting

Annual reporting, summarising Project performance against Project commitments during both the construction and operation phases, will be provided to the relevant authority if required by any Project approval. Specific reporting requirements are expected to include:

- Statistics about workers on the site including competencies.
- Standards of construction of infrastructure on the site.
- Occurrences of environmental incidents and non-compliances.
- The environmental performance of the Project against its objectives and targets.

In addition to annual reporting, internal environmental audits will be conducted at regular intervals to verify compliance of the Project to environmental management documentation during construction and operation (see **Section 9.3.3.2**).

Reporting to relevant regulatory authorities will also be required for specific disciplines as detailed in relevant environmental management documentation. For example, the Project's draft BAM Plan outlines reporting requirements to the responsible authority, as well as DEECA and DCCEEW (see **Appendix E**).

9.3.4.3 Incident reporting

Any non-compliance with environmental management documentation identified above, or unexpected environmental event or incident, will be reported to the site manager/supervisor for investigation and the Proponent's management team informed. In the event of a notifiable incident (i.e. a pollution incident that causes or threatens to cause 'material harm' to human health or the environment, as defined in the EP Act), it is the responsibility of the Proponent's management to conduct an investigation and file an incident report to the relevant authority (i.e. DEECA, DCCEEW, DTP Planning or EPA Victoria) in accordance with applicable legislation. Contractors may carry out the investigation, yet the responsibility for a full investigation and notification to relevant regulators rests with the Proponent's management.

9.3.5 Training, Competence an Awareness

9.3.5.1 Site inductions

During construction, health, safety, environment and quality (HSEQ) training will be managed by the Contractor (primarily the Contractor Environmental Advisor and the Contractor Project Manager). This responsibility of site inductions for operation will sit with the site operator.

All site personnel will be required to undergo a site-specific induction. The induction will include:

- An introduction to the approval requirements and the contractor and proponent's obligations, as well as the location of approval documents.
- Awareness training for sensitive environmental and social issues and relevant impacts.
- An overview of the management measures.
- Clear communication of roles and responsibilities, including any stop-work situations, incident, non-compliances and notification requirements.
- The detail and location of other environmental management plans (see **Section 9.3.2**).

An induction register will be maintained including the name, date, and confirmation of completion of induction for all personnel.

9.3.5.2 Toolbox talks

Toolbox talks will be used to raise awareness and educate personnel on HSEQ-related matters.

All toolbox talks will include discussion regarding environmental issues and risks (e.g., vegetation clearance protocols, the management of unexpected heritage items, erosion and sedimentation control and noise and dust management).

Toolbox talks will be led by the Contractor Environmental Advisor or delegate during construction and the Proponent Project Manager or delegate during operation phase.

A toolbox register will be maintained including the attendees, date and topic, with acknowledgement records of attendees available.

9.3.5.3 Environmental awareness training

Targeted environmental awareness training will be provided, as specified in any plan listed in **Section 9.3.2**, to employees, contractors, or subcontractors who have specific authority or responsibility for environmental management, or to those performing activities that carry a risk of environmental impact.

Environmental awareness training may be delivered by external providers or by the Contractor Environmental Advisor or delegate.

The Contractor Environmental Advisor and Project Environmental Advisor will be responsible for maintaining training records during construction and operations, respectively, and for ensuring that workers complete the necessary environmental awareness training prior to undertaking a specialist task or high-risk activity.

9.3.6 Complaints Handling and Response

Complaints received via the dedicated Project contact details will be provided to the Proponent Project Manager within 24 hrs of receiving the complaint. Additional Proponent key personnel will be notified for action, including the Project Environmental Advisor, Contractor Environmental Advisor and Stakeholder Engagement officer, as required.

Complaints and enquiries will be responded to within 48 hours of receipt. Initial contact with the complainant will either outline actions taken to resolve the complaint or a holding statement while the complaint is being investigated.

All complaints will be recorded in the Complaint Register which will be maintained by the Project Environmental Advisor or delegate. The register will include:

- Date and time of the complaint.
- Type of communication (i.e. telephone, mail, meeting, email etc.).
- Name, address, contact telephone number of complainant/enquirer (where available).
- Nature of the complaint and enquiry.
- Actions taken in response including any associated timeframes for implementing the action.
- If no action was taken, the reason why no action was taken.
- When and how the complainant/enquirer was notified of the outcome or provided an answer.

The Complaints Register will be placed on the website (noting personal information relating to the complaint or the person making the complaint will be removed) and updated monthly.

10.0 Conclusion

The primary objective of the Project is to supply renewable energy to the NEM, provide additional electricity regulation and security through provision of energy storage, and support Victoria's transition to increased uptake of renewable energy as the decommissioning of traditional forms of energy generation approaches. The Project will play an important role in achieving these goals through provision of 421 MW of renewable energy, enough to power 260,000 households each year.

The Project Site is located within the proposed Central Highlands REZ. Its location is highly compatible for a wind farm due to the availability of a strong and consistent wind resource, proximity to the existing electricity network, relatively low population density, as well as the ability to avoid and minimise impacts on sensitive receptors (such as dwellings), biodiversity, heritage and other environmental values.

This environment report addresses the key matters outlined in the scoping document. Findings from technical assessments and stakeholder consultation have informed the iterative design of the Project. Revisions to the Project design to avoid potential biodiversity impacts were prioritised, such as relocating access tracks, overhead reticulation poles and other Project infrastructure. Where it was not feasible to avoid a potential impact because it would have secondary effects or because it would mean that the broader Project objectives would not be able to be met, mitigation measures were identified.

These mitigation measures are included in the Project's EMF, which acts as a transparent and integrated governance framework that ensures that proposed mitigation is effectively implemented regarding impacts on matters of state and/or national environmental significance. The EMF enables acceptable environmental outcomes and incorporation of mitigation into the relevant statutory approvals and consents so that the Project is constructed and operated in accordance with all relevant legislation, policy and guidelines.

A summary of the key residual impacts from the Project are detailed below.

10.1 Biodiversity

Construction of the Project is only anticipated to result in the direct removal of 1.64 ha of native vegetation, including 1.571 ha of native vegetation patches and one large scattered tree (0.069 ha). Native vegetation impacts are primarily associated with road and access track upgrades, underground reticulation and the underground transmission line. The Project will offset this residual impact on native vegetation removal through a third-party offset site. To minimise any further impacts on native vegetation, fencing will be installed around retained areas of native vegetation near the works area to clearly demarcate these as No-Go Zones prior to construction commencing. TPZs will also be implemented to prevent indirect losses of retained trees during construction.

EPBC Act listed NTGVVP was recorded along Willowvale Road reserve. The underground transmission line is therefore proposed to be located within the western side of the Willowvale Road reserve, to avoid impacting on the larger area of grasslands located on the eastern side. The Project would result in a residual impact of 1.234 ha on NTGVVP, with the construction footprint impacting a small portion of the eastern extent of 13 discrete low-moderate quality patches of the community along the road reserve. These edge impacts would only slightly reduce the extent of each patch, but no patches

would be removed entirely. However, as the minimum patch size threshold for NTGVVP is 0.05 ha or 0.5 ha, any patches that have been reduced to a retained area of less than 0.05 ha has been included in the impact assessment and assumed lost. This residual impact has been assessed as significant.

During construction, specific measures will be implemented to ensure protection of retained areas of the NTGVVP community, including fencing and/or bunting around works areas in proximity to known areas of the NTGVVP community and installing signs highlighting the importance and significance of the community at the entrance to these work areas. Following completion of construction, the construction corridor along Willowvale Road, as well as any temporarily disturbed area across the construction footprint not required for operation, will be rehabilitated.

The Project would also impact on 1.42 ha of the total 6.03 ha recorded extent of FFG Act listed WBPG. While the Project would slightly reduce the extent of this community by 1.42 ha, this is spread across 18 patches and the areas to be removed were recorded as low quality habitat for EPBC Act listed Striped Legless Lizard and FFG Act listed Tussock Skink. The remaining 4.61 ha of the community recorded within the Flora Assessment Area will be retained. The Project has been assessed as not likely to have a significant impact on this TEC due to the low quality and highly fragmented nature of potential habitat being impacted.

Turbine-free buffers were applied to Lake Widderin (a confirmed breeding and flocking site) to reduce the potential for Brolga to collide with WTGs, resulting in seven turbines being relocated outside of these buffer areas in the current Project design. The resulting predicted collision risk, with the implementation of these buffers is 0.016 collisions annually at a 90% avoidance rate, and 0.003 collisions annually at a 98% avoidance rate. While the risk of the Project impacting on Brolga through turbine collision is considered low, additional mitigation is proposed to be implemented to further minimise potential impacts, including investigating the use and suitability of automated detection systems during the Project's operation, and the ability to increase the height of the minimum RSA from 44 m above ground to 61 m above ground (to avoid typical Brolga flight heights). The Project has conservatively assessed a minimum RSA of 44 m to provide a worst-case assessment of potential impacts. The final WTG model and specifications will be determined during detailed design.

Other bird and bat species observed during bird utilisation surveys and microbat surveys have potential to collide with WTGs. Most birds were recorded flying below RSA height or at ground level (92.3% of all observed flights), with only 3.1% of all observed flights at RSA height. A BAM Plan will be implemented for the Project to minimise, manage and mitigate residual collision risk for listed bird and bat species arising from operation of the wind farm and to ensure unexpected bird mortalities are responded to appropriately. This includes a five-year monitoring plan, as well as species specific monitoring programs over several years for Brolga and White-throated Needletail. No threatened or migratory avifauna species are anticipated to be significantly impacted during operation of the Project.

With the implementation of design avoidance and mitigation measures, the Project is not expected to significantly impact on Commonwealth or State matters of environmental significance, except for residual impacts on EPBC Act-listed Natural Temperate Grassland of the Victorian Volcanic Plain. This residual impact has been assessed as significant, as the Project would reduce the extent of this TEC by 1.234 ha.

10.2 Social and Economic

The Project would result in several socio-economic benefits to the local community and broader region. Agreements between the Proponent and host landholders, as well as neighbouring landholders through commercial agreements, would provide annual payments and allow for shared economic benefits from the Project. This economic boost to farmers enables them to secure supplementary income annually, for decades, while also helping to 'drought-proof' their business. This sustains the farming practice and diversifies farming revenue for years to come.

The Project represents a capital investment of $1.5 billion and is expected to provide economic and social benefits to the local region and broadly across Victoria. Over its 30-year operational life, the Project is projected to generate $200 million in economic stimulus via payments to landholders and neighbours, wages, council contributions, and community benefit schemes. During construction, the Project is expected to support a workforce of 360 FTE jobs (140 FTE direct jobs and 220 FTE indirect jobs). The Project is expected to source 50% of its total direct FTEs locally.

Perceived negative impacts from the Project were also identified which include changes in the locality's landscape character caused by visual impact of wind turbines, impacts on way of life and accessibility from temporary construction work, reduced social cohesion from conflicting perspectives on wind farms, and housing and accommodation sector strain from incoming workforce. The Proponent has and will continue to implement a range of mitigation to avoid or minimise potential negative socio-economic impacts including consideration of these factors in the Project development, an employment strategy, a procurement strategy, a construction and workforce accommodation strategy and continued implementation of the stakeholder engagement plan.

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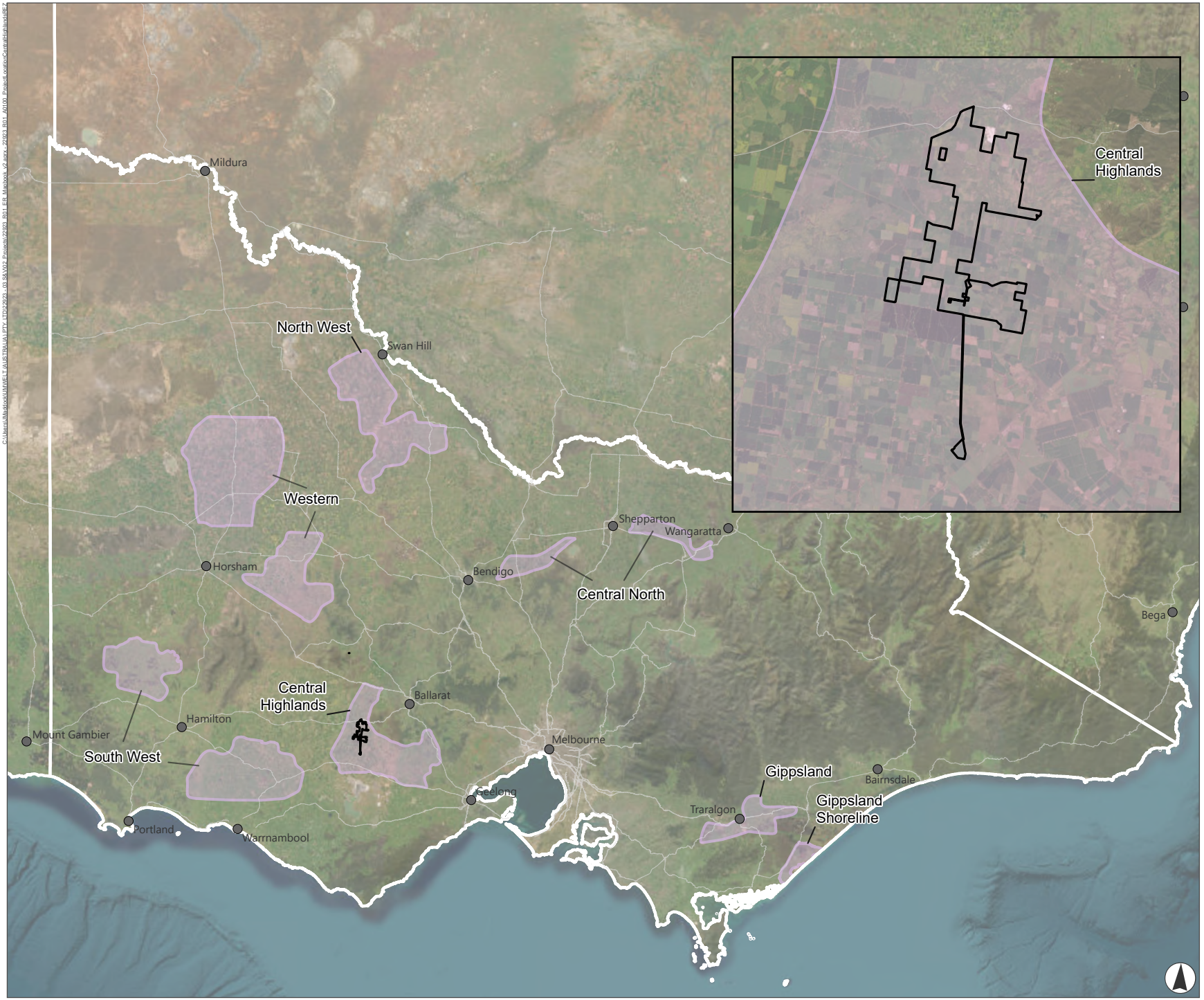
Appendix A

Map Book

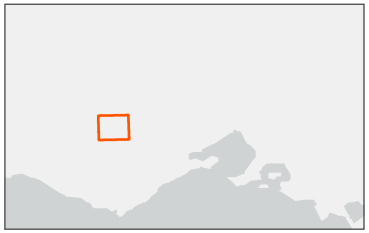


APPENDIX A.1

Moreton Hill Wind Farm: Project location within the proposed Central Highlands REZ

Legend

- Project Site
- Proposed REZs - Vic
- State Border
- Major Roads



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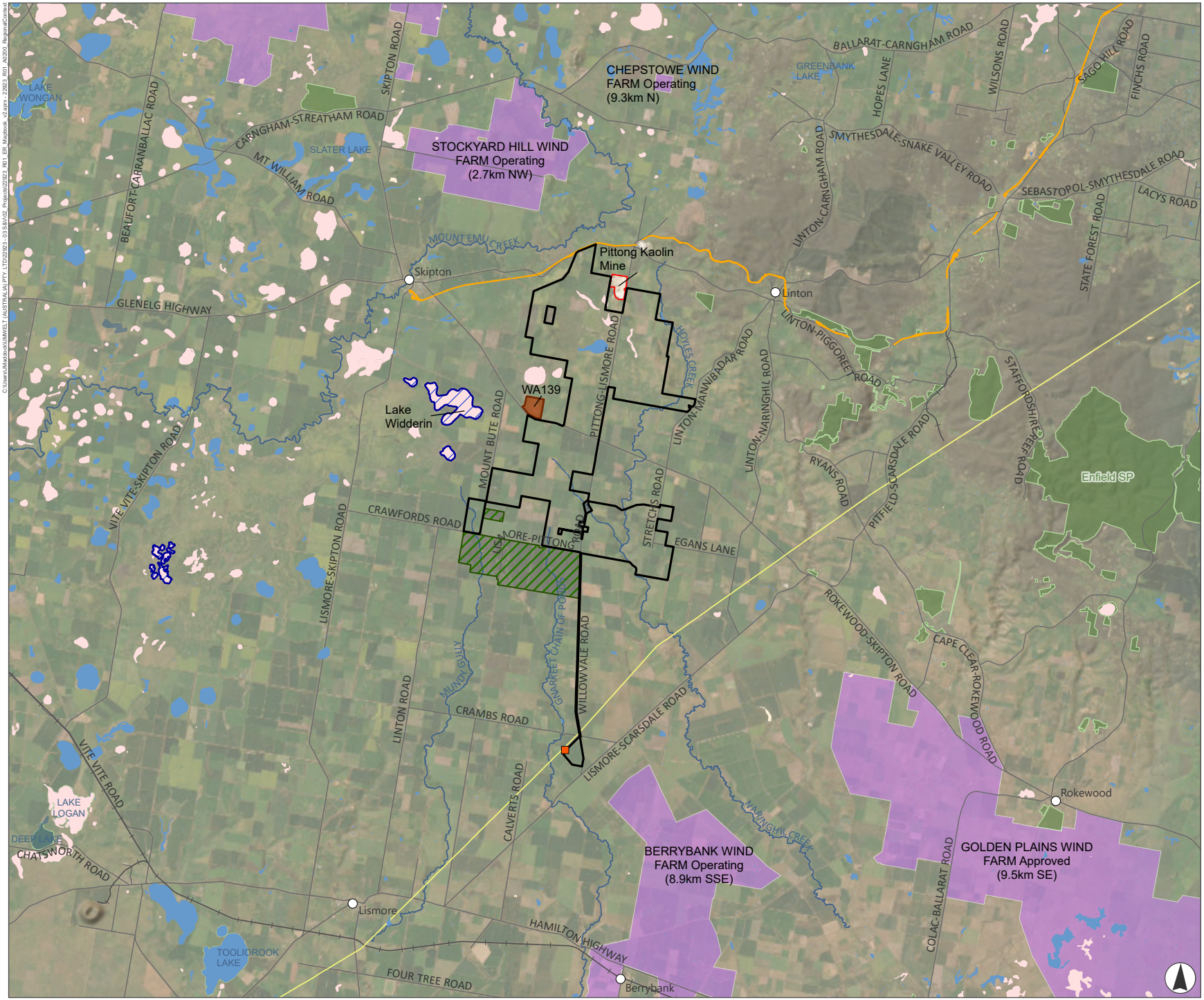

APPENDIX A.2

Moreton Hill Wind Farm: Regional Context

Legend

- Project Site
- Berrybank Terminal Station
- Extractive industry work authority
- Community Use Area - Ballarat-Skipton Rail Trail Reserve
- Pittong Kaolin Mine
- HVP Plantation
- Important Wetland
- Watercourse
- Roads
- Railway
- Existing 220kV Transmission Line
- Waterbody
- Parks and Reserves

Renewable Energy Facilities

- Wind Energy Facility

Current Wetland

- No Emergent Vegetation
- Sedge/Grass/Forb
- Unknown

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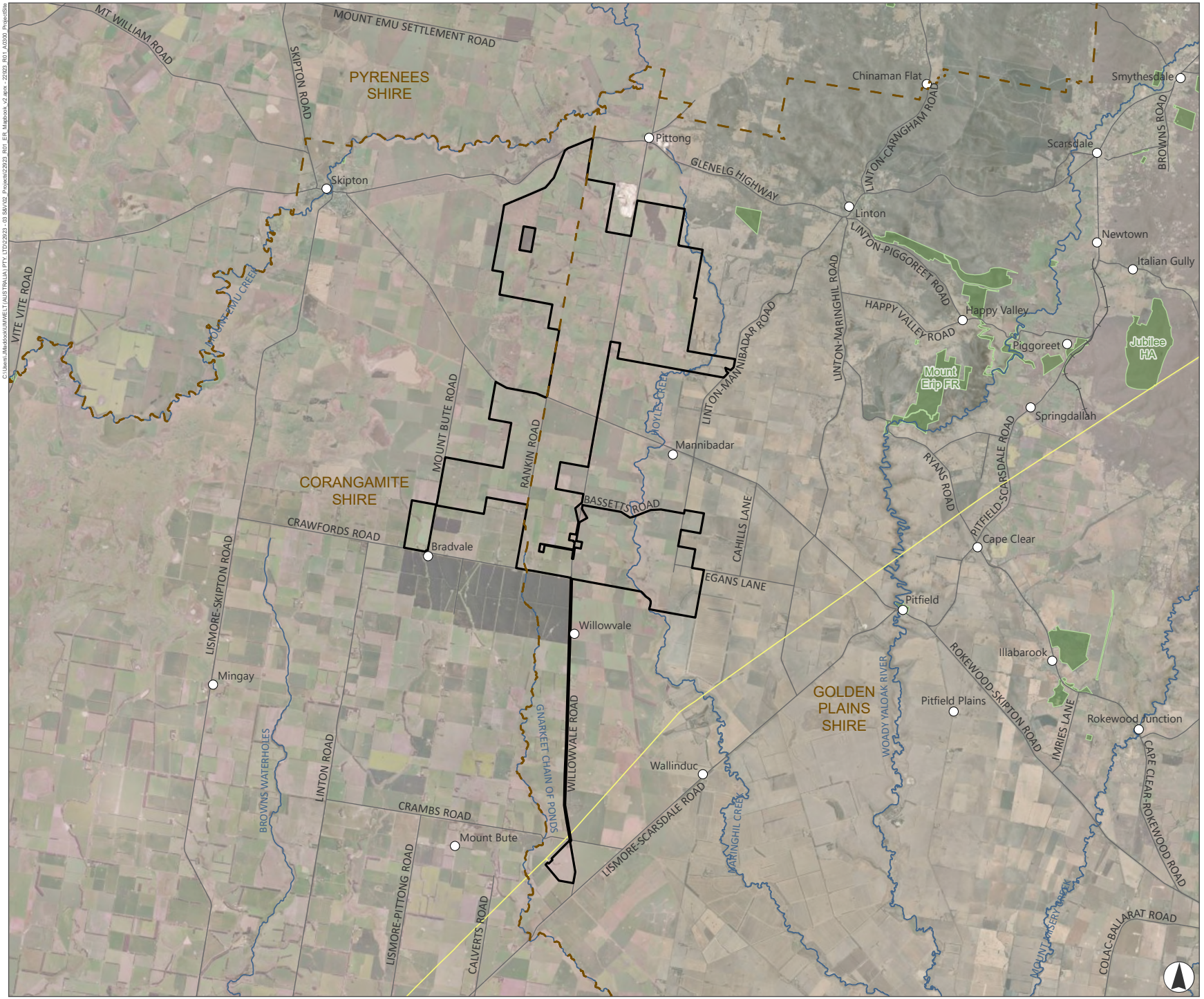

APPENDIX A.3

Moreton Hill Wind Farm: Project Site

Legend

- Project Site
- Local Government Area
- Existing 220kV Transmission Line
- Parks and Reserves
- Roads
- Major Watercourse
- Railway

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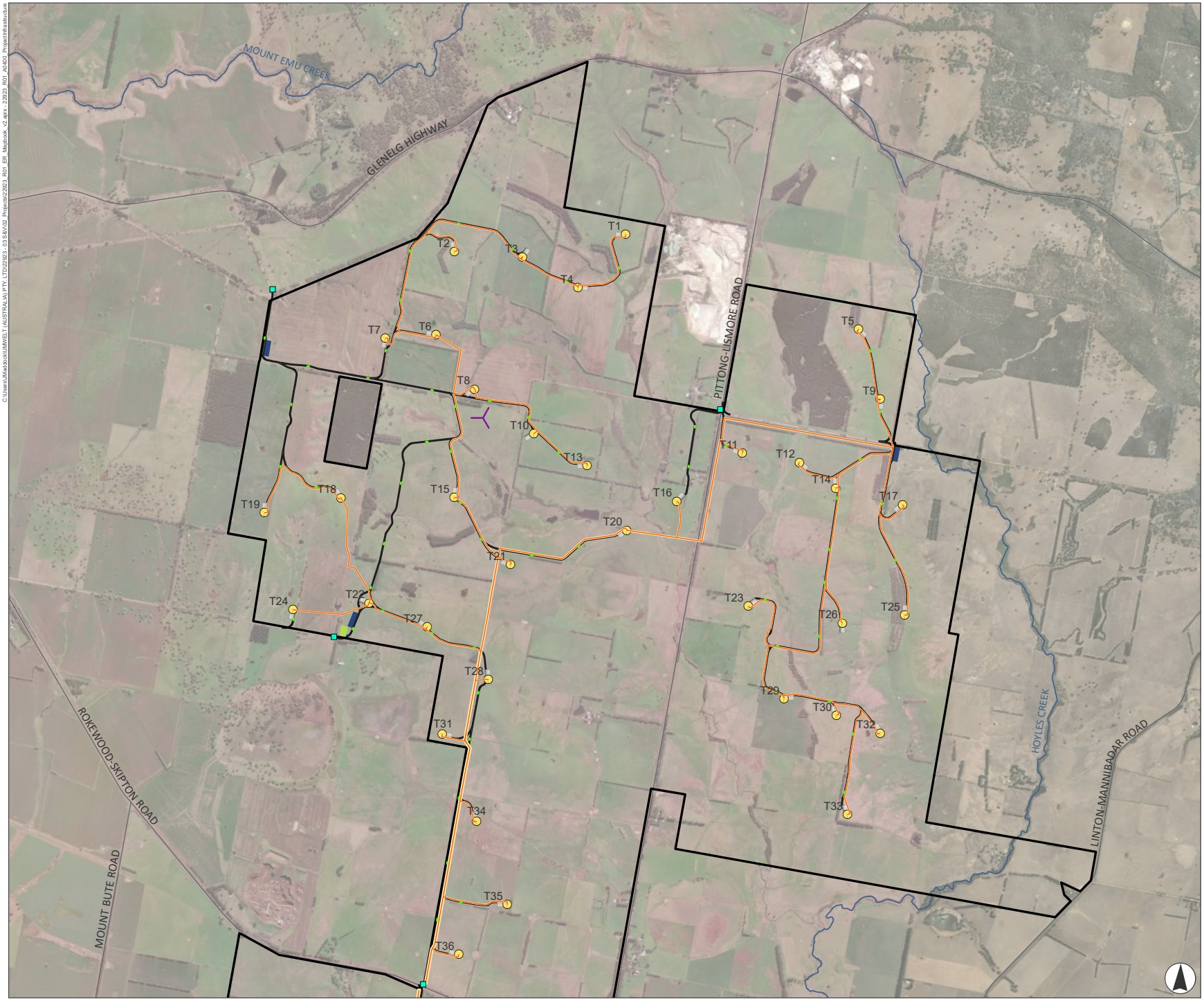

APPENDIX A.4a

Moreton Hill Wind Farm: Project Infrastructure

Legend

- Roads
- Major Watercourse
- Project Site
- Site Entry Point
- Turbine
- Underground Electrical Reticulation
- Passing Bay
- Temporary Met Mast
- Temporary Concrete Batch Plant
- Laydown Area
- Wind Turbine Hardstand
- Access Tracks
- Watertank
- Underground Electrical Reticulation Footprint

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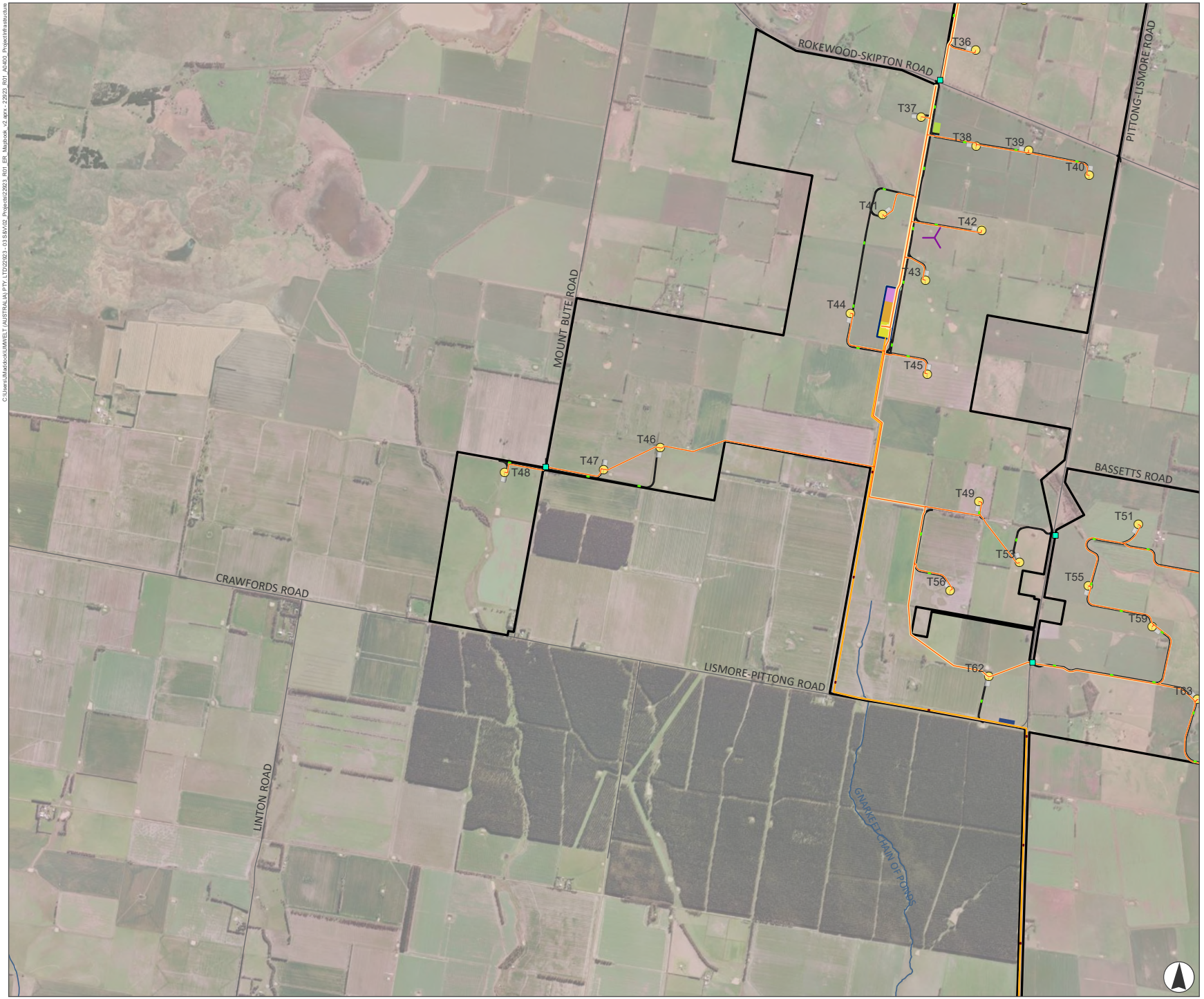

APPENDIX A.4b

Moreton Hill Wind Farm: Project Infrastructure

Legend

- Roads
- Major Watercourse
- Project Site
- Site Entry Point
- Turbine
- Underground Transmission Line
- Overhead Electrical Reticulation
- Electrical Pole
- Underground Electrical Reticulation
- Passing Bay
- Underground Transmission Line Cable Pits
- Temporary Met Mast
- Temporary Concrete Batch Plant
- Laydown Area
- Wind Turbine Hardstand
- 10m Site Office Compound Landscape Buffer
- Access Tracks
- Watertank
- Current Onsite Substation Location
- Current O&M Facility Location
- Current BESS Location
- Underground Electrical Reticulation Footprint
- Underground Transmission Line Footprint

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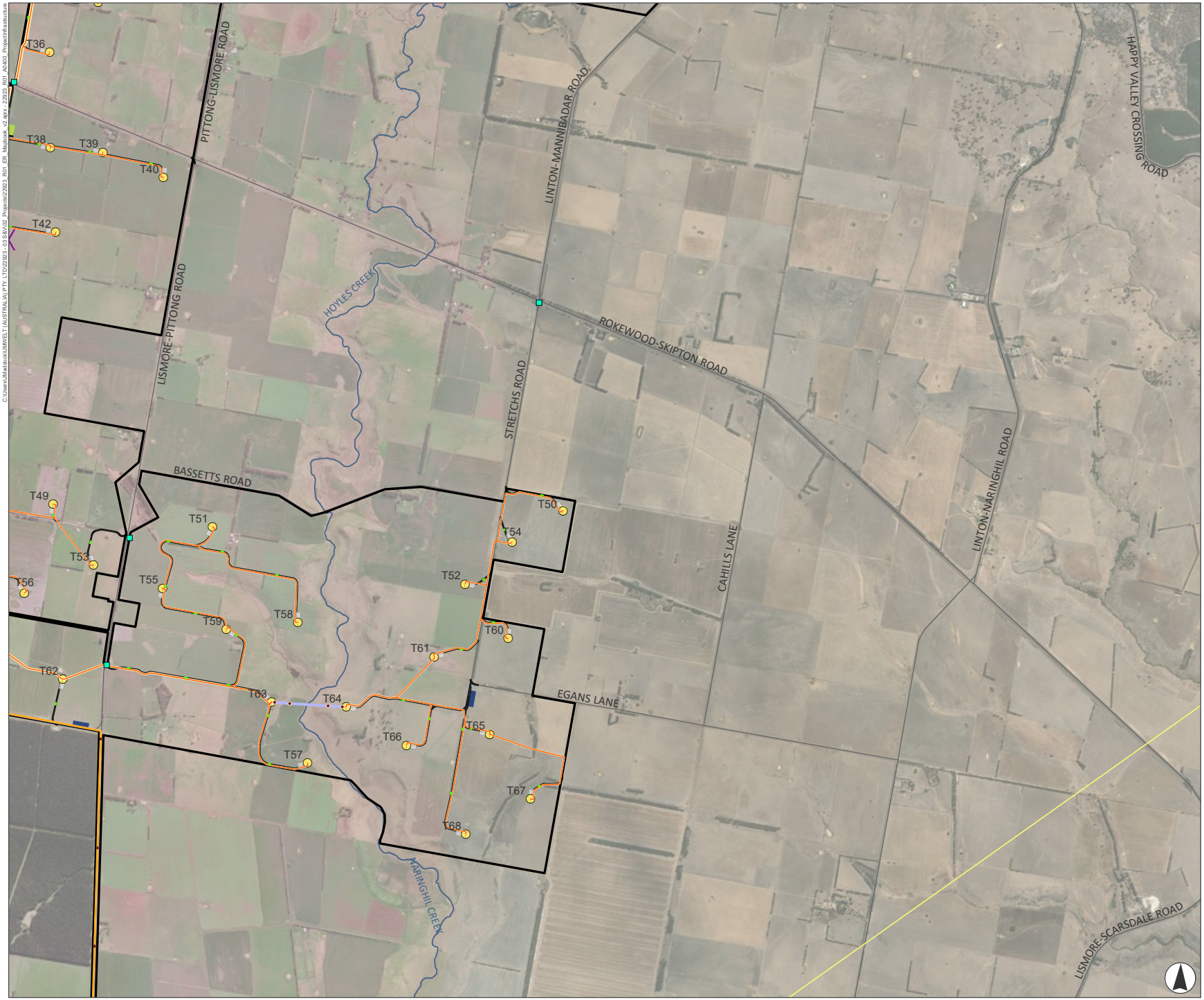

APPENDIX A.4c

Moreton Hill Wind Farm: Project Infrastructure

Legend

- Roads
- Major Watercourse
- Project Site
- Existing 220kV Transmission Line
- Site Entry Point
- Turbine
- Underground Transmission Line
- Overhead Electrical Reticulation
- Electrical Pole
- Underground Electrical Reticulation
- Passing Bay
- Underground Transmission Line Cable Pits
- Temporary Met Mast
- Temporary Concrete Batch Plant
- Laydown Area
- Wind Turbine Hardstand
- Access Tracks
- Watertank
- Underground Electrical Reticulation Footprint
- Underground Transmission Line Footprint

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APPENDIX A.4d

Moreton Hill Wind Farm: Project Infrastructure

Legend

- Roads
- Major Watercourse
- Project Site
- Existing 220kV Transmission Line
- Underground Transmission Line
- Underground Transmission Line Cable Pits
- Berrybank Terminal Station
- Underground Transmission Line Footprint

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Kilometres

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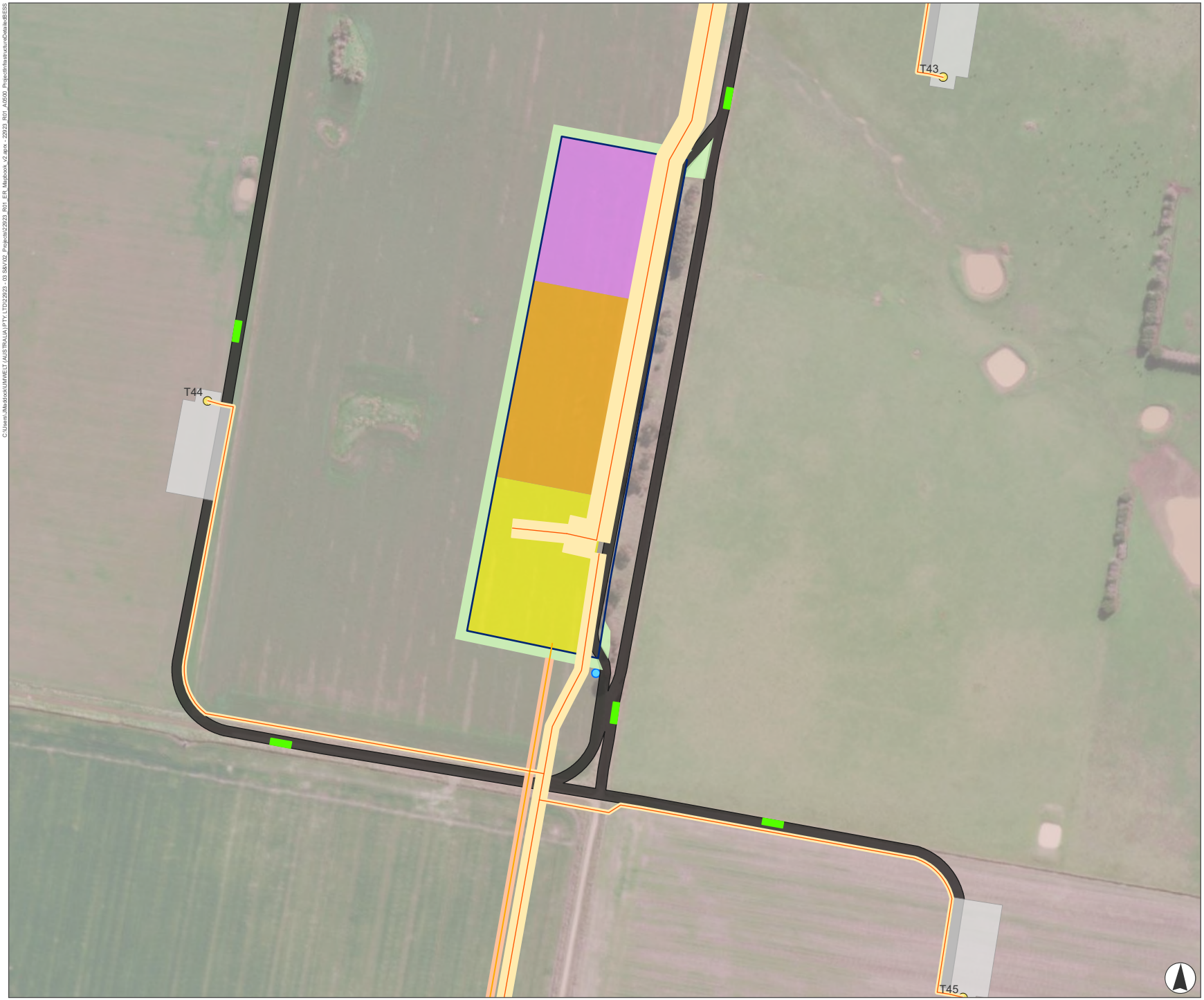

APPENDIX A.5

Moreton Hill Wind Farm: Project Infrastructure - Detailed BESS

Legend

- Project Site
- Turbine
- Underground Transmission Line
- Underground Electrical Reticulation
- Passing Bay
- Wind Turbine Hardstand
- 10m Site Office Compound Landscape Buffer
- Site Office Substation Compound Fence
- Access Tracks
- Watertank
- Current Onsite Substation Location
- Current O&M Facility Location
- Current BESS Location
- Underground Electrical Reticulation Footprint
- Underground Transmission Line Footprint

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APPENDIX A.6

Moreton Hill Wind Farm: Section of Overhead Reticulation that Crosses Naringhil Creek Between T63 and T64

Legend

- Project Site
- Major Watercourse
- Turbine
- Overhead Reticulation Pole
- Overhead Electrical Reticulation
- Underground Electrical Reticulation
- Passing Bay
- Wind Turbine Hardstand
- Access Tracks
- Underground Electrical Reticulation Footprint

0 100 200

Metres

Scale 1:6,500 at A4
GDA2020 MGA Zone 54

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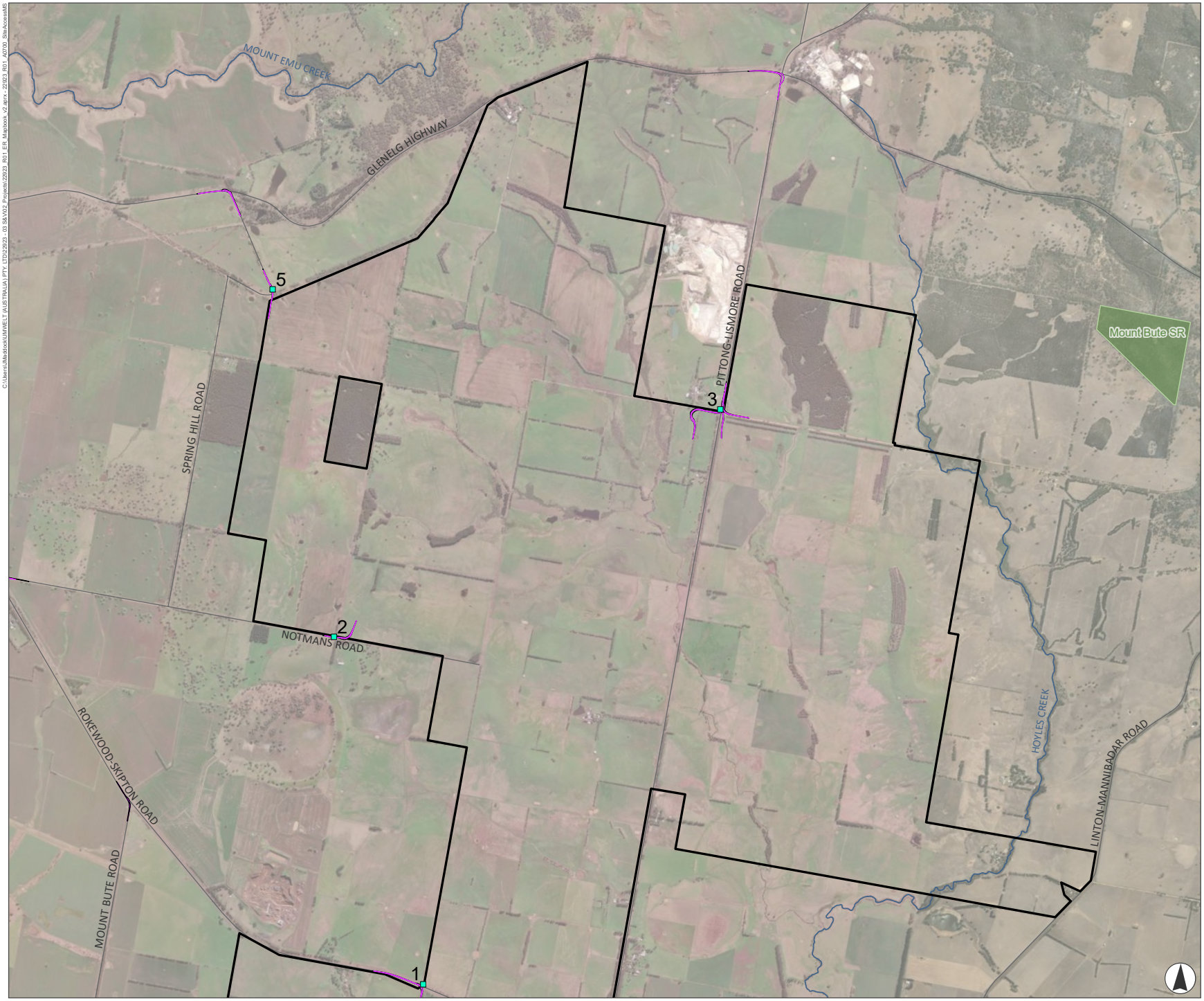

APPENDIX A.7a

Moreton Hill Wind Farm: Site Access

Legend

- Project Site
- Site Entry Point
- Parks and Reserves
- Roads
- Major Watercourse
- Blade Sweep Envelope
- Tyre Impact Envelope - Swept Path

0 1 2

Kilometres

Scale 1:49,000 at A4
GDA2020 MGA Zone 54

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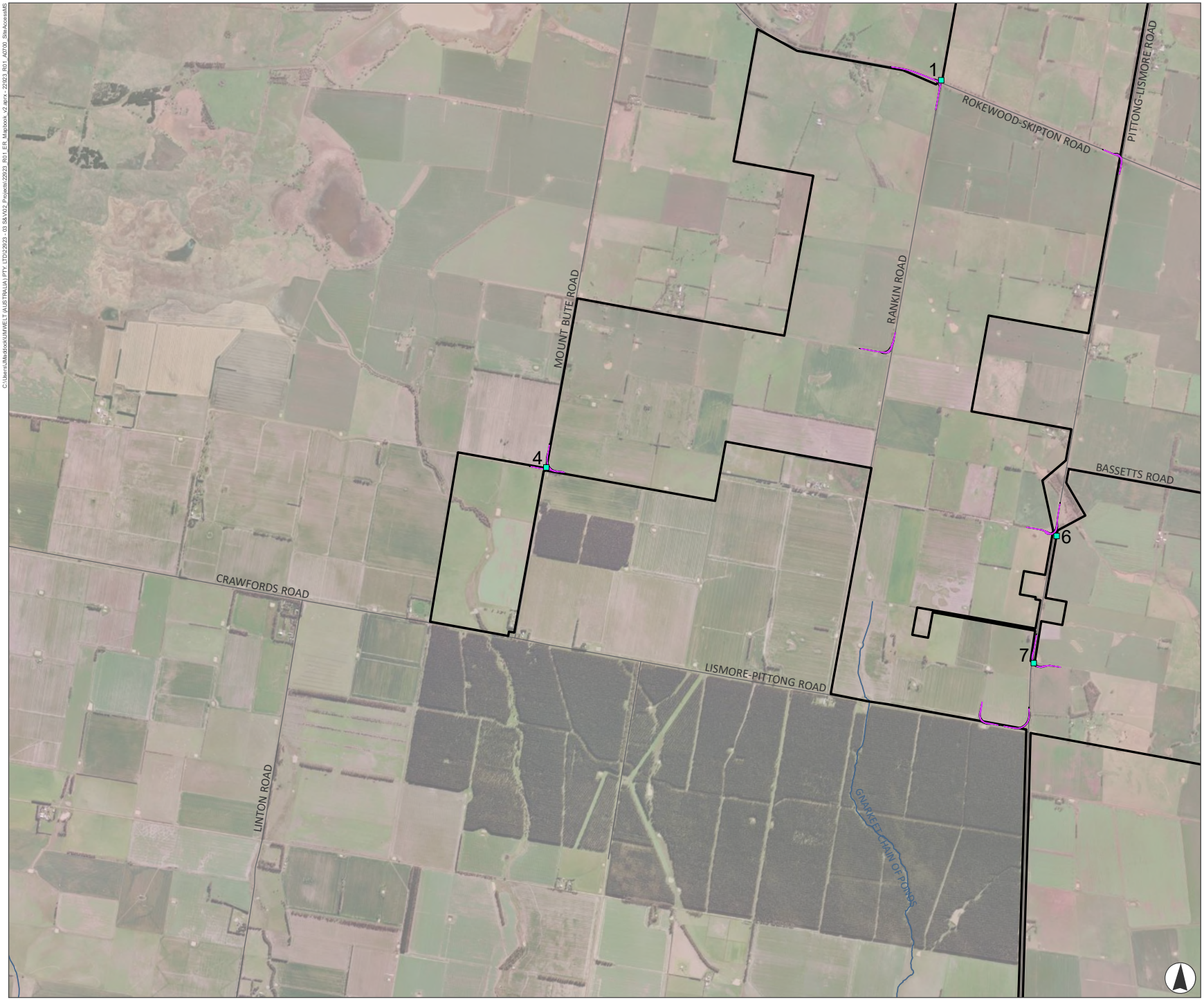

APPENDIX A.7b

Moreton Hill Wind Farm: Site Access

Legend

- Project Site
- Site Entry Point
- Roads
- Major Watercourse
- Blade Sweep Envelope
- Tyre Impact Envelope - Swept Path

0 1 2

Kilometres

Scale 1:49,000 at A4
GDA2020 MGA Zone 54

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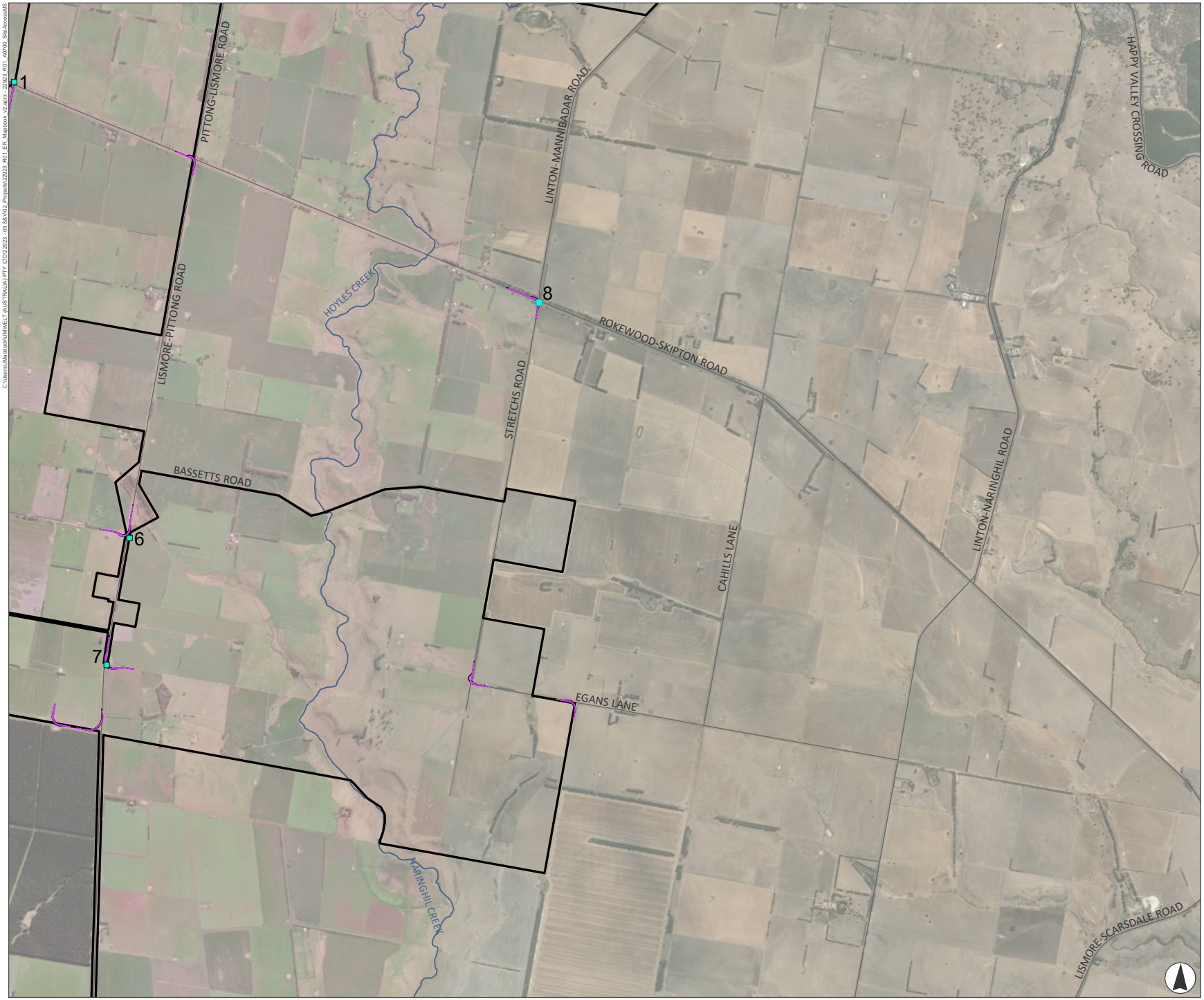

APPENDIX A.7c

Moreton Hill Wind Farm: Site Access

Legend

- Project Site
- Site Entry Point
- Roads
- Major Watercourse
- Blade Sweep Envelope
- Tyre Impact Envelope - Swept Path

0 1 2

Kilometres

Scale 1:49,000 at A4
GDA2020 MGA Zone 54

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APPENDIX A.7d

Moreton Hill Wind Farm: Site Access

Legend

- Project Site
- Roads
- Major Watercourse

0 1 2

Kilometres

Scale 1:49,000 at A4
GDA2020 MGA Zone 54

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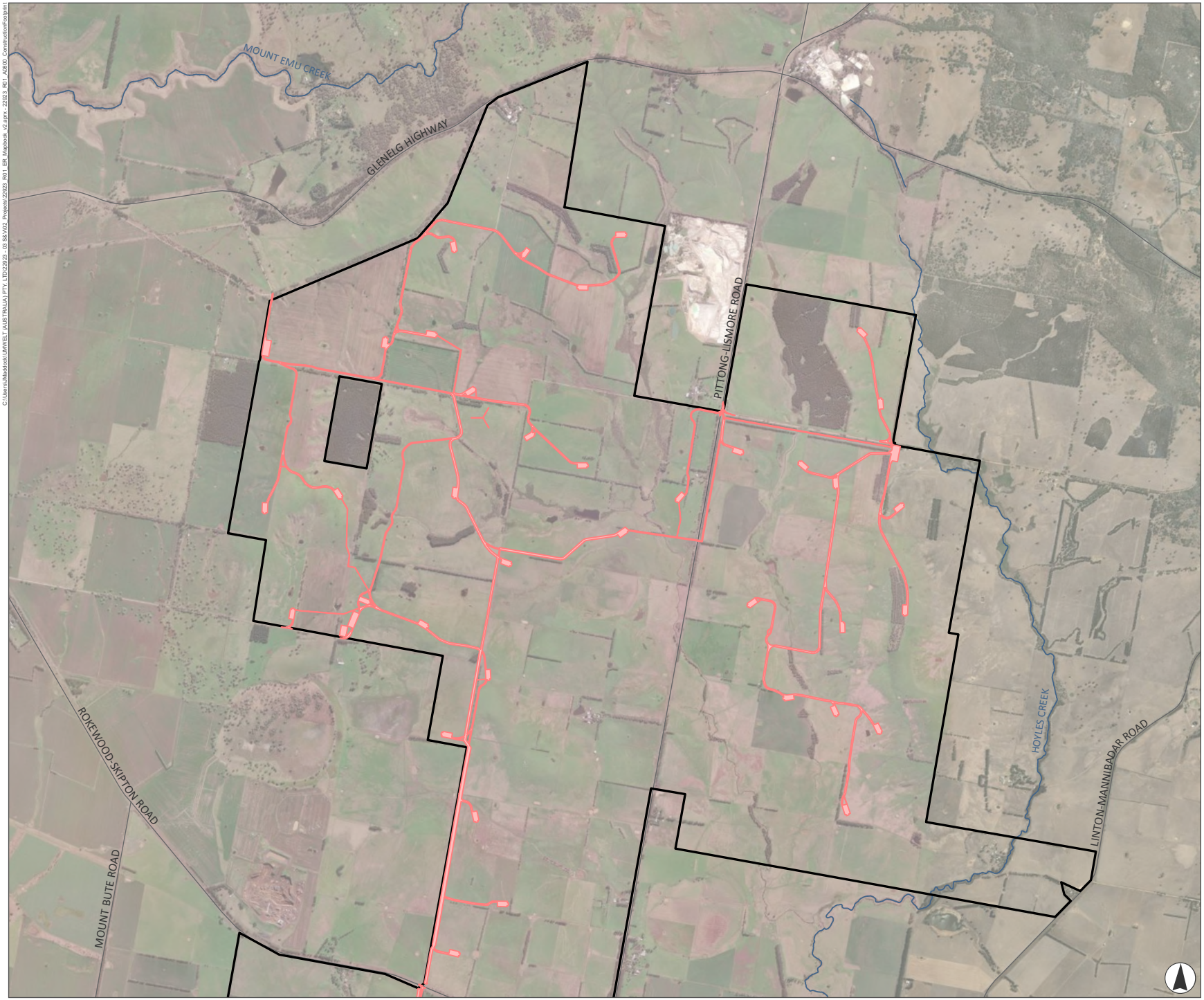

APPENDIX A.8a

Moreton Hill Wind Farm: Construction Footprint

Legend

- Roads
- Major Watercourse
- Project Site
- Construction Footprint

0 1 2

Kilometres

Scale 1:49,000 at A4
GDA2020 MGA Zone 54

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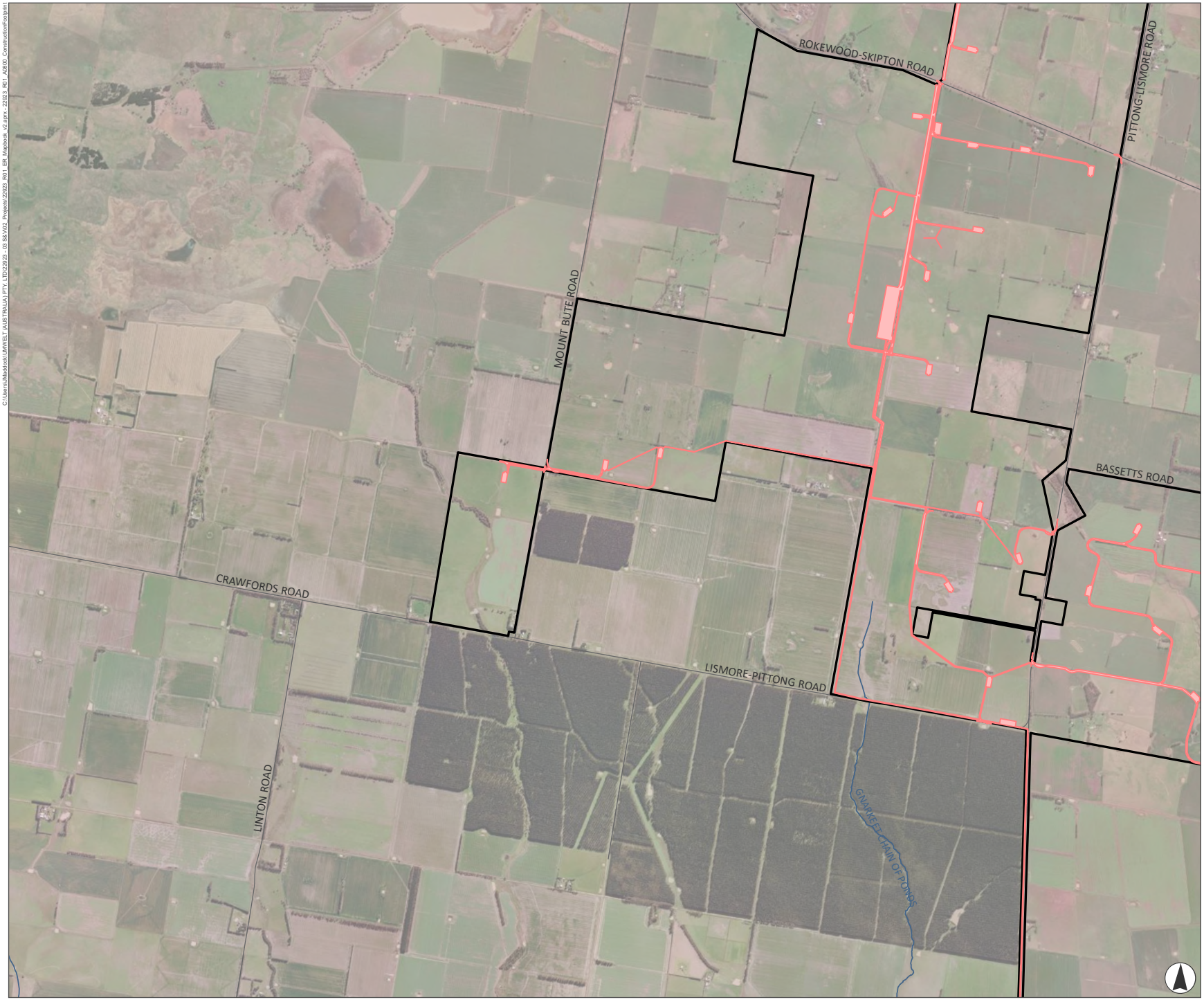

APPENDIX A.8b

Moreton Hill Wind Farm: Construction Footprint

Legend

- Roads
- Major Watercourse
- Project Site
- Construction Footprint

0 1 2

Kilometres

Scale 1:49,000 at A4
GDA2020 MGA Zone 54

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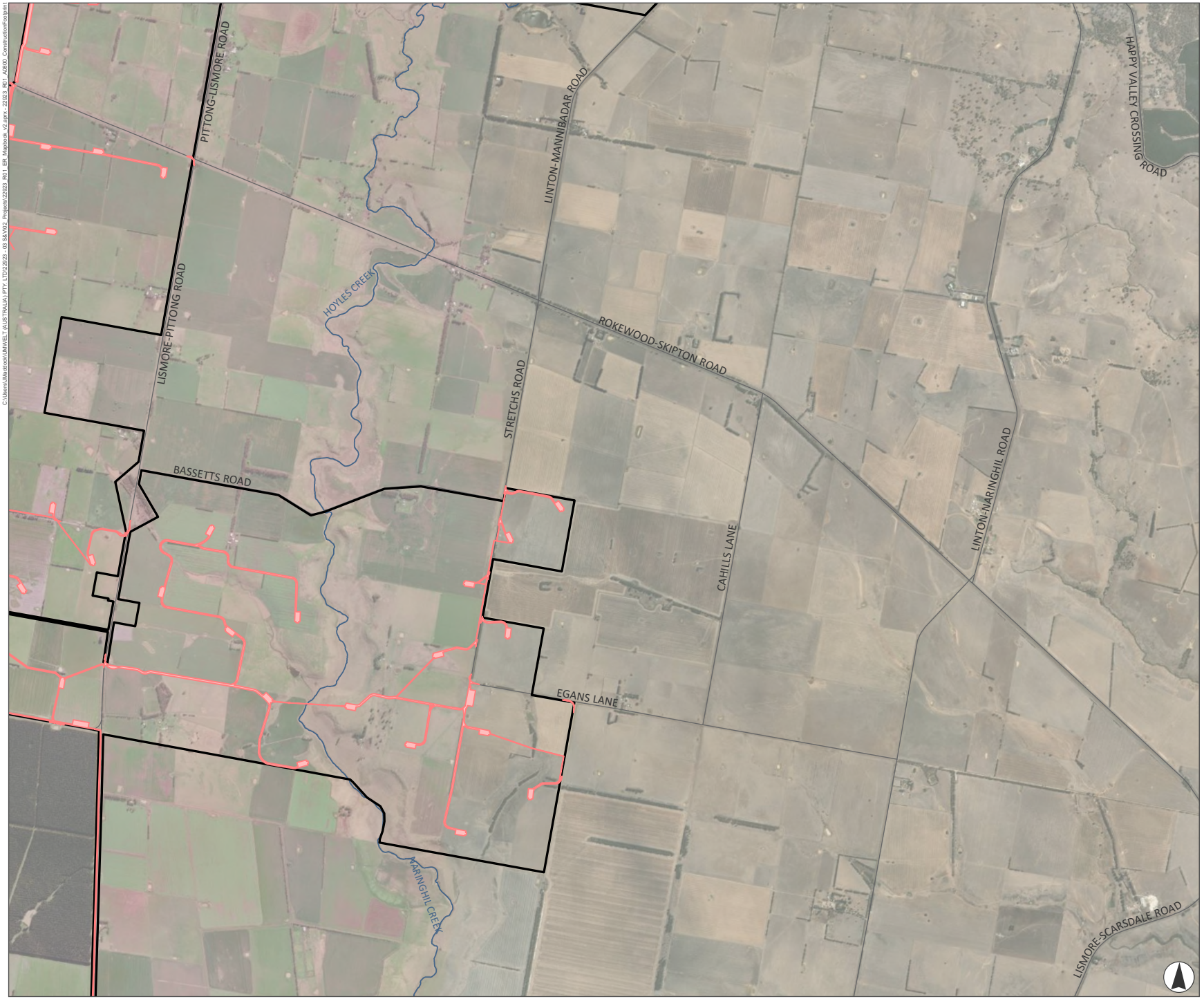

APPENDIX A.8c

Moreton Hill Wind Farm: Construction Footprint

Legend

- Roads
- Major Watercourse
- Project Site
- Construction Footprint

0 1 2

Kilometres

Scale 1:49,000 at A4
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APPENDIX A.8d

Moreton Hill Wind Farm: Construction Footprint

Legend

- Roads
- Major Watercourse
- Project Site
- Construction Footprint

0 1 2

Kilometres

Scale 1:49,000 at A4
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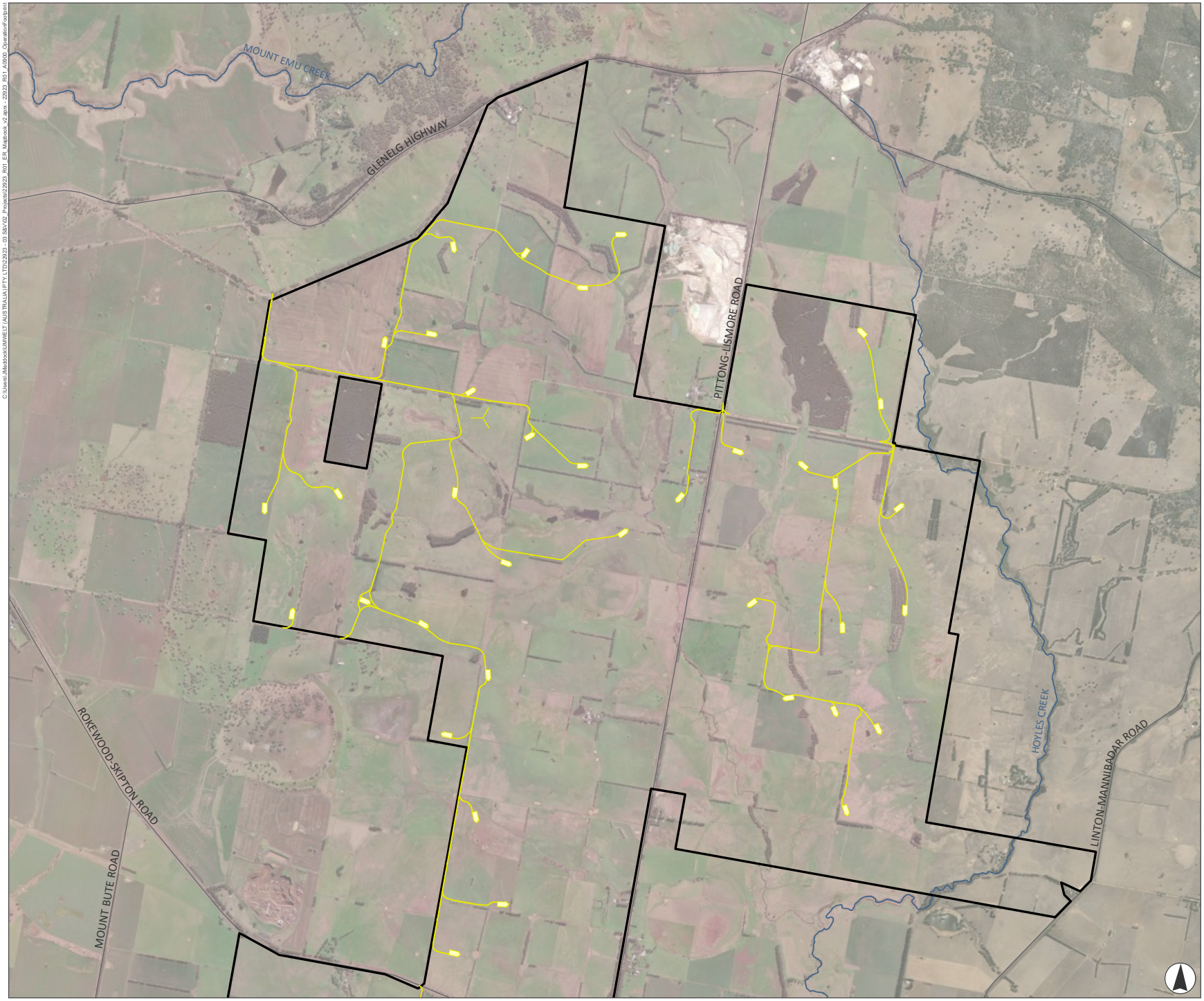

APPENDIX A.9a

Moreton Hill Wind Farm: Operation Footprint

Legend

- Roads
- Major Watercourse
- Project Site
- Operation Footprint

0 1 2

Kilometres

Scale 1:49,000 at A4
GDA2020 MGA Zone 54

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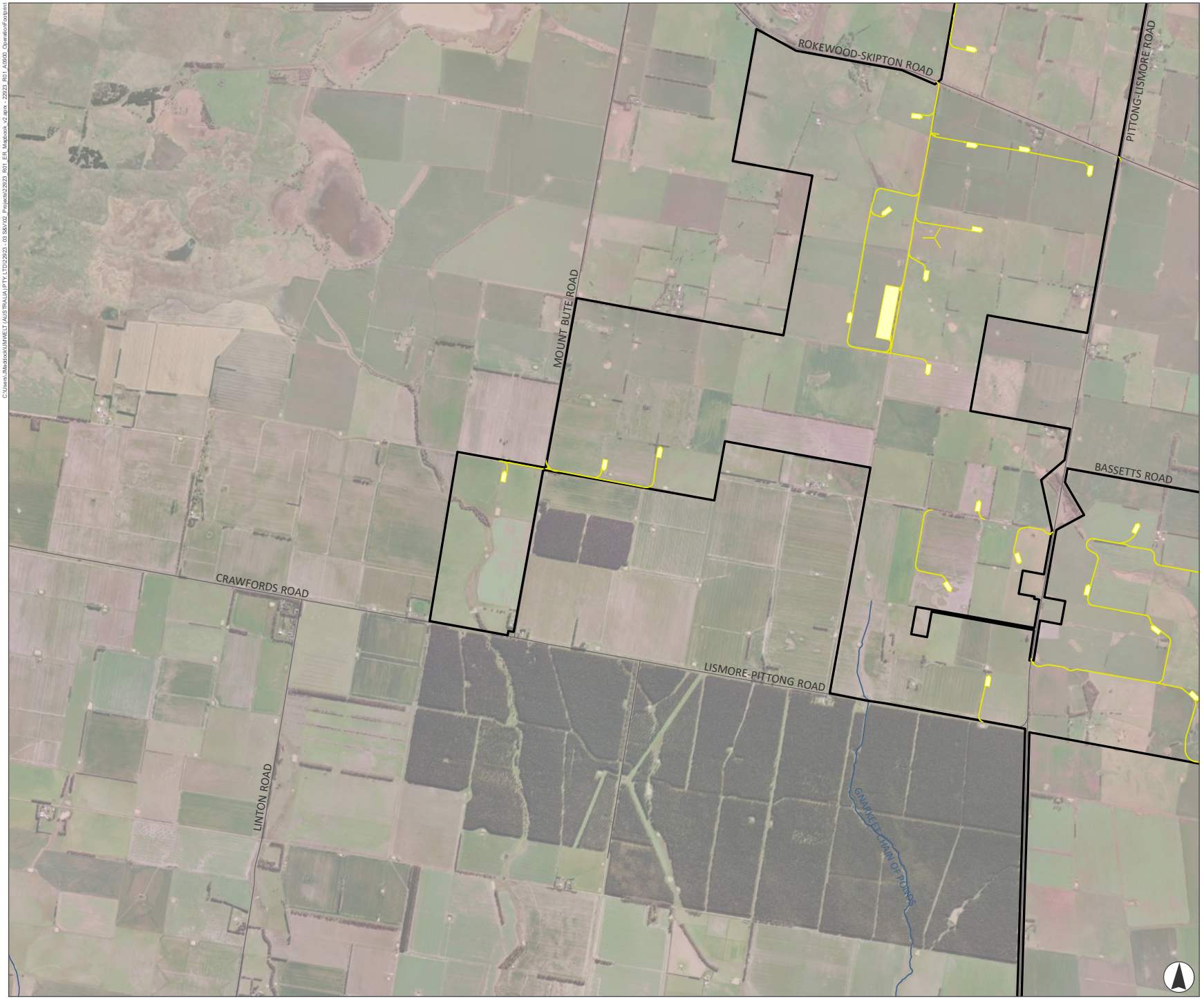

APPENDIX A.9b

Moreton Hill Wind Farm: Operation Footprint

Legend

- Roads
- Major Watercourse
- Project Site
- Operation Footprint

0 1 2

Kilometres

Scale 1:49,000 at A4
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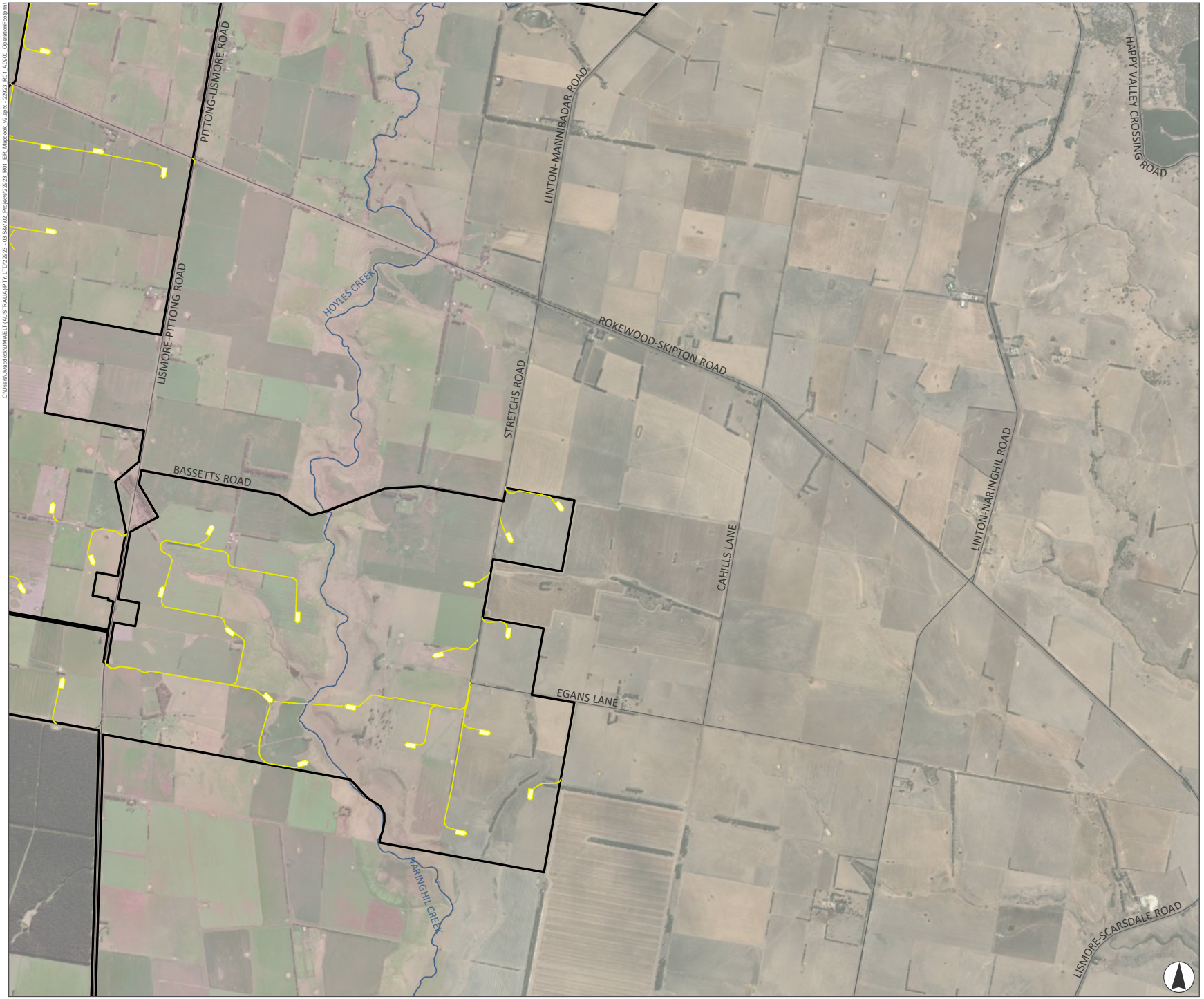

APPENDIX A.9c

Moreton Hill Wind Farm: Operation Footprint

Legend

- Roads
- Major Watercourse
- Project Site
- Operation Footprint

0 1 2

Kilometres

Scale 1:49,000 at A4
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APPENDIX A.9d

Moreton Hill Wind Farm: Operation Footprint

Legend

- Roads
- Major Watercourse
- Project Site

0 1 2

Kilometres

Scale 1:49,000 at A4
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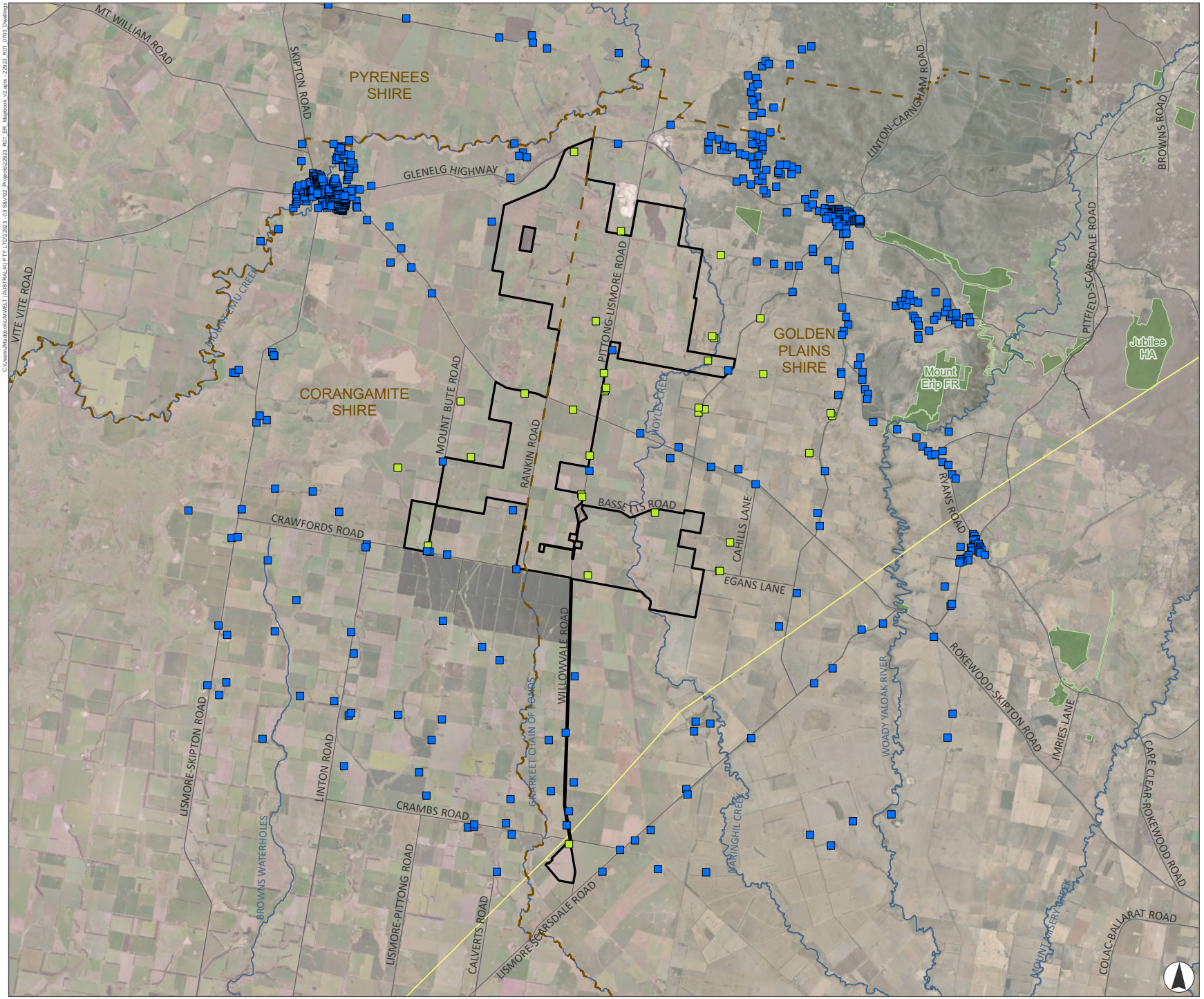

APPENDIX A.10

Moreton Hill Wind Farm: Involved and Non-involved Dwellings

Legend

- Project Site
- Non-involved Dwelling
- Involved Dwelling
- Local Government Area
- Existing 220kV Transmission Line
- Parks and Reserves
- Roads
- Major Watercourse
- Railway

0 2 4

Kilometres

Scale 1:175,000 at A4
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Appendix B

Social and Economic Impact Assessment

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Appendix C

Ecological Assessment

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Appendix D

Brolga Level 1, 2 and 3 Assessment

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Appendix E

Draft Bat and Avifauna Management Plan

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Appendix F

Squadron Energy's Environmental Policy

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