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Normanville Energy Park



EPBC Act Assessment Documentation

Normanville Energy Park

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Acknowledgement of Country

Ramboll acknowledges the Traditional Custodians throughout Australia and recognises those of the land on which we work, the Wurundjeri Woi-wurrung and Bunurong Boon Wurrung peoples of the Kulin Nation, and the land on which the Project is proposed, the Barapa Barapa, Wemba Wemba and Wiran peoples, and honour their continued connection to lands, waters, and skies. We pay our respects to Elders past, present and emerging. We reflect on the deep knowledge First Nations peoples have held for millennia in sustainably managing and respecting Country and are committed to listening, learning, and working towards a future that honours this connection.

Executive summary

Background

The Commonwealth determined that the Normanville Energy Park (the Project) is a 'controlled action' requiring assessment and approval under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) due to likely significant impacts on matters of national environmental significance (MNES). The assessment required to inform the Commonwealth approval will be via an accredited state assessment process under the Bilateral (assessment) Agreement between the Commonwealth and the State of Victoria, i.e. the accredited planning permit application process (item 2.1(f)) (**Appendix 1**) set out in Schedule 1 to the Bilateral Agreement. Accredited state assessment processes help remove duplication and enable alignment of approval conditions and mitigation requirements under the relevant state and Commonwealth law.

The Project was required to prepare 'assessment documentation' to sufficiently describe the likely impacts on relevant MNES protected under the EPBC Act, as well as describe any feasible alternatives, mitigation measures and offset package to address relevant significant residual impacts on any MNES. The generic scope of 'assessment documentation' sets out the specific species of relevance for assessment of the project's potential impacts on MNES.

The 'assessment documentation' has been prepared by Ramboll Australia on behalf of Normanville Energy Park Pty Ltd, trustee for the Normanville Energy Park Unit Trust (the Proponent) in response to the *Notification of referral decision and designated proponent – controlled action* (DCCEEW, 2025) which identifies the requirement for the Normanville Energy Park to be assessed and approved under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Project description

The Normanville Energy Park is a proposed 17 wind turbine generator (WTG) wind farm located on Kerang-Quambatook Road in the Gannawarra Local Government Area. The proposed Project includes the following key components, which have the potential to impact environmental values:

- Wind Energy Facility: wind turbines, foundations and cables
- Utility Installation: transmission line and collector station
- Ancillary Infrastructure: roads, drainage, laydowns and offices
- Transport Route works: road widening and vegetation removal.

Basis of assessment

The scope for assessment, detailed in **Appendix 1**, outlines the Matters of National Environmental Significance (MNES) to be considered as a part of the Assessment Documentation. The relevant MNES are detailed in **Table 0-1**.

Table 0-1 Information required by the Assessment Scope and where it's addressed

| MNES | Information required by Assessment Scope | Where addressed |
|--|--|---|
| Ramsar wetlands | Assess potential indirect impacts to the Kerang Wetlands Ramsar site including collision for listed migratory and waterbird species and potential for hydrological alteration and pollution to impact the ecological character of the Ramsar site. | Section 6.4, and Appendix 2 |
| | Outline proposed measures to avoid and mitigate potential impacts to the ecological character of the Ramsar site. | Section 7 |
| Key listed threatened species and communities - to be examined | Assess the potential for impacts (including turbine collision, habitat removal and fragmentation) to the following species / communities: <ul style="list-style-type: none"> • Blue-winged Parrot (<i>Neophema chrysostoma</i>) (vulnerable) • South-eastern Hooded Robin (<i>Melanodryas cucullata cucullata</i>) (endangered) • Brown Treecreeper (<i>Climacteris picumnus victoriae</i>) (vulnerable) • Corben's Long-eared Bat (<i>Nyctophilus corbeni</i>) (vulnerable) | Sections 6.6.1, 6.6.2 and 6.6.3, and Appendix 2 |
| | Outline avoidance, mitigation and monitoring commitments to avoid and minimise potential impacts to these species. | Section 7 |
| Other listed threatened species and communities - to be considered | Further information (beyond the EPBC referral documentation) is needed to understand whether or not there are any relevant habitat values present and whether the construction and operation of the Project poses any potentially significant impact to the following species: <ul style="list-style-type: none"> • Southern Whiteface (<i>Aphelocephala leucopsis</i>) - Vulnerable • Australasian Bittern (<i>Botaurus poiciloptilus</i>) - Endangered • Sharp-tailed Sandpiper (<i>Calidris acuminata</i>) - Vulnerable • Curlew Sandpiper (<i>Calidris ferruginea</i>) - Critically Endangered • Grey Falcon (<i>Falco hypoleucos</i>) - Vulnerable • Painted Honeyeater (<i>Grantiella picta</i>) - Vulnerable • Black-tailed Godwit (<i>Limosa limosa</i>) - Endangered • Major Mitchell's Cockatoo - eastern (<i>Lophochroa leadbeateri leadbeateri</i>) - Endangered • South-eastern Hooded Robin (<i>Melanodryas cucullata cucullata</i>) - Endangered • Plains-wanderer (<i>Pedionomus torquatus</i>) - Critically Endangered • Regent Parrot - eastern (<i>Polytelis anthopeplus monarchoides</i>) - Vulnerable • Australian Painted Snipe (<i>Rostratula australis</i>) - Endangered • Diamond Firetail (<i>Stagonopleura guttata</i>) - Vulnerable • Common Greenshank (<i>Tringa nebularia</i>) - Endangered | Sections 6.6 and 6.7, and Appendix 2 |
| | <ul style="list-style-type: none"> • Plains Mallee Box Woodlands of the Murray Darling Depression, Riverina, and Naracoorte Coastal Plain Bioregions - Critically Endangered | Section 6.5 and Appendix 2 |

| MNES | Information required by Assessment Scope | Where addressed |
|--|--|---|
| | <ul style="list-style-type: none"> Buloke Woodlands of the Riverina and Murray-Darling Depression Bioregions - Endangered Natural Grasslands of the Murray Valley Plains - Critically Endangered Mallee Bird Community of the Murray Darling Depression Bioregion - Endangered | |
| <p>Listed migratory species – to be examined, particularly in relation to potential collision with turbines</p> | <ul style="list-style-type: none"> Curlew Sandpiper (<i>Calidris ferruginea</i>) – Critically Endangered Sharp-tailed Sandpiper (<i>Calidris acuminata</i>) – Vulnerable Black-tailed Godwit (<i>Limosa limosa</i>) – Endangered Common Greenshank (<i>Tringa nebularia</i>) – Endangered Common Sandpiper (<i>Actitis hypoleucos</i>) Pectoral Sandpiper (<i>Calidris melanotos</i>) Ruff (<i>Calidris pugnax</i>) Red-necked Stint (<i>Calidris ruficollis</i>) Double-banded Plover (<i>Charadrius bicinctus</i>) Little Curlew (<i>Numenius minutus</i>) Marsh Sandpiper (<i>Tringa stagnatilis</i>) Fork-tailed Swift (<i>Apus pacificus</i>) | <p>Section 6.7 and Appendix 2</p> |

Assessment of alternatives and avoid and minimisation through design

Since 2021, the Proponent has been meticulously refining the layout for the proposed Normanville Energy Park Project through 15 design iterations, collaborating with community members and technical experts to minimise environmental, community, and public infrastructure impacts. The design process prioritised the reduction of biodiversity impacts, particularly given the presence of native vegetation primarily around fence lines and road reserves in a largely degraded Project Site. The Project considered alternative scenario considerations, notably the 'do nothing' scenario versus the development of 17 Wind Turbine Generators (WTGs), which would provide significant benefits such as powering over 90,000 homes, generating income for local farmers, saving millions of tonnes of CO2 annually, and contributing to Australia's 2050 net zero targets.

To ensure the Project's viability while balancing environmental, social, and landholder values, key factors influencing site selection included optimal wind resource availability, minimal environmental disruption, strategic proximity to existing infrastructure, community support, and compatibility with current land use practices. The implementation of horizontal directional drilling (HDD) for electrical reticulation and underground transmission lines further reduced ecological impacts by avoiding areas with significant biodiversity, demonstrated through substantial reductions in habitat impacts across the wind farm site such as:

- Avoiding impacts to EPBC listed flora and communities
- Avoiding impacts to Latham's Snipe and White Throated Needletail habitat
- Avoiding impacts to Natural Temperate Grassland of the Victorian Volcanic Plain
- Minimising Plains Mallee Box Woodlands removal by 92%
- Minimising native vegetation removal by 96%
- Minimising impact to Blue-winged Parrot and Diamond Firetail foraging habitat by 96%

- Minimising impact to Fork-tailed Swift, Brown Tree-creeper, Southern Whiteface, South-eastern Hooded Robin and Corben's Long-eared Bat foraging habitat by 96%

Additionally, the Project features increased lower tip height, which significantly diminishes the risk of blade strikes to wildlife, exemplifying the Proponent's commitment to environmental stewardship and community well-being.

Impacts and mitigation

The Project identified several potential impact pathways for biodiversity values during its various phases—construction, operation, and decommissioning. Construction impacts include direct vegetation and habitat removal, injury or displacement of fauna, temporary disturbances from noise and dust, and habitat degradation. Operational impacts primarily involve bird and bat collisions with wind turbine rotors and overhead transmission lines, as well as rare physical disturbances to vegetation for infrastructure maintenance. Decommissioning impacts are expected to be minimal, utilising land which has been subject to disturbance through the construction stage.

The largest gains for avoidance and minimisation of impacts to MNES have materialised through the design process. Siting the Project in locations that largely avoid impacts to MNES has resulted in low residual impacts to Ramsar wetlands, Threatened Species and Communities and Migratory Species. The Project will only impact 0.307 hectares of MNES communities across the wind farm site and transport route. Efforts to prevent turbine strikes have led to the adoption of the key design parameter of increasing the lower tip height of turbine blades to 50 meters above ground level. This height adjustment significantly reduces the risk of collisions for various bird and bat species, particularly those threatened like the Brown Treecreeper, Hooded Robin, Southern Whiteface, and Diamond Firetail that typically stay below canopy height and are not susceptible to turbine strikes. Further refinements in the Project's design aimed to prevent habitat loss and fragmentation, ensuring native vegetation preservation and mitigating adverse impacts on biodiversity values.

To ensure construction, operation and decommissioning of the Project capitalises on the avoid and minimise measures built into the design, the Project will implement best practice construction environmental management measures outlined in the comprehensive Construction Environmental Management Plan (CEMP). These measures include establishing vegetation protection zones, briefings for construction personnel, hygiene controls to prevent the spread of weeds and pathogens, and dust and fire management. Additionally, specific mitigation strategies such as relocating removed trees within the site for fauna habitat, maintaining existing tracks for operational access, and implementing a Bird and Bat Adaptive Management Plan (BBAMP) to monitor and mitigate bird and bat strikes will be employed. Soil and water management measures also play a crucial role, ensuring alterations to the site's hydrology are avoided, erosion and sediment control is maintained, and spill contingencies are effectively managed to prevent pollution and protect native vegetation and water quality.

Significant impact assessment

Of the relevant matters defined in the scope for assessment, no significant impacts to MNES are expected. The small scale of the Project, combined with a Project design that has sought to avoid and minimise impacts from the outset has resulted in only minor impacts to MNES. Assessment

against the significant impact guidelines notes these are unlikely to be significant, refer **Appendix 2**.

Cumulative impacts

As per a review of the Renewable Energy Projects Victoria map (Department of Transport and Planning, n.d.), there are no approved or constructed wind energy facilities within 15 kilometres of the Wind Farm Site. As a cumulative impact assessment requires consideration of third party (or proponent) activities that are already approved, constructed, or are otherwise reasonably likely to proceed, this Project does not require additional consideration of cumulative impact.

Future projects would require consideration of cumulative impact in relation to removal of native vegetation, impacts associated with barrier effects and collision of avifauna with WTGs. It is considered future cumulative impacts on fauna as a result of vegetation loss are anticipated to be negligible as native vegetation in the region is largely restricted to roadsides. Any cumulative operational impacts are considered to be temporary and localised, due to the low abundance of threatened avifauna detected in the region, and therefore the relatively low chance of collisions.

Social and economic impacts

Normanville, a small locality within the Gannawarra Shire of Victoria, has a population of 34 and a median age of 24, indicating a young community. The locality exhibits high educational attainment and a strong socio-economic profile, contrasting with the broader Shire's lower levels of socio-economic advantage. Employment in Normanville is dominated by agriculture, forestry, and fishing, while Gannawarra's employment sectors are more diverse, particularly in education and training.

The Normanville Energy Park is poised to significantly boost the local economy, creating jobs during construction and operation, and supporting local farmers and community initiatives. Expected to inject at least \$230,000 annually into the community through various benefit-sharing programs, the Project will drive social growth and economic development. However, potential negative impacts include increased competition among farmers and the distribution of benefits over the Project's lifespan. Ongoing consultations with stakeholders, including traditional owner groups, and collaborative community engagement efforts are integral to ensuring the Project's alignment with local priorities and minimising adverse effects.

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Appendices

Appendix 1

Scope for EPBC Assessment Documentation under EPBC Act Bilateral (Assessment) Agreement 2014 – Accredited Planning Permit application process (item 2.1(f))

Appendix 2

Normanville Energy Park - Assessment Documentation – Ecology Scope prepared by Nature Advisory (Nature Advisory, 2025b)

Appendix 3

Normanville Energy Park Pre-construction Biodiversity Assessment prepared by Nature Advisory (Nature Advisory 2025)

Appendix 4

Summary of planning details

Appendix 5

Surface water and groundwater assessment prepared by GHD (GHD, 2024)

Appendix 6

Socio-Economic Assessment

Appendix 7

Bird and Bat Adaptive Management Plan prepared by Nature Advisory (Nature Advisory, 2025a)

Appendix 8

Community and Stakeholder Communication and Consultation Plan (ERM, 2024)

Glossary

| Term | Definition |
|---------------------------------------|--|
| The Project | The proposed Normanville Energy Park |
| Project Area | The entire area in which the Project will be undertaken, including the Project Site and Transport Route |
| Project Site | The area within which the Project will be located and includes the wind farm site boundary, transmission line easement and Koorangie Terminal Station |
| The Proponent | Normanville Energy Park Pty Ltd as trustee for the Normanville Energy Park Unit Trust |
| Transport Route Development Footprint | The footprint for works associated with vegetation removal to account for vehicle swept paths at 24 locations from Portland to Normanville Energy Park |
| Transport Route Study Area | This represents the general area of investigation around each of the 24 locations requiring vegetation removal along the proposed Transport Route from Portland to the Normanville Energy Park |
| Wind Farm Development Footprint | The footprint of the wind farm within the Project Site, comprising wind farm infrastructure, transmission cabling and connections to the Koorangie Terminal Station |
| Wind Farm Site | The boundary of the wind farm |
| Wind Farm Study Area | The area of investigation for the Project, including areas that have now been excluded from the site boundary as the Project. |

Acronyms and abbreviations

| Acronym/abbreviation | Definition |
|----------------------|--|
| CSCCP | Community and Stakeholder Communication and Consultation Plan |
| DCCEEW | Commonwealth Department of Climate Change, Energy, the Environment and Water |
| DTP | Department of Transport and Planning |
| EPBC Act | <i>Environment Protection and Biodiversity Conservation Act 1999</i> |
| FP-SR | First Peoples - State Relations |
| kV | Kilovolts |
| MBC | Malle Bird Community of the Murray Darling Depression Bioregion |
| MNES | Matters of National Environmental Significance |
| MW | Megawatt |
| NEM | National Energy Market |
| NSW | New South Wales |
| P&E Act | <i>Planning and Environment Act 1987</i> |
| PMST | Protected Matters Search Tool |
| TPZ | Tree Protection Zone |
| VBA | Victorian Biodiversity Atlas |
| WA | Western Australia |
| WTG | Wind turbine generators |
| WWE | WestWind Energy |

1. Introduction

Normanville Energy Park (the Project) is a proposed 17 wind turbine generator (WTG) wind farm, located in the Gunnawarra Shire Local Government Area, in northwest Victoria. This EPBC Assessment Documentation report has been prepared by Ramboll Australia (Ramboll) and Nature Advisory on behalf of Normanville Energy Park Pty Ltd, trustee for the Normanville Energy Park Unit Trust (the Proponent) to respond to the requirements of the *Notification of referral decision and designated proponent – controlled action* (the decision) (DCCEEW, 2025). The decision (DCCEEW, 2025) identifies the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) assessment requirements for the Normanville Energy Park (the Project).

1.1 Background

On 2 December 2024 the Project was referred to the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) for assessment determination under the EPBC Act. On 12 March 2025, DCCEEW determined that the Project was a controlled action due to potential impacts to the following Matters of National Environmental Significance (MNES):

- Ramsar wetland (under sections 16 and 17B of the EPBC Act)
- Listed threatened species and communities (under sections 18 and 18A of the EPBC Act)
- Listed migratory species (under sections 20 and 20A of the EPBC Act).

The referral decision stipulated that the Project be assessed and approved under the EPBC Act under the *Bilateral (Assessment) Agreement between the Commonwealth and the State of Victoria* (Bilateral Agreement) via the preparation of Assessment Documentation.

As the Project requires planning approval under Victoria's *Planning and Environment Act 1987*, the Assessment Documentation will be assessed under Schedule 1 of the Bilateral Agreement: *Specified manner of assessment – Item 2.1(d) (Planning and Environment Act 1987 (Vic))*.

1.2 Assessment methodology

This document has been prepared based on the following report:

- EPBC Act Assessment Documentation - Ecology Scope (Nature Advisory, 2025b), provided in **Appendix 2**
- Matters of National Environmental Significance (MNES) prepared by Nature Advisory (Nature Advisory, 2024b), provided in **Appendix 3**
- Normanville Energy Park Planning Permit Application (Umwelt, 2024)
- Normanville Energy Park Referral Application (WestWind Energy, 2024)
- Surface water and groundwater assessment, Normanville Energy Park (GHD, 2024), provided in **Appendix 5**
- Bird and Bat Adaptive Management Plan (Nature Advisory, 2025a), provided in **Appendix 7**.

1.2.1 Ecology scope

Extensive ecological surveys have been conducted for the Project site between November 2022 (spring) and January 2025. Survey information including dates, methodologies and full survey outcomes are available within the Ecological Scope (Nature Advisory, 2025b) provided in **Appendix 2**. The survey effort included:

- 14 vegetation surveys and targeted surveys (for threatened ecological communities and listed threatened flora) conducted across the Wind Farm Site, Transmission Line Route and along the Transport Route (swept paths) between November 2022 and October 2024.
- A fauna overview assessment was conducted in November and December 2022. Sites within the biodiversity study area considered to potentially support habitat or have the potential to support listed fauna species were mapped and visited. Habitats were identified and their

connectivity determined. Techniques to detect fauna species included searches for mammal scats, tracks and signs, turning over ground debris and general searches for reptiles, frogs, mammals and birds.

- Seven bird and bat utilisation surveys (BUS) were conducted over a 24-month BUS effort, between November 2022 and January 2025.

2. Scope of Assessment

This report has been developed in response to the *Generic Scope for Proponent EPBC Assessment Documentation* (Scope for EPBC Assessment Documentation under EPBC Act Bilateral (Assessment) Agreement 2014 - Accredited Planning Permit application process (item 2.1(f)), (Assessment Scope) and its Appendices (Appendix 1 – Normanville Energy Park (EPBC 2024-10070) Relevant MNES). The Assessment Scope has been provided in **Appendix 1**.

The structure and scope of this report has generally been based upon the Assessment Scope. The information requested by the Assessment Scope and where it has been addressed is provide in **Table 2-1**.

Table 2-1: Generic Scope for Proponent EPBC Assessment Documentation and where it is addressed

| Assessment Scope Section | Where addressed |
|---|--|
| 3 Plans, Policies, Guidelines, Instruments of reference | Addressed in Section 5 |
| 4 Description of the Project | Addressed in Section 3 |
| 5 Description of the impacts | <p>The anticipated or potential impacts for each relevant MNES are documented in section 4 of Appendix 2 and summarised in Section 6 of this report.</p> <p>A significant impact assessment of these impacts against the Significant Impact Guidelines 1.1 - Matters of National Environmental Significance for each relevant MNES is included in Section 6 of Appendix 2 and Section 8 of this report.</p> <p>Cumulative impacts have been addressed in Section 9</p> <p>Assessment of likely impacts has been addressed in Section 8</p> |
| 6 Details of proposed avoidance and mitigation measures / alternatives | Addressed in Section 4, Section 6, Section 7 Appendix 2 |
| 7 Residual impacts / offsets | <p>Addressed in Section 7 and Section 8.</p> <p>As detailed within Appendix 1382, no significant impacts on MNES are anticipated from the project and therefore, offsets are not proposed.</p> |
| 8 Social and economic | Addressed in Section 10 |
| 9 Environmental record of the person(s) proposing to take the Project | Addressed in Section 12 |
| 10 Information sources provided in the assessment documentation | Addressed in Section 3 of Appendix 2 |

As detailed within Appendix 1 of the Assessment Scope, this report must include a description of all relevant predicted and foreseeable environmental impacts of the Project on the MNES outlined in **Table 2-2** and assess the significance of impacts, outlining avoidance and minimisation of impacts, mitigation measures, monitoring and adaptive management approaches, where

appropriate. A summary of the relevant MNES and where they have been addressed in this document is provided in **Table 2-2**.

Table 2-2: Information required by the Assessment Scope and where it's addressed

| MNES | Information required by Assessment Scope | Where addressed |
|--|--|--|
| Ramsar wetlands | Assess potential indirect impacts to the Kerang Wetlands Ramsar site including collision for listed migratory and waterbird species and potential for hydrological alteration and pollution to impact the ecological character of the Ramsar site. | Section 6.4, Appendix 2 and Appendix 5 |
| | Outline proposed measures to avoid and mitigate potential impacts to the ecological character of the Ramsar site. | Section 7 |
| Key listed threatened species and communities - to be examined | Assess the potential for impacts (including turbine collision, habitat removal and fragmentation) to the following species: <ul style="list-style-type: none"> • Blue-winged Parrot (<i>Neophema chrysostoma</i>) (vulnerable) • South-eastern Hooded Robin (<i>Melanodryas cucullata cucullata</i>) (endangered) • Brown Treecreeper (<i>Climacteris picumnus victoriae</i>) (vulnerable) • Corben's Long-eared Bat (<i>Nyctophilus corbeni</i>) (vulnerable) | Sections 6.6.1, 6.6.2 and 6.6.3, and Appendix 2 |
| | Outline avoidance, mitigation and monitoring commitments to avoid and minimise potential impacts to these species. | Section 7 |
| Other listed threatened species and communities - to be considered | Further information (beyond the EPBC referral documentation) is needed to understand whether or not there are any relevant habitat values present and whether the construction and operation of the Project poses any potentially significant impact to the following species: <ul style="list-style-type: none"> • Southern Whiteface (<i>Aphelocephala leucopsis</i>) - Vulnerable • Australasian Bittern (<i>Botaurus poiciloptilus</i>) - Endangered • Sharp-tailed Sandpiper (<i>Calidris acuminata</i>) - Vulnerable • Curlew Sandpiper (<i>Calidris ferruginea</i>) - Critically Endangered • Grey Falcon (<i>Falco hypoleucos</i>) - Vulnerable • Painted Honeyeater (<i>Grantiella picta</i>) - Vulnerable • Black-tailed Godwit (<i>Limosa limosa</i>) - Endangered • Major Mitchell's Cockatoo - eastern (<i>Lophochroa leadbeateri leadbeateri</i>) - Endangered • South-eastern Hooded Robin (<i>Melanodryas cucullata cucullata</i>) - Endangered • Plains-wanderer (<i>Pedionomus torquatus</i>) - Critically Endangered • Regent Parrot - eastern (<i>Polytelis anthopeplus monarchoides</i>) - Vulnerable • Australian Painted Snipe (<i>Rostratula australis</i>) - Endangered • Diamond Firetail (<i>Stagonopleura guttata</i>) - Vulnerable • Common Greenshank (<i>Tringa nebularia</i>) - Endangered | Sections 6.6 and 6.7, and Appendix 2 |
| | <ul style="list-style-type: none"> • Plains Mallee Box Woodlands of the Murray Darling Depression, Riverina, and Naracoorte Coastal Plain Bioregions - Critically Endangered • Buloke Woodlands of the Riverina and Murray-Darling Depression Bioregions - Endangered • Natural Grasslands of the Murray Valley Plains - Critically Endangered | Section 6.5 and Appendix 2 |

| MNES | Information required by Assessment Scope | Where addressed |
|--|--|---|
| <p>Listed migratory species – to be examined, particularly in relation to potential collision with turbines</p> | <ul style="list-style-type: none"> • Curlew Sandpiper (<i>Calidris ferruginea</i>) – Critically Endangered • Sharp-tailed Sandpiper (<i>Calidris acuminata</i>) – Vulnerable • Black-tailed Godwit (<i>Limosa limosa</i>) – Endangered • Common Greenshank (<i>Tringa nebularia</i>) – Endangered • Common Sandpiper (<i>Actitis hypoleucos</i>) • Pectoral Sandpiper (<i>Calidris melanotos</i>) • Ruff (<i>Calidris pugnax</i>) • Red-necked Stint (<i>Calidris ruficollis</i>) • Double-banded Plover (<i>Charadrius bicinctus</i>) • Little Curlew (<i>Numenius minutus</i>) • Marsh Sandpiper (<i>Tringa stagnatilis</i>) • Fork-tailed Swift (<i>Apus pacificus</i>) | <p>Section 6.7 and Appendix 2</p> |

3. Project Description

The Project includes the construction and operation of the Normanville Energy Park, a wind farm comprising of up to 17 wind turbine generators (WTGs) and associated National Electricity Market (NEM) connection infrastructure. The Project is located approximately 15 kilometres southwest of Kerang in northwestern Victoria, within the Gannawarra Shire Local Government Area. In addition to Project Site development impacts, the Project will also require the removal of native vegetation at 24 discrete locations to enable the transport of Over-size Over-mass (OSOM) vehicles, carrying wind turbine blades from Portland to the Project Site.

The entire Project is being developed across approximately 1,933 hectares, which includes 12 freehold lots and areas along public roads, refer **Figure 3-1**. The Project Site comprises eight freehold lots held by four landholders, refer **Figure 3-2**. The Project Site is located within agricultural land used for cropping and livestock grazing. The disturbance footprint within the Project Site (inclusive of all construction activities) is approximately 162 hectares and the permanent infrastructure footprint is approximately 32 hectares (1.7 %).

The key components of the Project are summarised as follows and have been further discussed in **Table 3-1**:

- Up to 17 WTGs (up to 8-megawatt (MW) capacity each), with a maximum blade-tip height of 280 metre and minimum ground clearance of 50 metres
- WTG foundations, hardstands and laydown areas
- Approximately 26 kilometres of internal access tracks of 5.5 metre trafficable width (7 metre on corners)
- Internal electrical cabling (underground) connecting WTGs to the internal collector station
- One internal collector station
- Approximately 7.2 kilometres external transmission line (underground), connecting the internal collector station to the third-party Koorangie Terminal Station
- One permanent meteorological mast (anemometer)
- Minor road intersection and site access upgrades
- Temporary construction areas including equipment laydowns, concrete batching plants and site compounds
- Other operational infrastructure, including site offices and amenities.

The Project is anticipated to be operational by 2028 and would operate for approximately 30 years.

The Project would involve typical construction activities including vegetation removal, earthworks and excavation, concrete batching, hauling materials and wind farm components, parts assembly, concrete formwork and associated activities, building of permanent structures, electrical works, testing and commissioning. Disturbance activities and impacts that would be associated with development activities include:

- **Vegetation impact:** the proposed layout has been designed to avoid and minimise impacts on native vegetation, however some removal of native vegetation will be required to make way for the transport of and assembly of wind turbines, access roads, and other infrastructure. This can cause temporary disturbance to flora and fauna due to the noise, vibration and movement of clearance machinery. There may also be longer term impacts to flora and fauna due to the resultant loss of habitat.
- **Earthworks and excavation:** to prepare the site for turbine foundations and access roads, soil excavation and grading will be required. This can lead to potential soil erosion and

mobilisation of contaminants into surface water and/or groundwater which requires management through construction controls.

- **Construction of access tracks:** building new access tracks or upgrading existing ones to transport materials and equipment to the site. This can lead to potential increased weed incursion and soil compaction within agricultural areas which requires management through construction controls.
- **Installation of turbines and infrastructure:** erecting the wind turbines and associated infrastructure, such as substations and transmission lines. The proponent recognises that this can potentially increase weed incursion and cause soil compaction within agricultural areas. To mitigate these risks, we will implement and adhere to stringent construction controls throughout the Project.
- **Operations and maintenance activities:** regular maintenance of the turbines and infrastructure, which may include periodic vegetation management and access track maintenance.

3.1.1 Key components and features

The key components and features of the Project are summarised in **Table 3-1**. Key Project areas are shown in **Figure 3-1**.

Table 3-1: Key Project components and features

| Component | Features |
|---|---|
| Wind Energy Facility | <ul style="list-style-type: none"> • Up to 17 WTG (up to 8 MW each), with a maximum blade-tip height of 280 metres. • Wind turbine rotor diameter between 120 and 175 metres and wind turbine hub height in the order of 110-180 metres above ground level. • Turbine foundations (up to 4 metres deep and approx. 25–30 metres in diameter). • Hardstand and laydown areas for each wind turbine. • Underground electrical cables connecting turbines to each other and the internal collector station. • One permanent and one temporary meteorological mast. |
| Utility Installation (Transmission Line/ Collector Station) | <ul style="list-style-type: none"> • One internal collector station. • 7.2 kilometres external underground 33 kilovolts (kV) transmission line to connect the collector station to Koorangie Terminal Station, providing connection into the NEM. • Augmentation of Koorangie Terminal Station (installation of transformer). |
| Ancillary Infrastructure | <ul style="list-style-type: none"> • Operations and Maintenance (O&M) facilities, as well as other operational infrastructure, including site offices and amenities. • Various temporary construction areas including equipment laydowns, concrete batching plants and site compounds. • Road intersection and site access upgrades. • Approximately 26.25 kilometres of internal access tracks, with 5.5 -7 metres in trafficable width and drainage as required. |
| Transport Routes | Project components would be delivered via two key routes: the primary over-dimensional route (excluding wind blades) and a wind blade delivery route, both via the Port of Portland. The primary OD route would be generally consistent with the route utilised for the Murra Warra Wind Farm between the Port of Portland and the township of Warracknabeal. However, from Warracknabeal township to the Wind Farm Site, the transport routes will differ. |

| Component | Features |
|-----------|---|
| | Additionally, two quarry routes for the delivery of quarry sources and materials are proposed from lake Boga Quarry (56 kilometres from Normanville) and Oakvale Quarry (42 kilometres from Normanville). |

Source: Normanville Energy Park Planning Permit Application (Umwelt, 2024)

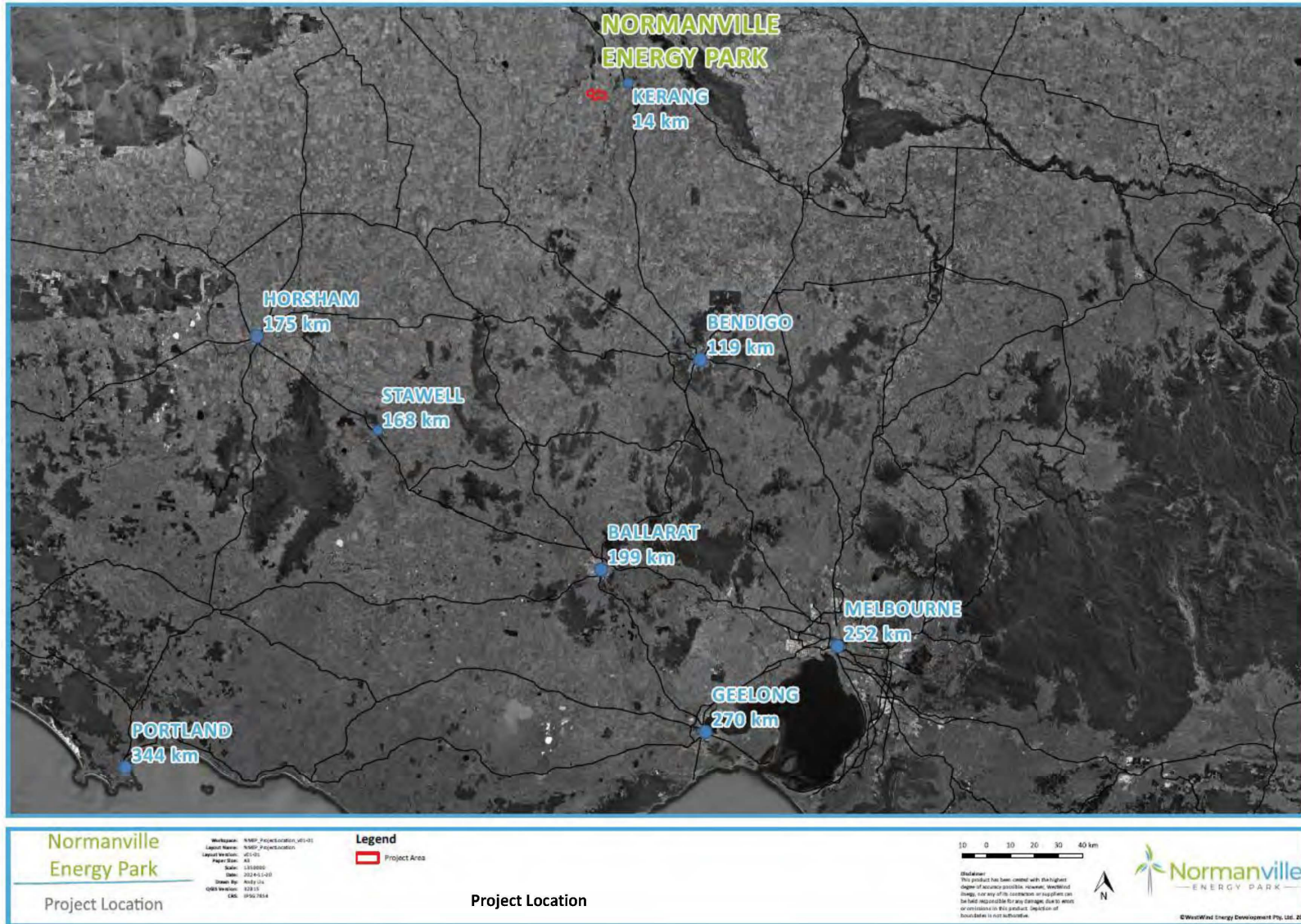


Figure 3-1: Project location

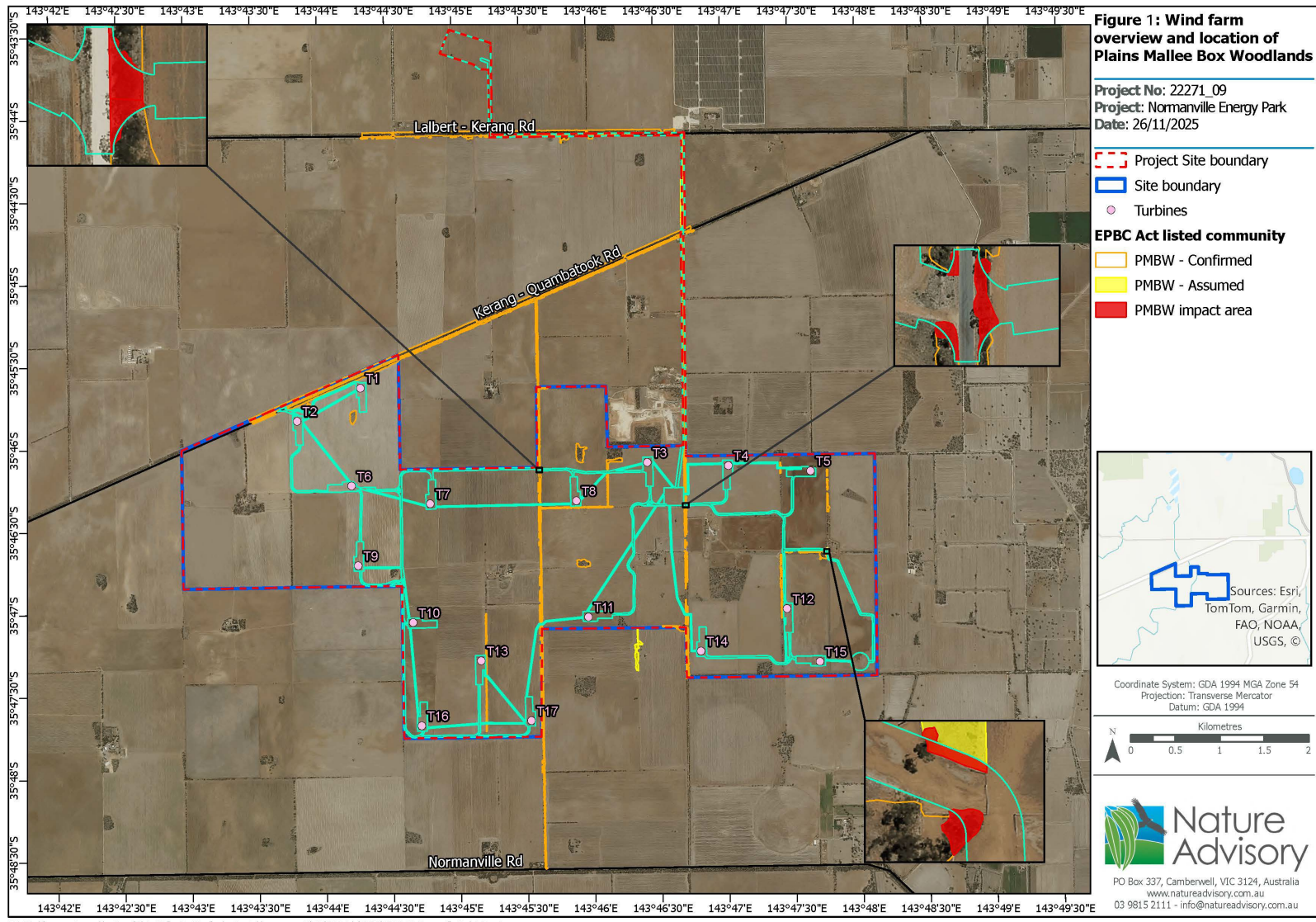


Figure 3-2: Proposed Wind Farm Layout

3.1.2 Wind Turbine Generators

The Project will use WTGs with a minimum sweep height of 50 metres above ground level (refer **Figure 3-3**) to reduce impacts to birds and bats, as further discussed in **Sections 4.2.1** and **7.1.1**.

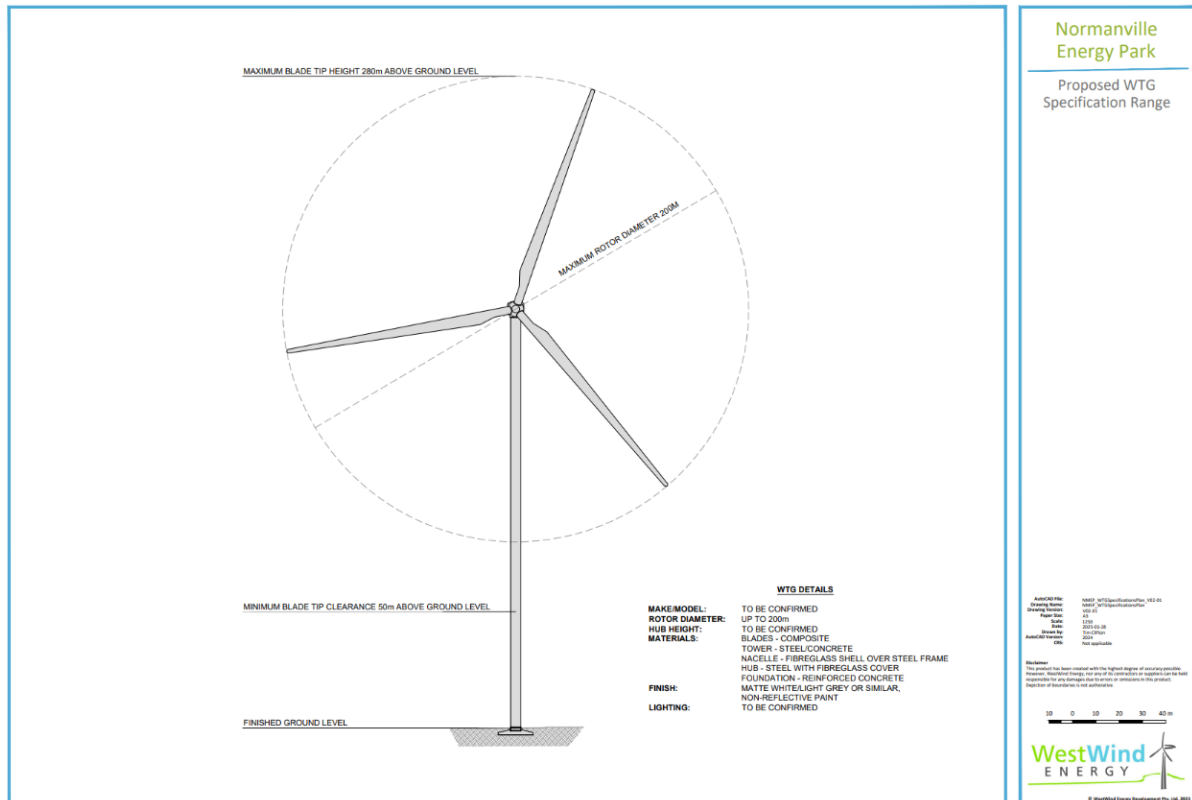


Figure 3-3: Proposed WTG specifications

3.2 Project timing

Project timeframes will be dependent on obtaining all necessary planning and environmental approvals, and associated permits and consents. The Project includes three key phases as detailed in **Table 3-2**.

Table 3-2: Key Project phases

| Phase | Details |
|--------------|---|
| Construction | <p>Construction of the Project will occur over an approximate three-year period (2026 to 2028, subject to permits and other processes) and comprise of three phases:</p> <ul style="list-style-type: none"> • Early works and site preparation • Full site construction, requiring approximately 60 staff on site during peak construction • Commissioning. |
| Operation | <p>Operational activities will include the ongoing monitoring and maintenance of the windfarm over a period of approximately 30 years, estimated to begin in 2028. Throughout the operation of the windfarm:</p> <ul style="list-style-type: none"> • Approximately 2–3 full time employees will be required and would be sourced from the local region, where available. • 20 permanent car parking spaces will be required. |

| Phase | Details |
|-----------------|--|
| | <ul style="list-style-type: none"> Up to 5 daily vehicle movements associated with routine maintenance during operation. |
| Decommissioning | The Project is anticipated to have an estimated lifecycle of 30 years. The windfarm and associated infrastructure will either be decommissioned or upgraded at that time to extend its operational life. |

4. Assessment of alternatives, avoidance and minimisation through design

The consideration of alternatives to the proposed Project are discussed in **Section 4.1**.

Since 2021, the Proponent has been refining the layout for the proposed Project, involving 15 design iterations which are summarised in **Section 4.2**. The Proponent worked closely with both the community and technical experts to avoid and minimise impacts on the environment, community, and public infrastructure. Minimising impacts to biodiversity has been a primary factor influencing the design throughout the design phase.

4.1 Do nothing alternative

During the scoping stage of the Project, both the 'do nothing' scenario and the 'Project scenario' were considered. The 'do nothing' scenario would mean that the 17 WTGs would not be constructed at the proposed Project location, thereby missing out on key benefits and objectives, including:

- Providing enough electricity to power more than 90,000 homes
- Generating additional annual income for decades to farmers hosting Project infrastructure
- Estimated emissions savings of millions of tonnes of CO₂ per year
- Contribution towards Australia's 2050 net zero targets, as legislated in the *Climate Change Act 2022*.

The 'do nothing' scenario is not the preferred option for the Project.

In determining the feasibility of the Project, the development team must strike a balance between capturing the wind resource, while limiting impact with environmental, social, and landholder values. The practice of relocating the Project to avoid a particular value does not necessarily result in net positive impacts. If for instance the wind resource in an alternative location has a lower yield or needs additional transmission to connect to the NEM. During the Projects prospecting stages, the decision to progress the assessment of the Project's viability was influenced by several key factors:

- **Wind Resource Availability:** The proposed site features optimal wind conditions necessary for efficient energy production.
- **Environmental Impact:** The chosen site allows for minimising environmental disruption. Other potential sites posed greater risks to sensitive ecosystems and wildlife habitats.
- **Proximity to Infrastructure:** The proposed location is strategically positioned near existing infrastructure, such as roads and power grids, which reduces the need for extensive new construction and associated environmental impacts.
- **Community Support:** Engagement with local communities and stakeholders has yielded positive feedback and support for the proposed site.
- **Land Use Compatibility:** The proposed site is compatible with existing land use practices, ensuring that agricultural activities can continue with minimal disruption. ting local livelihoods.

By selecting the proposed Project Site, the Proponent is confident in achieving Project goals while maintaining commitment to environmental stewardship and community well-being.

4.2 Wind Farm and Transport Route alternatives, avoidance, and minimisation

This section provides an overview on how impacts from the Project have been avoided and minimised throughout the planning of the Project. The Proponent has demonstrated the avoidance and minimisation of flora and fauna impacts through the refinement of 15 design iterations of the Project layout and adoption of innovative construction methods.

The Project has significantly avoided ecological impacts through layout refinement and the implementation of horizontal directional drilling. The refinements adopted by the Project have been summarised as follows, quantified in **Table 4-1** and **Table 4-2**, and shown in **Figure 4-1**:

- **Initial Design Impact:** Early design impacted native vegetation on road verges to facilitate transport within the wind farm. After extensive field survey and consultation with ecologists, the infrastructure was relocated away from significant native vegetation, to prioritise biodiversity over transport efficiency.
- **Arborist Consultation:** An arborist assessed impacts on native vegetation and tree protection zones, resulting in the relocation of infrastructure away from these zones and the implementation of mitigation measures through construction and operational plans.
- **Electrical Reticulation and Underground Transmissions Line:** The Project identified a material opportunity to further avoid impacts to biodiversity by installing the electrical reticulation and underground transmission line through horizontal directional drilling (HDD) in sensitive areas. This method avoids high levels of disturbance and potential impacts to tree protection zones.

The Project's avoidance and minimisation measures resulted in:

- No removal of large sections of remnant woodland or linear corridors
- Avoidance and minimisation of habitat impacts on Plains Mallee Box Woodlands of the Murray Darling Depression, Riverina and Naracoorte Coastal Plain Bioregions (PMBW) through the relocation of site entry locations
- Retention of PMBW habitat through the co-location of access roads and underground cables, and utilisation of HDD
- Retention of ecological connectivity between large areas of core habitat north and south of the Project Site.

Further information detailing avoidance and minimisation have been provided in the following **Sections 4.2.1** and **4.2.2**.

4.2.1 WTG design

The Project originally proposed a Vestas V162 turbine, which had a lower tip height of 38 metres above ground and an upper tip height of 200 metres. After consultation with experts and review of the Projects Bird and Bat Risk Assessment, the Project decided to commit to developing a different turbine model that had a higher, lower tip height of 50 metres above ground and an upper tip height of 280 metres (refer to **Figure 3-3**). Increasing the lower tip height above ground substantially reduces the risk of blade strikes to many important bird and bat species, representing strong avoidance of potential impacts. The first four seasons of bird utilisation surveys (Spring 2022, Autumn 2023, Winter 2023, and Summary 2023/24) results and analysis are provided within the biodiversity assessment (Nature Advisory, 2024a) completed for the Planning Permit Application. During those four seasons 71 bird species were recorded (Nature Advisory, 2024a). Approximately 86% of all detected birds were estimated to be flying below RSA heights (Nature Advisory, 2024a, p. 5).

4.2.2 Wind Farm Site and Transport Route

The reduction of impacts to biodiversity values from the Wind Farm Site and Transport Route through Project refinement have been summarised in **Table 4-1**.

Within the Project Site, native vegetation is predominantly located around fence lines and road reserves. While the Project Site and its surrounds are largely degraded due to historic clearing, a range of significant remnant biodiversity values are present which influenced the design of the Project layout.

The transport route for the Project involves minor upgrades and augmentation of 16 locations between Portland and the Wind Farm Site. These upgrade works involved minor impacts to several biodiversity values. While there were limited opportunities to avoid and minimise these impacts due to strict transport and safety standards, the Project worked closely with the traffic & transport engineers to realign the route to minimise impacts.

Table 4-1: Minimisation of impacts to biodiversity from Wind Farm Site and Transport route

| EPBC listed Biodiversity Values | Preceding design | Current design | Outcome |
|--|--|---|---------------------------|
| Wind Farm Site | | | |
| Plains Mallee Box Woodlands of the Murray Darling Depression and Naracoorte Coastal Plain Bioregions | 7.4255 hectares removal | 0.068 hectares removal | Minimised impact by 92% |
| Native Vegetation | 8.8664 hectares removal | 0.335 hectares removal | Minimised impact by 96% |
| EPBC Listed Flora Species | No impacts | No impact | Avoided Impact |
| Latham's Snipe | 0.088 hectares aquatic habitat removal | Nil aquatic habitat removal | Avoided impact to habitat |
| White-throated Needletail | No habitat impacts | No habitat impacts | Avoided Impact to habitat |
| Blue-winged Parrot | Foraging habitat removal 8.8664 hectares | Foraging habitat removal 0.335 hectares removal | Minimised impact by 96% |
| Diamond Firetail | | | |
| Fork-tailed Swift | Potential foraging habitat removal 8.8664 hectares | Potential foraging habitat removal 0.335 ha | Minimised impact by 96% |
| Brown Treecreeper (south-eastern) | | | |
| Southern Whiteface | | | |
| South-eastern Hooded Robin | | | |
| Corben's Long-eared Bat | | | |
| Transport Route | | | |
| Plains Mallee Box Woodlands of the Murray | 0.049 ha | 0.046 hectares removal | Minimised impact by 6.12% |

| EPBC listed Biodiversity Values | Preceding design | Current design | Outcome |
|---|--|--|---|
| Darling Depression and Naracoorte Coastal Plain Bioregions | | | |
| Buloke Woodlands of the Riverina and Murray-Darling Depression Bioregions | 0.479 ha | 0.167 hectares removal | Minimised impact by 65.2% |
| Natural Temperate Grassland of the Victorian Volcanic Plain | 0.013 ha | 0 hectares removal | Avoided Impact |
| Natural grasslands of the Murray Valley Plains | 0.076 ha | 0.026 hectares removal | Minimised impact by 65.79% |
| EPBC Listed Flora Species | No impacts | No impacts | Avoided Impact |
| Growling <i>Grass Frog</i> <i>Litoria raniformis</i> | 0.057 hectares ephemeral pond and surrounding grassland habitats removed | No habitat removal Construction phase management (e.g. fauna spotter catcher) | Avoided habitat impacts and managing construction phase impacts |

The reduction of impacts to biodiversity values within the Wind Farm Site through Project refinement are detailed in **Table 4-2**.

Table 4-2: Minimisation of impacts to biodiversity from Wind Farm Project Infrastructure through Project refinement

| Infrastructure | Avoidance & minimisation action | Reduction in impact | Outcome |
|-------------------|---|--|----------------------------|
| Access tracks | <ul style="list-style-type: none"> Relocated access tracks to cleared and partially cleared areas Minimise impacts tree protection zones <ul style="list-style-type: none"> verified by an arborist | Reduced impact to native vegetation by 0.979 ha | Minimised impact by 11.04% |
| Transmission Line | <ul style="list-style-type: none"> Relocated transmission line to the centre of roads and in cropping paddocks Implementation of Horizontal Direction Drilling (HDD) for installation of transmission line Avoidance of tree protection zones <ul style="list-style-type: none"> verified by an arborist | Reduced impact to native vegetation by 7.0956 ha | Minimised impact by 80.03% |
| Reticulation | <ul style="list-style-type: none"> Relocated reticulation to cleared and partially cleared areas | Reduced impact to native vegetation by 0.2944 ha | Minimised impact by 3.32% |

| Infrastructure | Avoidance & minimisation action | Reduction in impact | Outcome |
|-----------------------------|---|--|----------------------------|
| | <ul style="list-style-type: none"> • Implementation of Horizontal Direction Drilling (HDD) for installation of reticulation • Avoidance of tree protection zones <ul style="list-style-type: none"> ○ verified by an arborist | | |
| Turbine & Hardstand | <ul style="list-style-type: none"> • Nil impacts to begin with | n/a | Avoided impacts |
| Collector Station | <ul style="list-style-type: none"> • Moved slightly to avoid impact on tree protection zones <ul style="list-style-type: none"> ○ verified by an arborist | Reduced impact to native vegetation by 0.0666 ha | Minimised impact by 0.75% |
| Meteorological Mast | <ul style="list-style-type: none"> • Nil impacts to begin with | n/a | Avoided impacts |
| Temporary construction area | <ul style="list-style-type: none"> • Moved slightly to avoid impact on tree protection zones <ul style="list-style-type: none"> ○ verified by an arborist | Reduced impact to native vegetation by 0.0028 ha | Minimised impact by 0.032% |

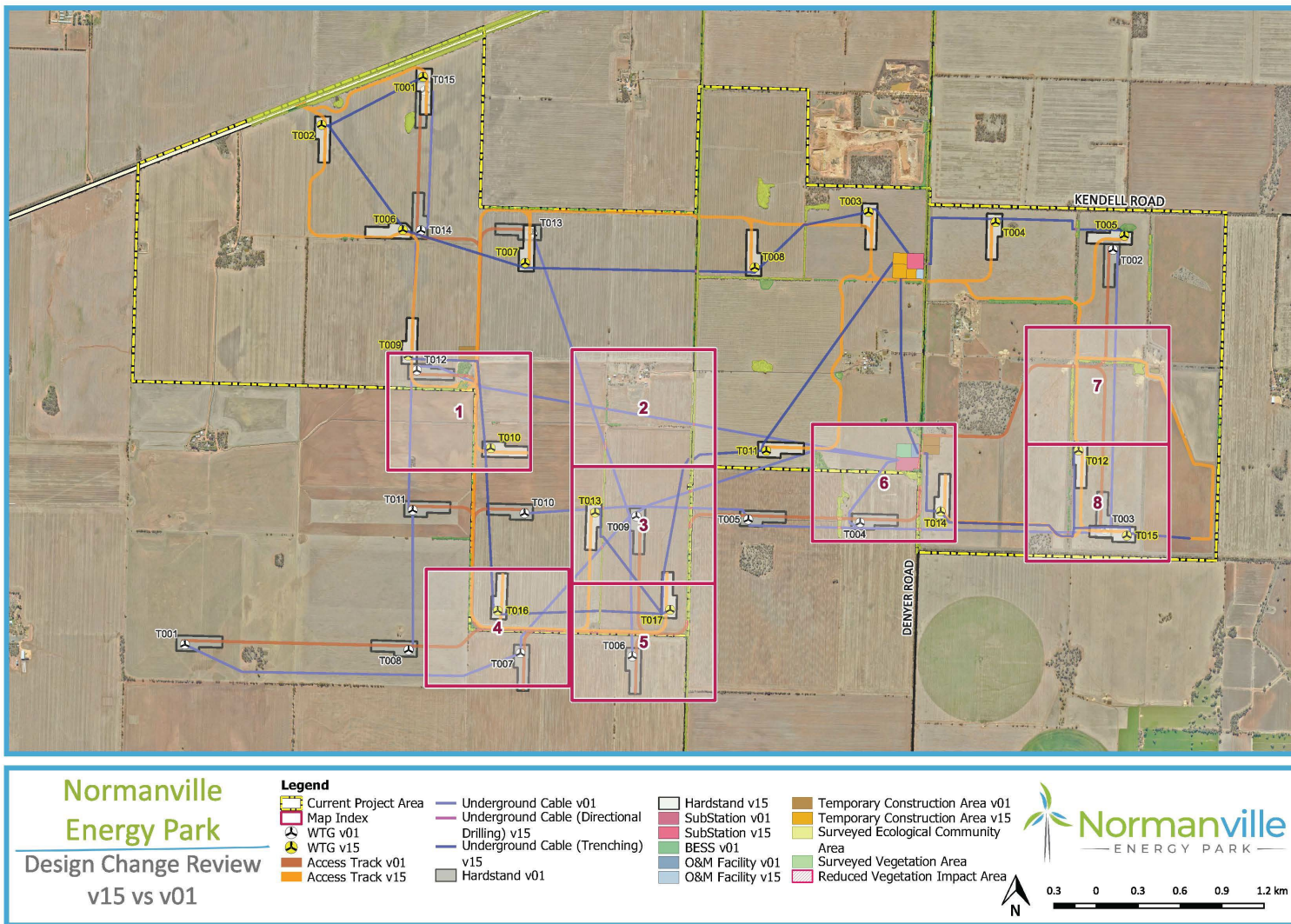


Figure 4-1: Changes to Project design

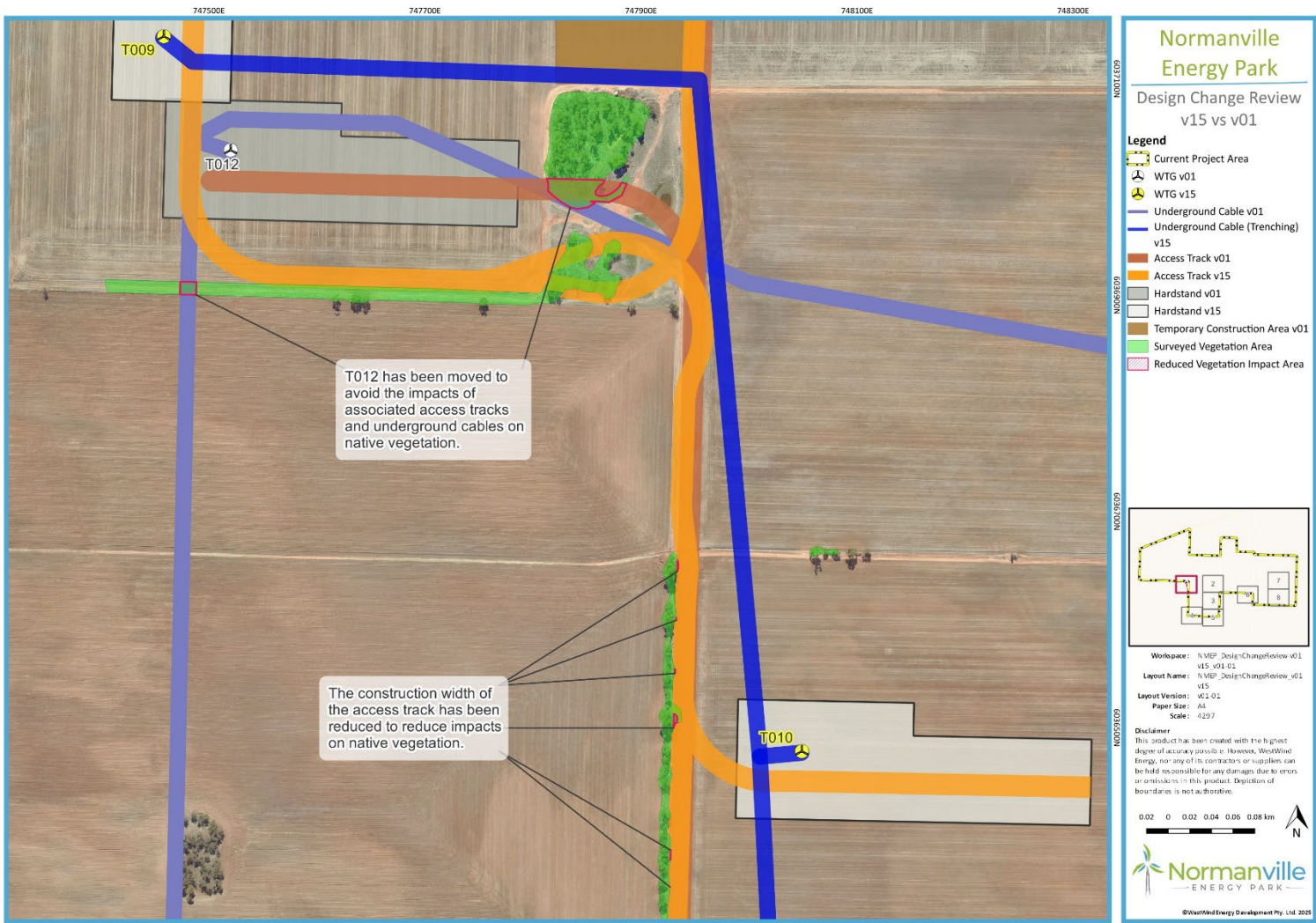


Figure 4-2: Changes to Project design



Figure 4-3: Changes to Project design

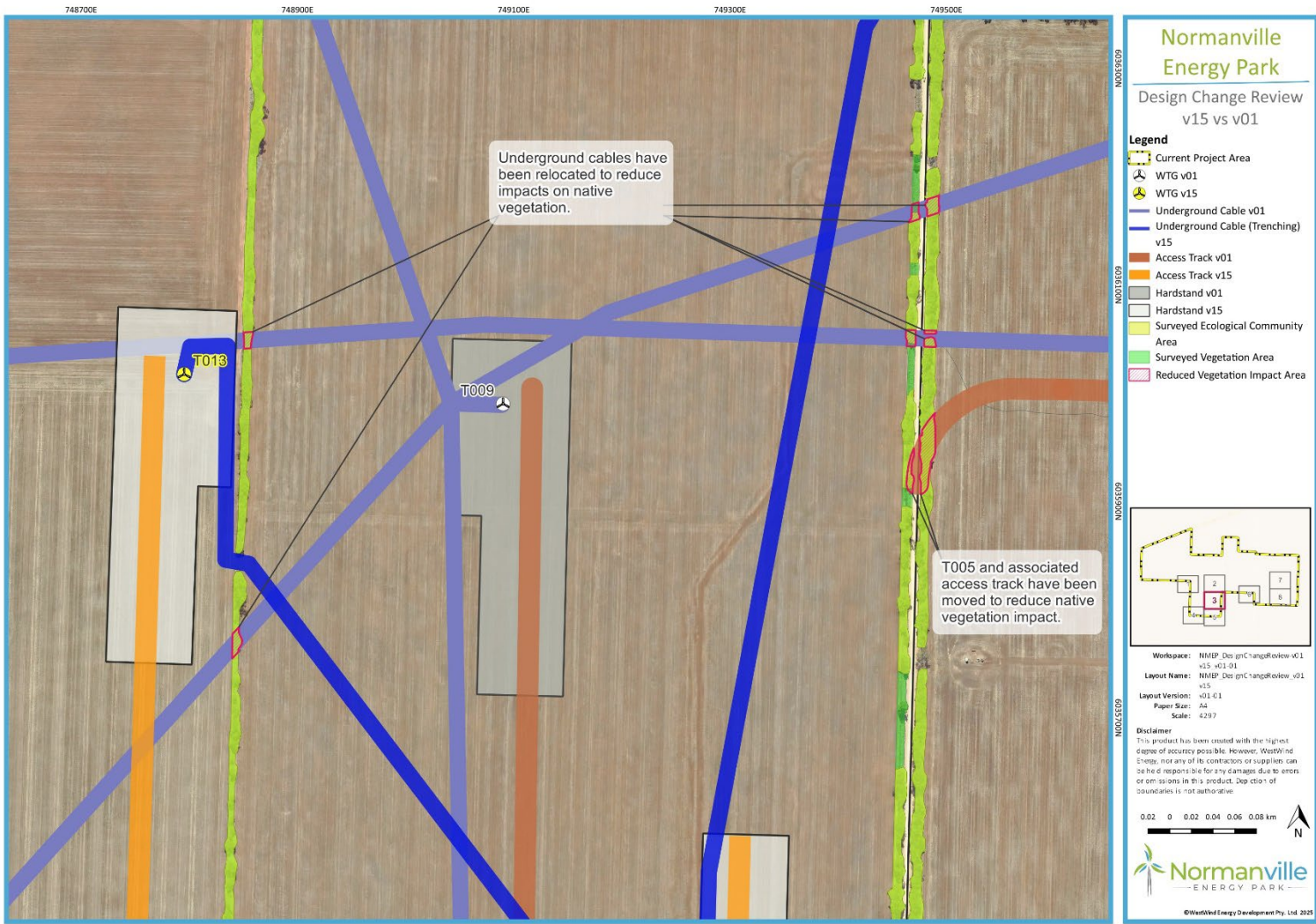


Figure 4-4: Changes to Project design

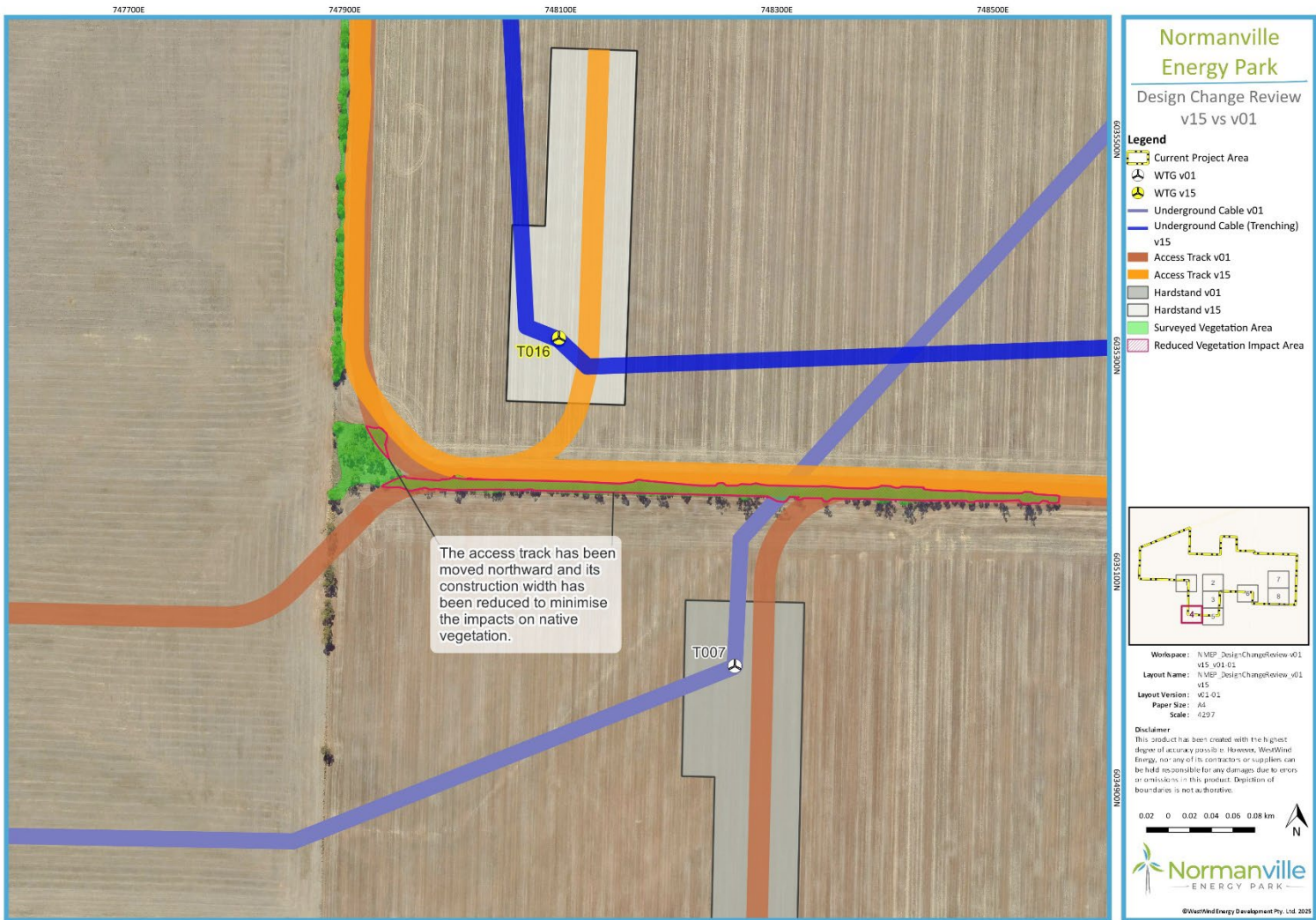


Figure 4-5: Changes to Project design

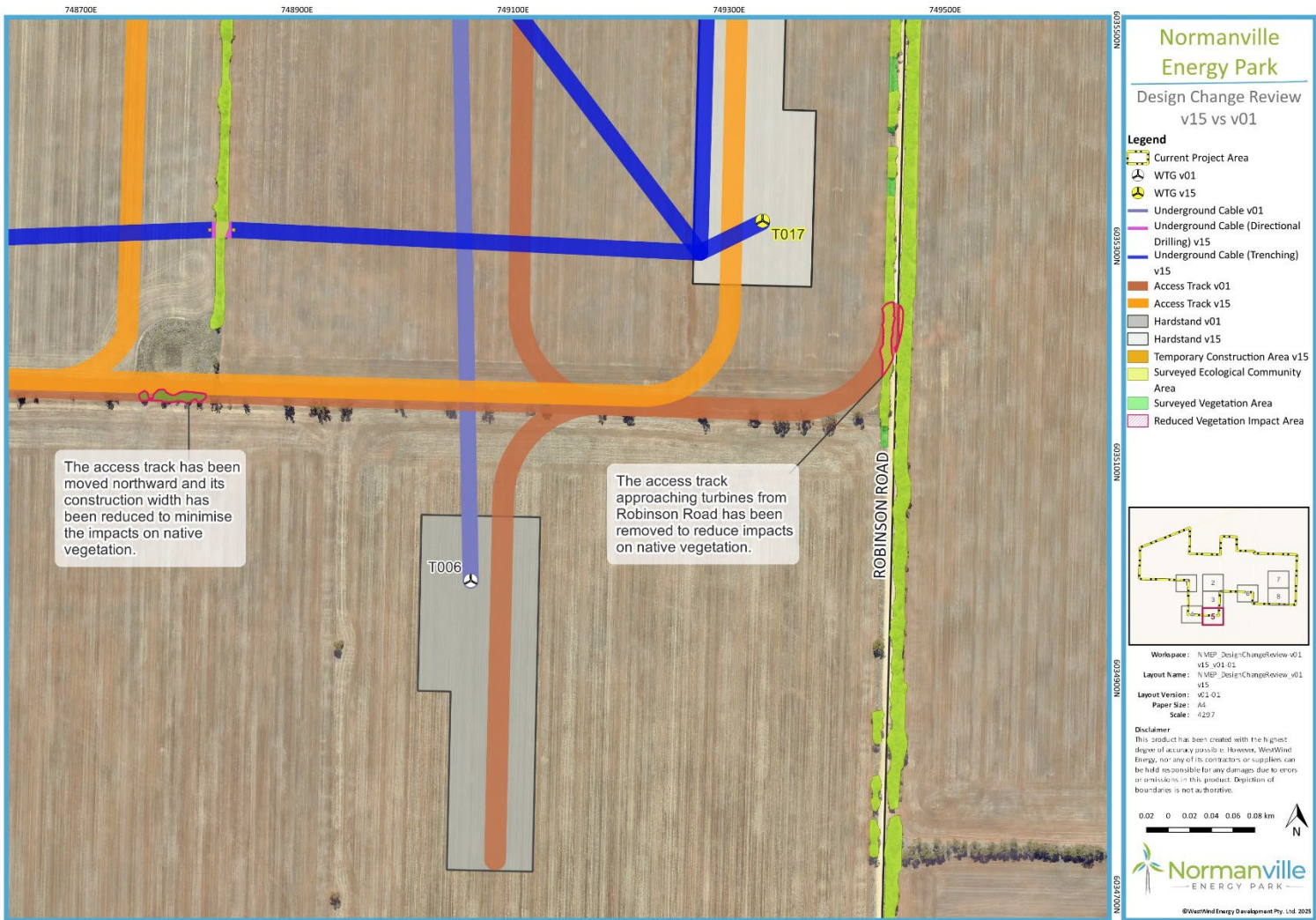


Figure 4-6: Changes to Project design

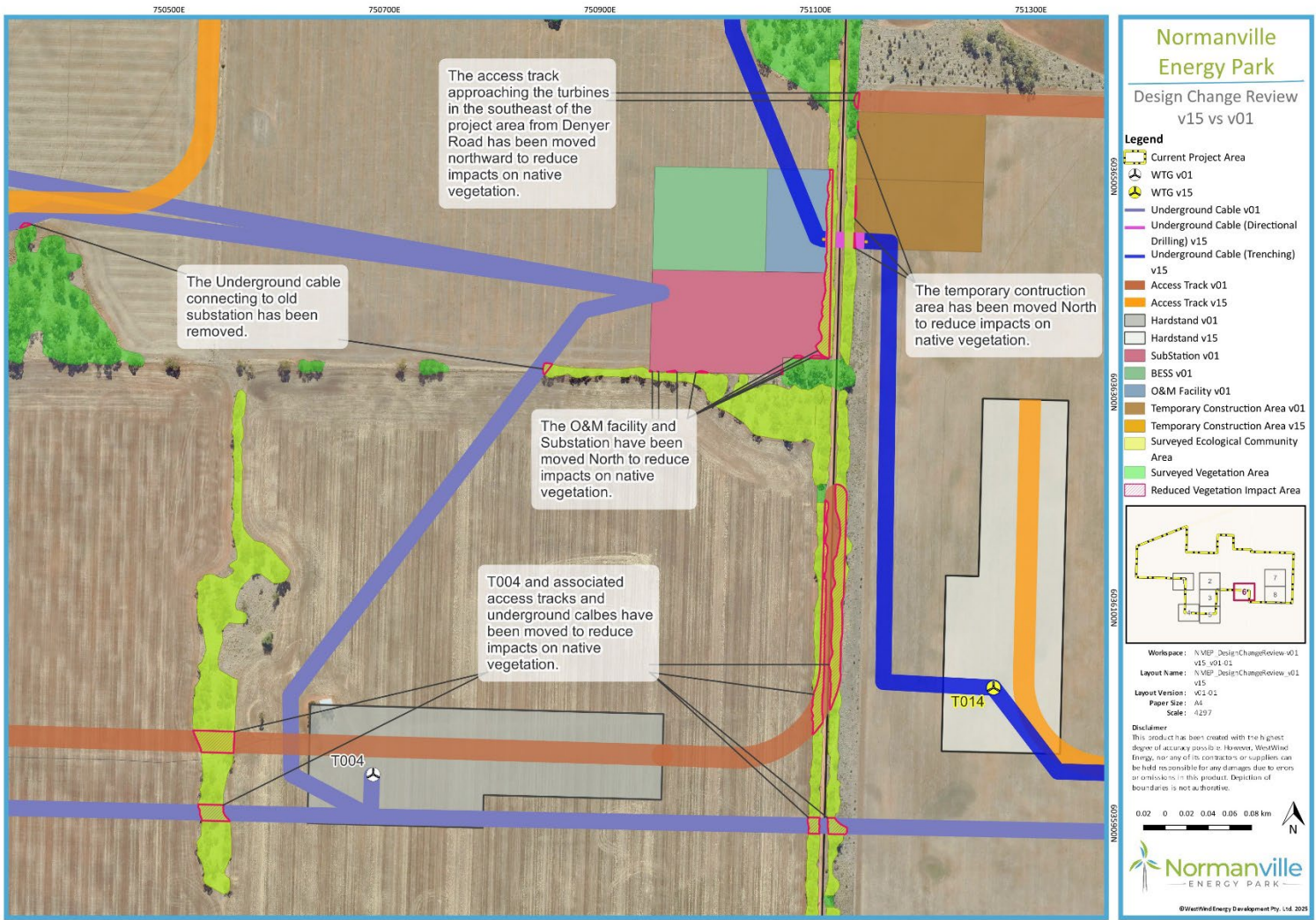


Figure 4-7: Changes to Project design

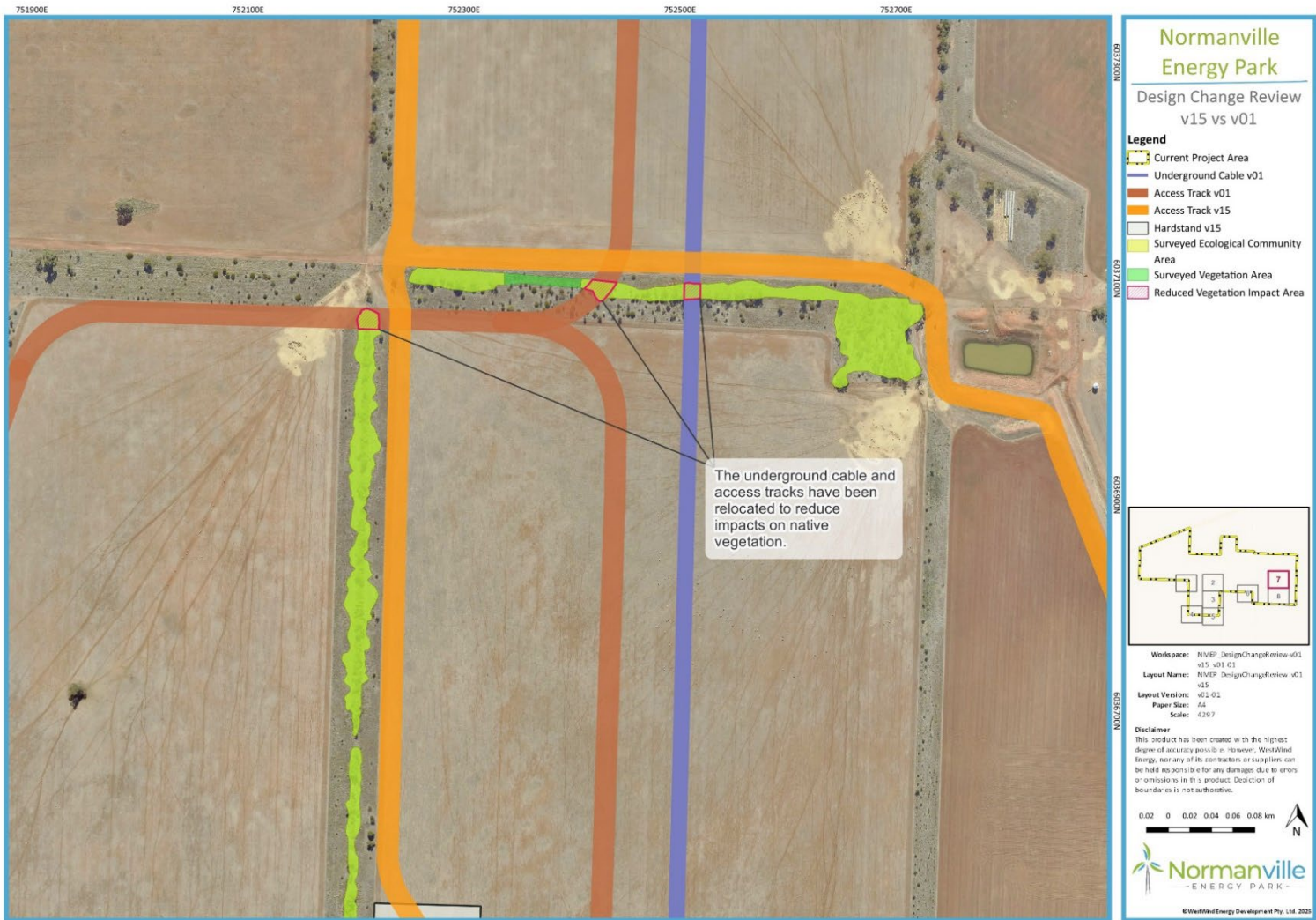


Figure 4-8: Changes to Project design

5. Plans, policies and guidelines

The following recovery plans, conservation advice, wildlife conservation, and action statements have informed the development of the Assessment Documentation:

- National Recovery Plans
 - National Recovery Plan for the Painted Honeyeater *Grantiella picta* (Department of Agriculture, Water and the Environment, 2021b)
 - National Recovery Plan for the Plains-wanderer (Department of the Environment, 2016)
 - National Recovery Plan for the Regent Parrot (eastern subspecies) *Polytelis anthopeplus monarchoides* (Baker-Gabb & Hurley, 2011)
 - National Recovery Plan for the Australasian Bittern (*Botaurus poiciloptilus*) (Department of Climate Change, Energy, the Environment and Water, 2022a)
 - National Recovery Plan for the Australian Painted Snipe (*Rostratula australis*) (Department of Climate Change, Energy, the Environment and Water, 2022b)
 - National Recovery Plan for the Buloke Woodlands of the Riverina and Murray Darling Depression Bioregions (Department of Sustainability and Environment, 2011)
 - Draft national recovery plan for the south-eastern long-eared bat *Nyctophilus corbeni* (Schulz, M. and Lumsden, L., 2010)
- Conservation Advice
 - Conservation Advice for the Plains mallee box woodlands of the Murray Darling Depression, Riverina and Naracoorte Coastal Plain Bioregions (Department of Agriculture, Water and the Environment, 2021a)
 - Approved Conservation Advice for the Buloke Woodlands of the Riverina and Murray-Darling Depression Bioregions (Department of Climate Change, Energy, the Environment and Water, 2023a)
 - Conservation Advice for *Neophema chrysostoma* (Blue-winged Parrot) (Department of Climate Change, Energy, the Environment and Water, 2023d)
 - Conservation Advice for *Climacteris picumnus victoriae* (Brown Treecreeper (south-eastern)) (Department of Climate Change, Energy, the Environment and Water, 2023b)
 - Conservation Advice for the *Aphelocephala leucopsis* (Southern Whiteface) (Department of Climate Change, Energy, the Environment and Water, 2023f)
 - Conservation Advice for the *Melanodryas cucullata cucullata* (hooded robin (south-eastern)) (Department of Climate Change, Energy, the Environment and Water, 2023g)
 - Conservation Advice for *Stagonopleura guttata* (Diamond Firetail) (Department of Climate Change, Energy, the Environment and Water, 2023e)
 - Conservation Advice for *Lophochroa leadbeateri leadbeateri* (eastern Major Mitchell's cockatoo) (Department of Climate Change, Energy, the Environment and Water, 2023c)
 - Conservation Advice for *Gallinago hardwickii* (Latham's snipe) (Department of Climate Change, Energy, the Environment and Water, 2025)
 - Approved Conservation Advice for Natural Grasslands of the Murray Valley Plains ecological community (Department of Sustainability, Environment, Water, Population and Community, 2012)
 - Approved Conservation Advice for *Pedionomus torquatus* (Plains-wanderer) (Threatened Species Scientific Committee, 2014)
 - Conservation Advice *Nyctophilus corbeni* south-eastern long-eared bat (Threatened Species Scientific Committee, 2015)
 - Conservation Advice *Hirundapus caudacutus* White-throated Needletail (Threatened Species Scientific Committee, 2019)
 - Commonwealth Listing Advice on Buloke Woodlands of the Riverina and Murray-Darling Depression Bioregions (Endangered Species Scientific Subcommittee, 2000)

- Conservation Plan
 - Wildlife Conservation Plan for Migratory Shorebirds (Department of the Environment, 2015)
- Action Statement
 - Flora and Fauna Guarantee Action Statement No. 83: Grey Falcon *Falco hypoleucos* (Department of Sustainability and Environment, 2003).
- Policy
 - EPBC Environmental Offsets Policy.

5.1 Information sources

Information sources utilised by the Ecology Scope (Nature Advisory, 2025b) included the following:

- Victorian Biodiversity Atlas (VBA)
- Relevant EVC benchmarks (Department of Sustainability and Environment, 2004)
- DEECA's NatureKit Map (including the Habitat Importance Maps, Wetland Maps) and NVR Map
- The Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) Protected Matters Search Tool.
- The online EPBC Act Protected Matters Search Tool (Department of Climate Change, Energy, the Environment and Water, 2024) was consulted to determine whether nationally listed species or communities potentially occurred in the search region based on habitat modelling.

Further information regarding the methods of assessment have been detailed within Section 3 of the Ecology Scope (Nature Advisory, 2025b), provided in **Appendix 2**.

6. Description of impacts on MNES

This section provides a description of impacts on MNES, as requested by the Assessment Scope, and has been predominantly drawn from the Ecology Scope (Nature Advisory, 2025b) provided in **Appendix 2**.

6.1 Impact pathways

The following sections identify the potential impact pathways throughout the construction, operation and decommissioning of the Project as detailed within Section 2.3 of the Ecology Scope (Nature Advisory, 2025b) provided in **Appendix 2**.

6.1.1 Construction impacts

The identified construction phase impact pathways for biodiversity values are:

- Direct vegetation and habitat removal from vegetation clearance and earthworks activities
- Direct injury, death or displacement of terrestrial fauna from vegetation clearing and earthworks, entrapments in trenches or collision with an increased number of vehicles
- Temporary disturbance to fauna caused by factors such as noise, dust, light and vibration
- Habitat and vegetation degradation from direct and indirect pathways including introduction or spread of invasive species or pathogens, edge effects, fragmentation, barrier effects, surface hydrological changes, deposition of dust or eroded sediments, contamination by accidental spills of hazardous materials, hydrology changes and/or reduced water quality.

6.1.2 Operation impacts

The identified operational phase impact pathways for biodiversity values include:

- Collision with WTG rotors by birds and bats in flight
- Collision by birds and bats with overhead transmission lines
- Physical disturbance to native vegetation and fauna habitats during the operational phase for maintenance, replacement or repair of infrastructure. This is expected to be rare and limited to areas already cleared during construction (e.g. hardstand areas and formed tracks) where native vegetation is unlikely to be present.

6.1.3 Decommissioning impacts

At the end of the Project's operational life, the Proponent would elect to either decommission the Project or repower with new turbines (pending further planning approval and outcomes of additional consultation with neighbouring landowners and the local community).

A decommissioning phase of 12 months is anticipated for the Project, and will include the following activities:

- Removal of all above-ground non-operational infrastructure, including WTGs
- Removal of WTG foundations to a depth of 0.5 m below ground level
- Removal of collector stations, unless required for the ongoing operation of the electricity network
- Removal and rehabilitation of all storage areas, construction areas and access tracks (unless otherwise useful to the ongoing management of the land or as requested by Project landholders)
- Underground cabling would be left in place and terminated at each end
- Site clean-up, waste removal and revegetation of areas disturbed during decommissioning.

All requirements of any planning approval or licence would be complied with during Project decommissioning.

Assuming that the footprint of decommissioning works occurs within the existing development footprint, and with the implementation of mitigation measures as well as the application of a

Decommissioning Environmental Management Plan, no direct or indirect impacts to native vegetation, listed flora or listed communities arising from decommissioning of the Project are anticipated.

6.2 Impacts on MNES

The following sections provide an overview of each MNES item identified within the Assessment Scope and identifies the direct and indirect impacts to each. The information within these sections was obtained from Section 4 of the Ecology Scope (Nature Advisory, 2025b), provided in **Appendix 2**, and the Project's original EPBC Referral. Committed mitigations and residual impact assessments on MNES is detailed in **Sections 7 and 8**.

6.3 Geographical scale of impacts on MNES

For listed ecological communities and the Ramsar wetland, impacts have been considered at local and regional/national scales as part of the assessment against the *EPBC Act Significant Impact Guidelines criteria* (Section 7.2 and 7.3). The Ramsar site and its connected waterways do not overlap with the Project, and the ecological communities occur in small, already fragmented patches or roadside vegetation. The proposed development, including road access and minor clearing, affects only small portions of these communities, which is unlikely to meaningfully increase fragmentation, consistent with available conservation advice (see **Table 8-1** and **Table 8-2**). Therefore, potential direct impacts on these MNES communities and the Ramsar site are considered minimal or negligible beyond the local or broader scales.

For individual fauna species, particularly those that are migratory, widely dispersed, or have unknown local populations, including those that contribute to the Ramsar Site, potential impacts cannot be fully predicted at all scales. The assessment has therefore followed the criteria outlined in the EPBC Guidelines, which applies a hierarchical approach based on the species' conservation status, rather than explicitly defining local, regional, or national scale of impact. Impacts scales will be determined, or approximated if feasible, through ongoing monitoring and investigations under the BBAMP using more accurate mortality estimates rather than predictive approaches. The BBAMP will provide an adaptive framework to manage unpredicted residual impacts, designed to respond to impact triggers and guide investigations in consultation with the relevant authority on a case-by-case basis, using the most up-to-date available information or applying a precautionary approach.

6.4 Ramsar wetlands

6.4.1 Overview

Kerang Wetlands is a declared Ramsar wetland located approximately 1 kilometre north-west from the closest part of the Project Site, the existing Koorangie Terminal Station. The wind farm itself is located approximately 4 kilometres south-west of the Kerang Wetlands, refer **Figure 6-1**.

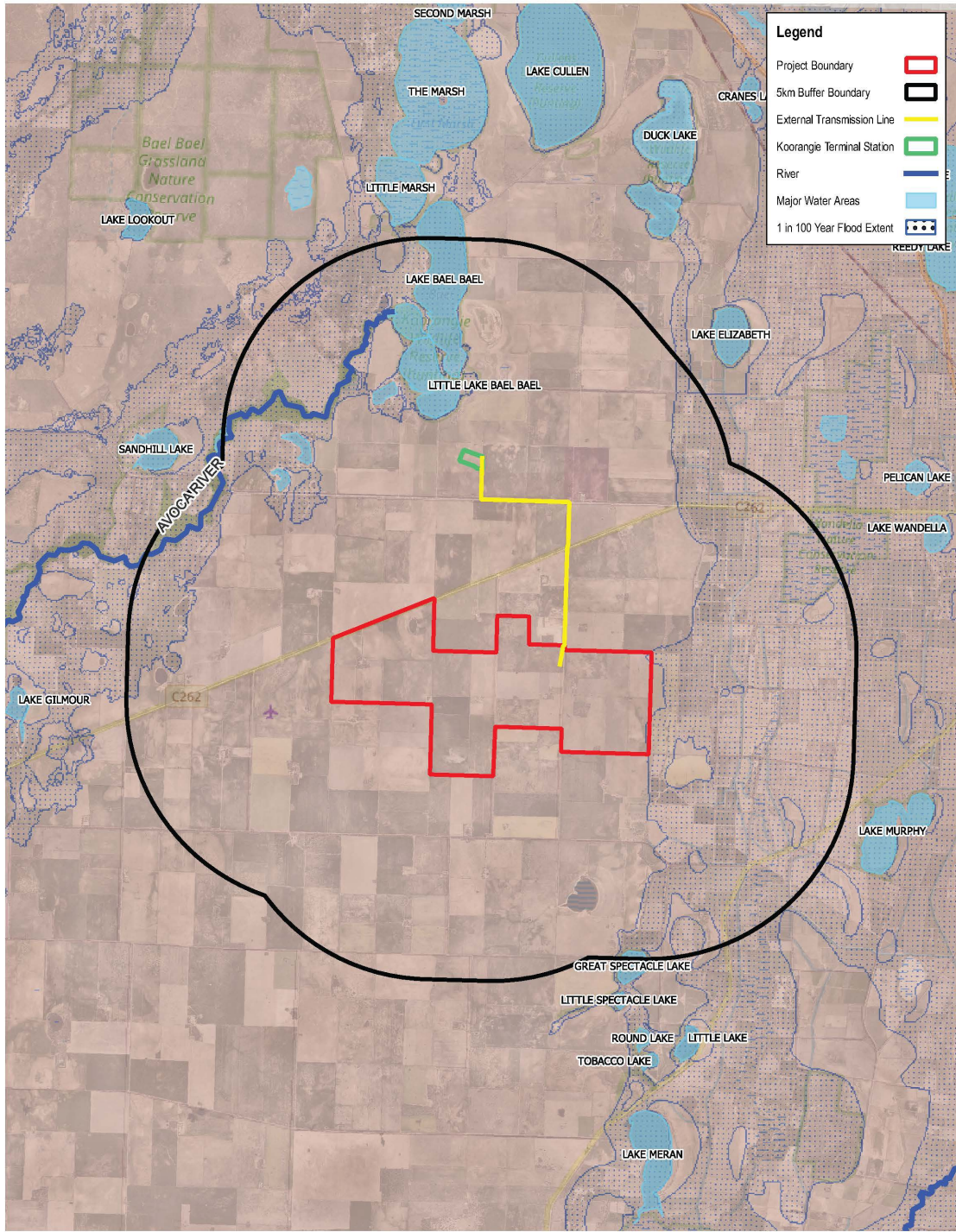
The Kerang Wetlands comprises 23 lakes, marshes, and swamps, varying in size, depth, and salinity, and is located on the lower reaches of the Avoca and Loddon Rivers and Pyramid Creek near Kerang (refer **Figure 6-1**). The Kerang Wetlands cover almost 10,000 hectares and support a diversity of wetland vegetation communities including black box, river red gum, tangled lignum, chenopod shrubland, grassland, sedgeland, aquatic hermland and reed bed habitats (Ramsar Site Information Services, 2019). Thirty-five species of waterbirds listed under international migratory agreements have been recorded within the Kerang Wetlands, including both resident species in Australia (e.g. Eastern Great Egret) and 23 international migratory species. The Kerang Wetlands regularly supports five species of international migratory shorebirds: Common Greenshank,



Curlew Sandpiper, Marsh Sandpiper, Red-necked Stint, and Sharp-tailed Sandpiper (Butcher & Hale, 2016).

The Project component located closest to the Kerang Wetlands, is the transmission connection to the existing Koorangie Terminal Station. This component is located within 1 kilometre of the Kerang Wetlands. The transmission connection is an underground cable and does not present an ongoing risk to the Wetlands or species supported by it. All wetlands are outside the Wind Farm Project Area boundary and Transport route.

No rivers, creeks or DEECA mapped wetlands occur within the Project site. Waterbodies within the Project Site comprise artificial farm dams, often linked by artificial drainage channels (Department of the Environment, 2013). The artificial drainage channels are part of a network of minor drainage channels that deliver water for irrigating crops and for local storage. The capacity and general flow conveyance of the channels is assumed to be small and therefore unlikely to impact downstream receptors, including the Kerang Ramsar wetlands (GHD, 2024).

Flood mapping indicates that flooding associated with the Avoca River and Loddon River floodplains during a 1 in 100 year flood event does not generally extend into the Project Site (GHD, 2024).



| | | | | |
|---|---|---|---|---|
| <p>Paper Size ISO A4</p>  <p>Kilometres</p> <p>Map Projection: Transverse Mercator Horizontal Datum: GDA 2020 Grid: GDA 2020 MGA Zone 54</p> |  |  | <p>Normanville Energy Park Pty Ltd (NMEP)</p> <p>Surface water and groundwater assessment of the Normanville Energy Park</p> <p>1 in 100 Year Flood Extent</p> | <p>Project No. 31-12601890 Revision No. 5 Date 20/11/2024</p> |
|---|---|---|---|---|

G:\3112601890\GIS\Map\Working\12601890_01_SurfaceWaterAssessment.gxd
Print date: 20 November 2024 13:30

Data sources: DEECA, VicMap, 2023. Nearmap, 2024. NCCMA, 2023. Created by: ekanon

Figure 6-2: 1 in 100 Year Flood Extent

6.4.2 Impacts

6.4.2.1 Direct

No direct impacts are anticipated, as all Kerang Wetlands systems lie outside the Project footprint, and there will be no direct habitat loss to these due to the proposed development.

6.4.2.2 Indirect

Hydrological alteration and pollution

Key risks identified by the Project's surface water and groundwater assessment (GHD, 2024) that are relevant to the Kerang Wetlands include surface water risks associated with changes to overland flow paths or contaminated runoff, including:

- Spillage, improper handling, storage, and application of hazardous materials
- Erosion of ground surfaces and increased sediment load in runoff after a rainfall event
- Controlled pumping of surface water on (sumps) site to receiving waterways
- Disturbance causing potential erosion of channel bed or bank due to pipeline trenching through channel.

Potential impacts to surface water are primarily associated with construction activities such as the installation of turbine foundations, hardstand area, access tracks, and electrical cabling and transmission lines (through trenching and horizontal directional drilling). In the absence of controls, these activities have the potential to impact Kerang Wetlands through sediment or hydrocarbon contamination, either draining directly to the wetlands via overland flow or the Avoca River.

Construction activities such as excavation, access track development and construction of wind turbines and other infrastructure may also interrupt overland flow paths and ground elevation within the Project Site (GHD, 2024, p. 64). However, these impacts would primarily be associated with the potential temporary disruption of flow paths and are considered to be adequately managed by standard mitigation measures (GHD, 2024, p. 64).

There is a low likelihood of significant volumes of runoff reaching the wetland with the implementation of standard mitigation measures (GHD, 2024) and therefore the likelihood of the Project resulting in significant impacts to the Kerang Wetlands is considered low. This is due to the distance between the closest turbine (the most significant earthworks) and closest ground disturbance work at the existing Koorangie Terminal Station to the receiving environments (approximately 5 kilometre and 1 kilometre respectively), and the nature of the land between the Project Site and receiving environment being vegetated and pervious (GHD, 2024). Therefore, there is a low risk of impacts to any receiving water environment, including the Kerang Wetlands, from surface water associated with flooding or runoff from the Project Site with the implementation of mitigation measures (GHD, 2024, p. 64).

The Project will avoid overland flow paths, particularly those that discharge to Kerang Wetlands, where possible and an appropriate setback distance will be applied to overland flow paths. Construction works will be completed outside of the 1 in 100-year flood extent to reduce the risk of potential flooding impacts locally.

Best practice construction management measures will be implemented including selective siting, bunding, spill control, and sediment and erosion controls, as further identified in **Section 7.2**. For example, these measures include:

- Development and implementation of a construction environmental management plan (CEMP)

- Implementation of surface protection works, if required, during any direct disturbance to overland flow paths or drainage paths during the construction phase to prevent erosion
- Appropriate storage and management of hazardous materials
- Temporary diversion of overland flow paths, particularly at the Koorangie Terminal Station
- Sediment traps
- Re-establishment of vegetation cover.

Bird Species

Listed bird species, particularly migratory shorebirds, may occasionally fly over the Project Site. These species have been assessed in **Sections 6.6** and **6.7**.

Other non-listed threatened waterbird species which contribute to the ecological character of the Kerang Wetlands may also occasionally fly over the area. Indirect impacts to the Kerang Wetlands may occur if collisions to these groups lead to significant alterations to the ecological character of the Kerang Wetlands.

Impacts on threatened migratory shorebirds which may use the Ramsar site, are not expected to be significant (**Table 8-4**). Potential impacts of the project to non-listed waterbird species are unknown (**Table 8-1**).

The effective implementation of a Bird and Bat Adaptive Management Plan (MM – 12), would include requirements so that any collision impact events are monitored and where impacts are of a scale that could contribute to significant impacts to the Kerang Wetlands, are effectively mitigated through adaptive measures, and are temporary.

An assessment against the significant impact guidelines is provided in **Section 8.1**.

6.5 Listed threatened communities

6.5.1 Plains Mallee Box Woodlands of the Murray Darling Depression, Riverina and Naracoorte Coastal Plain Bioregions (PMBW)

6.5.1.1 Description

Plains Mallee Box Woodlands of the Murray Darling Depression, Riverina and Naracoorte Coastal Plain Bioregions (PMBW) is listed as Critically Endangered under the EPBC Act. It is a medium to tall open mallee eucalypt woodland with a canopy typically dominated by 'mallee box' species and an understorey in which tussock grasses may be prominent in relatively wet years, low chenopod shrubs occur in variable densities, and taller shrubs are typically sparse. The ecological community is associated with relatively medium-heavy textured soils on near-level to gently sloping plains (Department of Agriculture, Water and the Environment, 2021a). Patches of native vegetation were classified as the PMBW community in accordance with the key diagnostic characteristics and condition thresholds included in the Conservation Advice for this community (Department of Agriculture, Water and the Environment, 2021a). The criteria adopted for the PMBW community is outlined in section 4.1.1 of the Ecology Scope (Nature Advisory, 2025b), provided in **Appendix 2**.

6.5.1.2 Occurrence within Project Site

33.12 hectare of PMBW was recorded within the Project Site along the roadsides of Robinson Road, Denyer Road, Kerang-Quambatook Road and Lalbert-Kerang Road, as well as along fence lines and in some patches on private land. Another 1.06 hectare of assumed native vegetation

that has not yet been surveyed has been assumed to qualify as PMBW, in accordance with the precautionary principle. The distribution of PMBW within the Project Site is shown in **Figure 3-1**.

6.5.1.3 Occurrence within the Transport Route

1.027 hectare of PMBW was recorded in the Transport Route within sites 20 and 21. The distribution of PMBW within the Transport Route is shown in **Figure 6-9** and **Figure 6-10**.

6.5.1.4 Impacts

Direct

Project Site

The impact to PMBW resulting from the wind farm development footprint is mapped in **Figure 3-2**. All efforts have been made to avoid and minimise loss of PMBW (refer **Section 4**), with only small areas along Robinson and Denyer Roads, and an area of assumed PMBW on private land requiring removal to allow for access to the wind farm site (totalling 0.068 hectares), refer **Figure 3-2**. There are no other practical opportunities to access Robinson and Denyer Roads without incurring some losses to PMBW. As a Construction Environmental Management Plan (CEMP) will be developed and adhered to, impacts will be localised in extent, and there are not anticipated to be any additional impacts resulting from construction that have not been accounted for in the impact analysis. During the operational phase of the wind farm, no direct impacts to this community are anticipated as access tracks created during the construction phase will continue to be used. Minor impacts to PMBW are limited to the site scale, and irreversible and the timeframes (many decades) for the re-establishment of this community .

Transport Route

The impact to PMBW resulting from the transport route development footprint is mapped in **Figure 6-9** and **Figure 6-10**. All efforts have been made to avoid and minimise loss of these communities (refer Section 4), with only small areas along roadsides requiring removal to allow for wind turbine blade transportation. The loss of 0.046 hectare of PMBW will be required within the Transport Route to facilitate the transport of turbine blades. This impact is within a two zones in Site 20 and Site 21, refer **Figure 6-9** and **Figure 6-10**. The removal of 0.046 hectare of PMBW, is expected to be limited to the site scale, and irreversible , extending beyond the life of the Project given changes to soils structure associated with earthworks, and the timeframes (many decades) for the re-establishment of this community.

Indirect

As a CEMP will be developed and adhered to, direct impacts are anticipated to be localised, and there are not anticipated to be any indirect impacts on this community resulting from construction.

An assessment against the significant impact guidelines is provided in **Section 8.2**.

6.5.2 Natural Grasslands of the Murray Valley Plains (NGMVP)

6.5.2.1 Description

The Natural Grasslands of the Murray Valley Plains (NGMVP) ecological community is a type of natural temperate grassland that has semi-arid characteristics, due to the lower rainfall where it occurs. The structure is an open grassland to forbland in which trees and tall shrubs are sparse to absent. The vegetation is dominated by the ground layer with range of perennial grasses, forbs and small shrubs (Department of Sustainability, Environment, Water, Population and Community, 2012). NGMVP is listed as Critically Endangered under the EPBC Act.

6.5.2.2 Occurrence within Project Site
NGMVP was not recorded within the Project Site.

6.5.2.3 Occurrence within the Transport Route
1.604 hectares of NGMVP were recorded within the Transport Route from sites 20 and 21. The distribution of NGMVP within the Transport Route is shown in **Figure 6-9** and **Figure 6-10**.

6.5.2.4 Impacts

Direct

The impact to this listed community resulting from the Transport Route development footprint is mapped in **Figure 6-9** and **Figure 6-10**. All efforts have been made to avoid and minimise loss of these communities (refer **Section 4**), with only small areas along roadsides requiring removal to allow for wind turbine blade transportation. 0.026 hectare of NGMVP will be impacted within the Transport Route, from Sites 20 and 21. Impacts are expected to be limited to the site scale, and irreversible, extending beyond the life of the Project given changes to soils structure associated with earthworks, and the timeframes (many decades) for the re-establishment of this community.

As the project has minimised impacts to the point of effective avoidance through design, significant impacts for this community are unlikely. Offset obligations in line with the EPBC offset policy are therefore not required.

Indirect

As a CEMP will be developed and adhered to, direct impacts are anticipated to be localised, and there are not anticipated to be any indirect impacts on NGMVP resulting from construction. An assessment against the significant impact guidelines is provided in **Section 8.2**.

6.5.3 Buloke Woodlands of the Riverina and Murray-Darling Depression Bioregions (BWRMDDB)

6.5.3.1 Description

Buloke Woodlands of the Riverina and Murray-Darling Depression Bioregions (BWRMDDB) is listed as Endangered under the EPBC Act. It is a woodland or open woodland dominated or co-dominated by Buloke (*Allocasuarina luehmannii*), with a well-developed ground stratum that is usually grassy, but also includes many subshrubs and herbs; some occurrences have understoreys that are predominantly shrubby or herbaceous, although most lack a well-developed tall shrub layer (Endangered Species Scientific Subcommittee, 2000).

6.5.3.2 Occurrence within Project Site
BWRMDDB was not recorded within the Project Site.

6.5.3.3 Occurrence within the Transport Route
5.884 hectares of BWRMDDB were recorded in the Transport Route within sites 9, 10, 11, 12, 13, 14, 16, 18 and 22. The distribution of BWRMDDB within the Transport Route is shown in **Appendix 2**.

6.5.3.4 Impacts

Direct

The impact to this listed community resulting from the Transport Route development footprint is mapped in **Figure 6-3** to **Figure 6-7** and **Figure 6-11**. All efforts have been made to avoid and

minimise loss of these communities (refer **Section 4**), with only small areas along roadsides requiring removal to allow for wind turbine blade transportation. 0.167 hectare of BWRMDDDB will be impacted within the Transport Route, from Sites 10, 11, 12, 13, 14 and 22. Impacts are expected to be limited to the site scale, and irreversible, extending beyond the life of the Project given changes to soils structure associated with earthworks, and the timeframes (many decades) for the re-establishment of this community.

Indirect

As a CEMP will be developed and adhered to, direct impacts are anticipated to be localised, and there are not anticipated to be any indirect impacts on BWRMDDDB resulting from construction. An assessment against the significant impact guidelines is provided in **Section 8.2**.

6.5.4 Mallee Bird Community of the Murray Darling Depression Bioregion (MBC)

6.5.4.1 Description

The Mallee Bird Community of the Murray Darling Depression Bioregion (MBC) is listed as Endangered under the EPBC Act. The MBC is an assemblage of 20 bird species dependent on mallee vegetation in the Murray–Darling Depression bioregion. The landscape can be characterised by sandy soils, a sparse overstorey and an understorey of heathy shrubs, sedges, grasses and herbs (DCCEEW, 2024b). For the purpose of the assessment documentation, EVC's classified as Woorinen Mallee (EVC 824) and Ridged Plains Mallee (EVC96) are considered communities where the MBC may occur.

6.5.4.2 Occurrence within Project Site

The Project site is on the eastern edge of the geographical range for the MBC. None of the component species of the community were recorded during surveys and the habitat is considered suboptimal. However, as there are records of six of the component species within 20 km, within the last 10 years, the communities may occur on site. The limited habitat in the area constrains its capacity to support the MBC, and given the lack of on-site records, it is considered that the Project site is not likely to be an important site for the community.

6.5.4.3 Occurrence within the Transport Route

None of the component species of the community were recorded during surveys and the habitat is considered suboptimal. However, as there are records of six of the component species within 20 km, within the last 10 years, the communities may occur on site.

6.5.4.4 Impacts

Direct

All efforts have been made to avoid and minimise loss of these communities (refer **Section 4**), with only small areas along roadsides requiring removal to allow for wind turbine blade transportation.

Within the Project Site, approximately 0.335 ha of 90.42 ha of potentially suitable mallee habitat surveyed will be impacted (Woorinen Mallee (EVC 824) and Ridged Plains Mallee (EVC 96)). Along the Transport Route, approximately 0.112 ha of mallee habitat (Ridged Plains Mallee EVC 96) will be impacted across four locations, Sites 15, 20, 21 and 23. The impact to this listed community resulting from the Transport Route development footprint at these four sites is mapped in **Figure 6-8** to **Figure 6-10** and **Figure 6-12**.

The majority of the species of the MBC prefer to remain below canopy height and are not considered susceptible to turbine strikes and barrier effects. One component species, the Regent Parrot may fly at RSA heights though it is not seen regularly at these heights. Given that no individuals were observed and the scarcity of records in the area, it is considered unlikely to occur and therefore not susceptible to collision impacts.

The primary impact pathway for these species is habitat loss and fragmentation caused by the removal of native vegetation. Due to the small discrete areas of removal, residual impacts related to habitat loss and connectivity for the species in the MBC are expected to be very low and not significant.

Indirect

As a CEMP will be developed and adhered to, direct impacts are anticipated to be localised. There are not anticipated to be any indirect impacts on MBC resulting from construction. An assessment against the significant impact guidelines is provided in **Section 8.2**.



Figure 6-3: Transport Route MNES impacts



Figure 6-4: Transport Route MNES impacts

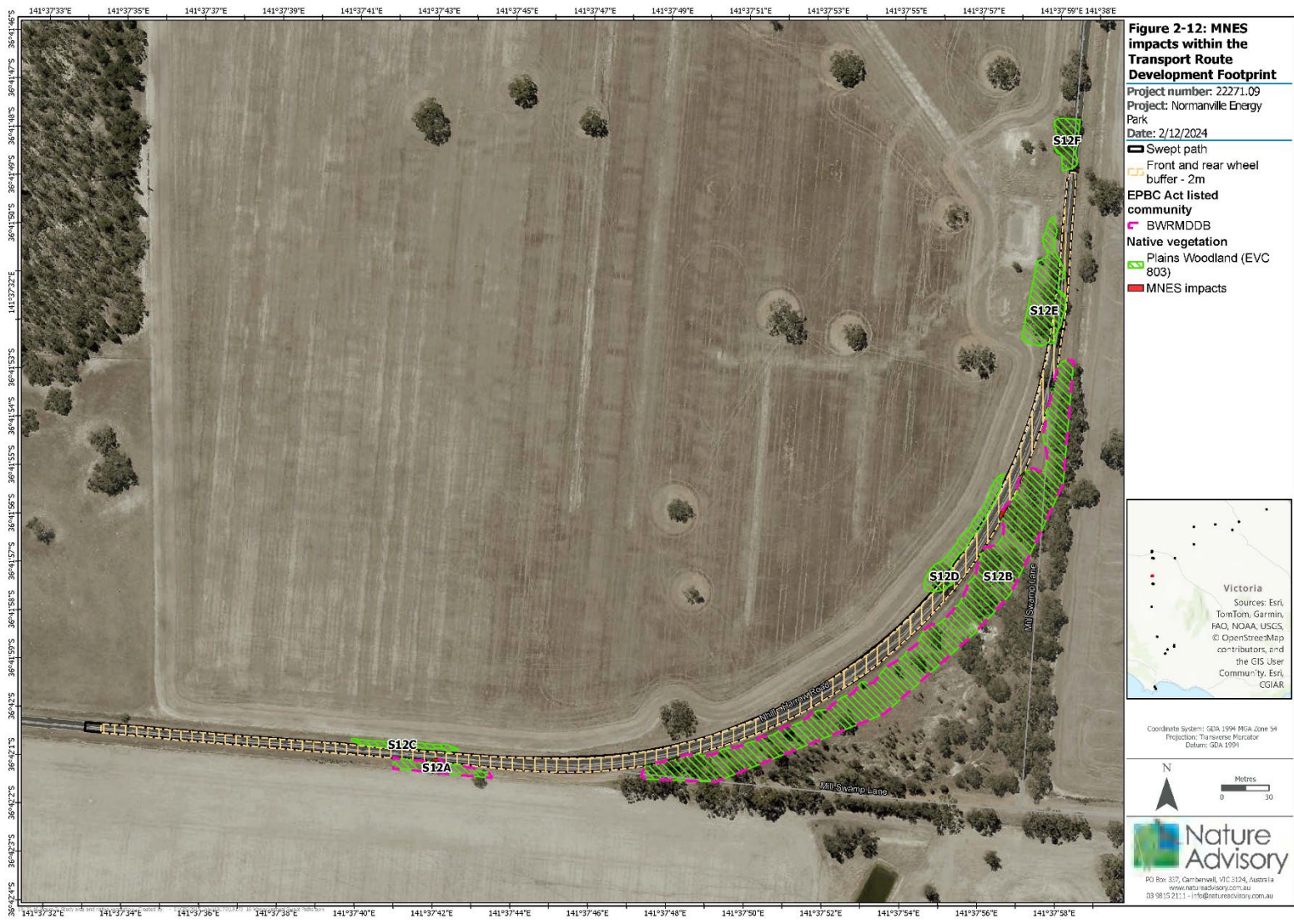


Figure 6-5: Transport Route MNES impacts



Figure 6-6: Transport Route MNES impacts



Figure 6-7: Transport Route MNES impacts

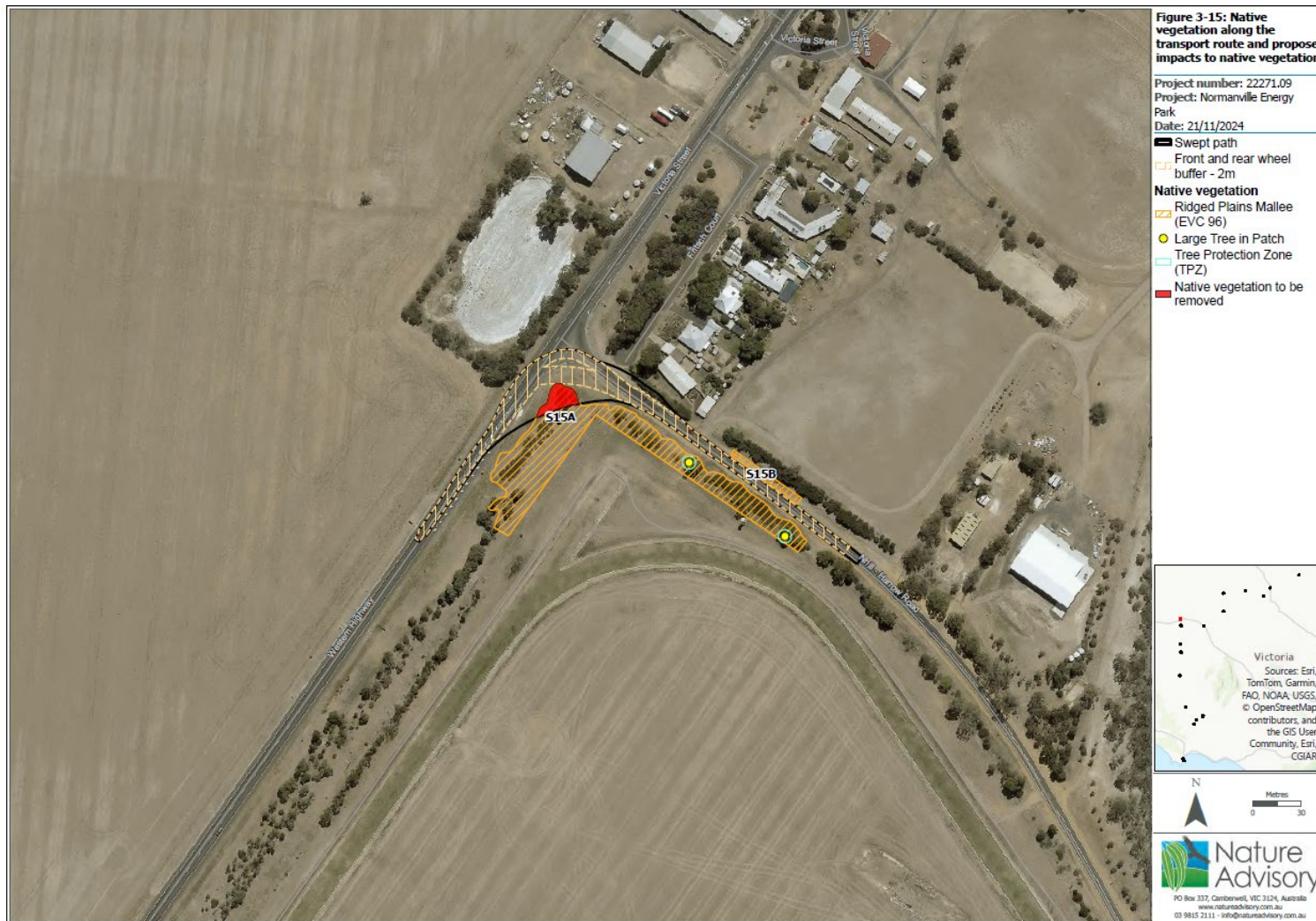


Figure 6-8: Transport Route MNES impacts



Figure 6-9: Transport Route MNES impacts



Figure 6-10: Transport Route MNES impacts



Figure 6-11: Transport Route MNES impacts



Figure 6-12: Transport Route MNES impacts

6.6 Listed threatened species

6.6.1 Blue-winged Parrot (*Neophema chrysostoma*)

6.6.1.1 Overview

Blue-winged parrots breed in Tasmania, coastal south-eastern South Australia and southern Victoria. During the breeding season (spring and summer), birds occupy eucalypt forests and woodlands (Higgins P. J., 1999).

While the Project Site lies outside areas where the species is known to breed, the Blue-winged Parrot was recorded twice within the Project Site—once during the Bird Utilisation Survey (BUS) in winter 2023 and again around the same period during the Black Falcon survey as an incidental observation—with each sighting involving a pair of birds. Both observations were below rotor swept area (RSA) height. The limited number of observations indicates that the species is scarce at the Project Site, suggesting it does not support a significant local population, though it may occasionally forage there.

6.6.1.2 Impacts

Construction stage

The Project Site has previously been cleared and has historically been subject to intense grazing and cropping pressure. The species may occasionally forage in cleared land or areas used for cropping and livestock grazing. Roadside vegetation is suitable for foraging in some areas where canopy is lacking and grassland and chenopod shrubland emerges. These areas are disjunct and of small size and unlikely to contribute significantly to Blue-winged Parrot nonbreeding season survival. Furthermore, removal of native vegetation proposed by the Project has been minimised (0.335 hectare proposed removal within patches within the wind farm site, and 0.531 removal from patches along the transport route). It is considered that this species is unlikely to be directly or indirectly impacted during the construction stage.

Operational stage

Blue-winged Parrot is known to fly at RSA heights, and there are records of turbine collisions involving this species at Victorian wind farms (Symbolix, 2020)(BL&A 2019;). Given the low number of individuals observed and the irregularity of records during the surveys conducted at the Project Site, it is likely that the species infrequently utilises available habitat or passes through the area. Considering this, the species is susceptible to impacts, through collisions, however these impacts are considered to occur infrequently localised in extent and temporary.

The effective implementation of a Bird and Bat Adaptive Management Plan (MM – 12), will trigger actions so that any impacts to this species, are effectively mitigated through adaptive measures.

An assessment against the significant impact guidelines is provided in **Section 8.3.1**.

6.6.2 Brown Treecreeper (south-eastern) (*Climacteris picumnus victoriae*), South-eastern Hooded Robin (*Melanodryas cucullata cucullata*), Southern Whiteface (*Aphelocephala leucopsis*) and Diamond Firetail (*Stagonopleura guttata*)

6.6.2.1 Overview

Brown Treecreeper was recorded consistently during surveys in roadside remnant vegetation. The Brown Treecreeper is common at most wind farm sites in Victoria, and being sedentary, it is expected to be a year-round resident at the Project Site.

The Hooded Robin was only recorded once as a single individual during the Black Falcon roaming surveys in 2023, suggesting it is rare at the Project Site. The Project Site may offer breeding and foraging opportunities, but overall, the habitat is considered suboptimal.

The Southern Whiteface has not been recorded in the Wind Farm Study Area during surveys or incidentally. It has potential to occur on occasion due to nearby occurrences along neighbouring woodland reserves.

The Diamond Firetail was not recorded at the Project Site and the habitat is considered suboptimal. The Diamond Firetail may occur sporadically, foraging during periods when native grasses are seeding or using roadside vegetation as corridors between large patches of woodland located in the surrounding areas.

6.6.2.2 Impacts

Construction stage

The primary impact pathway for these species is habitat loss and fragmentation caused by the removal of native vegetation. Since the footprint of native vegetation removal has been minimised (0.335 hectare proposed removal within patches within the wind farm site, and 0.531 removal from patches along the transport route), any residual impacts related to habitat loss and connectivity for these species are localised in extent, and not considered significant.

Operational stage

Brown Treecreeper, Hooded Robin, Southern Whiteface and Diamond Firetail typically remain below canopy height and are not considered susceptible to turbine strikes and barrier effects. An assessment against significant impact guidelines for key species, Brown Treecreeper (south-eastern) and South-eastern Hooded Robin, are provided in **Section 8.3.1** and for the other listed threatened species, Diamond Firetail and Southern Whiteface in **Section 8.3.2**.

6.6.3 Corben's Long-eared Bat (*Nyctophilus corbeni*)

6.6.3.1 Overview

This species is not confirmed to occur at the Project Site, as it is located outside the known distribution according to the Australasian Bat Society's BatMap (Australasian Bat Society, 2023).

Corben's Long-eared Bat typically inhabits large expanses of vegetated areas such as box, ironbark and native cypress pine woodlands (Churchill, 2008). The species roosts mainly in dead trees or dead spouts of live trees, often in long-unburnt mallee, and can roost under bark or in fissures (Lumsden, Nelson, & Lindeman, 2008). Maternity roosts have been recorded in dead ironbarks, cypress and buloke (Schulz, M. and Lumsden, L., 2010). The species is less likely to utilise fragmented woodlands such as occurs at the Project Site (Nature Advisory, 2024b).

Some echolocation calls recorded on at the Project Site were indicative of long-eared bats (*Nyctophilus* spp.), most likely these correspond to the non-threatened Lesser Long-eared Bat, and possibly Gould's Long-eared Bat. The EPBC Act-listed Corben's Long-eared Bat was not confirmed during surveys as the calls could not be positively identified to species level. While the species has not been confirmed on site, a record approximately 50 kilometres away (R. Gratton, pers. comm., November 2023 as noted within the Ecology Scope (Nature Advisory, 2025b),

(provided in **Appendix 2**) and identification of the species complex suggest it may occur, at least occasionally within the Project Site.

6.6.3.2 Impacts

Construction

The Project Site has previously been cleared for extensive agricultural and grazing use and now supports fragmented and degraded woodland habitat, largely restricted to roadside vegetation and a few small woodland patches. The Corben's Long-eared Bat typically inhabits large, intact woodland areas and is less likely to utilise the fragmented habitats present within the Project Site (Churchill, 2008).

If present, this species may be impacted by temporary disturbance caused by construction activities but given the effective implementation of construction stage mitigations (MM – 1, MM – 2, MM – 3, MM – 4, MM – 5), including a Construction Environmental Management Plan (MM – 9), any impacts are expected to be localised in extent and temporary.

Operation

The Corben's Long-eared Bat is also a species that forages at the edge of the canopy and within vegetation, rarely emerging from the shelter of vegetation (Churchill, 2008) (Gonsalves et al 2024); and therefore, it is unlikely to regularly fly at RSA heights. GPS tracking of this species indicates the species enters open spaces to commute rather than to forage (Gonsalves et al. 2024). Small numbers of other long-eared bat species, such as the Lesser Long-eared Bat and Gould's Long-eared Bat, have collided with operating wind turbines with minimum RSA heights of 20-40 metres in South-Eastern Australia (Nature Advisory unpubl. data), but there have been no reported collisions of Corben's Long-eared Bat with turbines with over 50 metres RSA. It is possible that the species may occasionally collide with operating wind turbines, but turbines with minimum RSA heights greater than 40 metres above the ground are anticipated to reduce the rate of microbat collisions. This species is considered potentially susceptible to impacts but is assessed as being at low risk since it is unlikely to collide with the proposed turbines at the Wind Farm Site with its minimum blade tip heights of 50 metres. Efforts to avoid and minimise impacts on native vegetation have led to relatively small losses of native vegetation comprising approximately 1.108 hectares (0.866 hectare from patches and four scattered trees equating to an area loss of 0.242 hectares). Turbines have been strategically placed within agricultural land, 50 meters from native vegetation patches throughout the Wind Farm Study Area and along the road reserves.

Given the species preference to forage within vegetation, the minimum rotor swept height of 50 metres, and implementation of mitigation measures including a BBAMP (MM – 12) and sensitive lighting (MM – 13), any impacts to this species are likely to be localised in extent and temporary. The species is considered to be susceptible to strikes on a precautionary basis.

An assessment against the significant impact guidelines is provided in **Section 8.3.1**.

6.6.4 Major Mitchell's Cockatoo - eastern (*Lophochroa leadbeateri leadbeateri*)

6.6.4.1 Overview

No records of Major Mitchell's Cockatoo occur within the Project Site. This area falls at the edge of its range in northern Victoria, where records are extremely rare. The absence of historical records within 10 kilometres of the Project Site (refer Appendix 5 of the Ecology Scope (Nature Advisory,

2025b), provided in **Appendix 2**) suggests that the species may occur only as a vagrant in the region and does not form part of the regular local avifauna.

6.6.4.2 Impacts

Construction

Although the Major Mitchell's Cockatoo is not expected to occur on-site, PMBW confined to roadside vegetation may provide occasional connectivity during exploratory movements. The Major Mitchell's Cockatoo also requires large breeding home ranges, which are absent in the Project Area, making breeding highly unlikely. Approximately 0.068 hectare of PMBW is proposed to be removed within the Project Site. Given the highly fragmented nature of the landscape and the species ability to fly across open areas, this loss is considered localised in extent and is unlikely to affect landscape connectivity. The Major Mitchell's Cockatoo is considered not susceptible to impacts during the construction stage.

Operation

Individuals and groups may occasionally fly at turbine height when dispersing but generally fly at canopy height or lower when making local movements between breeding sites, foraging locations and water sources, distributed across a large home range. However, given the lack of records, it is unlikely that the species occurs at the site. Given this, the species is not considered susceptible to collision impacts.

An assessment against the significant impact guidelines is provided in **Section 8.3.2**.

6.6.5 Australasian Bittern (*Botaurus poiciloptilus*) and Australian Painted Snipe (*Rostratula australis*)

6.6.5.1 Overview

Australasian Bittern and Australian Painted Snipe have not been recorded during surveys within the Project Area, and no suitable wetland habitat exists within the Project Site to support these species. Although occasional long-distance movements may occur for both species, the absence of wetlands within the site boundaries significantly reduces the likelihood of their presence.

6.6.5.2 Impacts

Construction

These species are closely tied to wetland habitats, which are absent within the Project Area. Construction is not expected to impact these species or their habitat.

Operational

Although both species are capable of long-distance movements in response to changing wetland conditions, both species are ground-dwellers that typically fly at low altitudes, reducing the risk of collisions. They are solitary or occur in small, loose groups and are not known to migrate along defined corridors (Herring, Veltheim, & Silcocks, 2016). Given the limited number of turbines, the absence of narrow flight pathways, and the species broad spatial movement patterns, the risk of collisions during long-distance movements is considered low. These species are considered not susceptible to collision impacts.

An assessment against the significant impact guidelines is provided in **Section 8.3.2**.

6.6.6 Plains-wanderer (*Pedionomus torquatus*)

6.6.6.1 Overview

There are no records of this species within the Project Area. There is one historical record from 2011 located west of the Avoca River, over 8 kilometres from the Project boundary, in chenopod grassland habitat. This habitat is not considered optimal for this species. The Project Area consists of highly fragmented and modified farmland with poor-quality grassland substitutes for the Plains-wanderer, and no suitable sparse native grasslands are present. As such, it is unlikely to occur within the Project Site.

6.6.6.2 Impacts

Construction

Approximately 0.026 hectare of the critically endangered Natural Grasslands of the Murray Valley Plains ecological community, habitat of the Plains Wanderer, is proposed for removal from two roadside locations at Sites 20 and 21 along the Transport Route. Given the small quantum of impact (260 square metres) adjacent to roads, it is considered that the proposed development will not meaningfully reduce the extent of important habitat for Plains Wanderer. The Project is not expected to reduce the species area of occupancy or fragment populations. This species is considered not susceptible to impacts during construction.

Operational

The species is very reluctant to fly but may fly up to 10 metres when pursued (South Australian Arid Lands NRM Board, 2019). There are no records of mortality at the few operational windfarms within the species distribution and the species is considered unlikely to fly at RSA height. Consequently, this species is not considered susceptible to collision impacts.

An assessment against the significant impact guidelines is provided in **Section 8.3.2**.

6.6.7 Regent Parrot - eastern (*Polytelis anthopeplus monarchoides*)

6.6.7.1 Overview

There are no records of Regent Parrot within the Project Area, and no historical records in the immediate surroundings. The nearest VBA record is approximately 10 kilometres north of the site. This species is more regularly reported further northwest in the Mallee region of Victoria, particularly where large remnant areas of mallee vegetation adjoin riparian forests with large, hollow-bearing River Red-gums (Higgins P. J., 1999).

6.6.7.2 Impacts

Construction

As the Project Area does not contain suitable habitat for the Regent Parrot, including key resources required for breeding and foraging, it is unlikely to impact the species. Therefore, the species is considered not susceptible to construction impacts.

Operational

Given this species is unlikely to occur within the Project Site, and the species not often observed at RSA height, it is not considered susceptible to collision.

An assessment against the significant impact guidelines is provided in **Section 8.3.2**.

6.6.8 Painted Honeyeater (*Grantiella picta*)

6.6.8.1 Overview

Occurs primarily in box-ironbark forests, woodlands, feeding mainly on mistletoe fruits. Strongly associated with mistletoe at forest and woodland edges. An uncommon breeding migrant, present in Victoria from October to February (Higgins P. J., 2001; Tzaros, 2005).

There are no records of Painted Honeyeater within the Wind Farm Project Area or the surrounding region. There are no historical records nearby, and the closest VBA record is over 55 kilometres away. Although the Project Site lies at the edge of the species range, it lacks suitable habitat, and no known populations occur nearby. It is unlikely that the species occurs within the Project Site.

6.6.8.2 Impacts

Construction

As no individuals or suitable critical habitat occur on-site and considering the species mobility, the Project is unlikely to affect the species. The species is considered not susceptible to impacts.

Operational

Given this species is unlikely to occur within the Project Site, and most flights observed of this dispersive woodland species are around canopy height or lower, it is not considered susceptible to collision.

An assessment against the significant impact guidelines is provided in **Section 8.3.2**.

6.6.9 Grey Falcon (*Falco hypoleucos*)

6.6.9.1 Overview

There are no on-site records or historical records within the immediate vicinity of the Project Site. The Grey Falcon is rarely recorded in northern Victoria, and the Project Area is located on the edge of its range, outside the core habitat. The closest VBA record is from 1997, approximately 12.5 kilometres north of the Project Site, in wetland habitat. The species is typically associated with wetlands and watercourses, and the recorded observation is most likely the result of nomadic dispersal or long-range exploratory movement. Furthermore, no recent nesting sites have been recorded in Victoria, indicating the site is outside the species breeding range. Given the scarcity of records in the vicinity, it is unlikely that the site supports individuals from a local population of the species.

6.6.9.2 Impacts

Construction

As the Project Site does not provide suitable habitat for the species, which is also known to be rare in the region, the Grey Falcon is considered not susceptible to construction impacts.

Operational

The species flies at RSA height while hunting, but given its rarity in the region, it is not considered susceptible to collisions. This species has no mortalities recorded in operational monitoring data from 21 wind farms by Nature Advisory (Unpublished data).

An assessment against the significant impact guidelines is provided in **Section 8.3.2**.

6.7 Listed migratory species

Migratory shorebirds: Sharp-tailed Sandpiper (*Calidris acuminata*), Curlew Sandpiper (*Calidris ferruginea*), Black-tailed Godwit (*Limosa limosa*), Common Greenshank (*Tringa nebularia*), Common Sandpiper (*Actitis hypoleucos*), Pectoral Sandpiper (*Calidris melanotos*), Ruff (*Calidris pugnax*), Red-necked Stint (*Calidris ruficollis*), Little Curlew (*Numenius minutus*), Marsh Sandpiper (*Tringa stagnatilis*) and Double-banded Plover (*Charadrius bicinctus*)

6.7.1.1 Overview

In Victoria, these migratory shorebirds use coastal and inland wetlands, including shallow lakes, swamps, estuaries, mudflats, and floodplains. They favour open, sparsely vegetated areas with soft substrates for foraging. Most of these species select shallow ephemeral freshwater wetlands and estuarine mudflats with plenty of food resources.

The Project Site does not contain suitable wetlands such as rivers, creeks, or DEECA-mapped wetlands and therefore does not provide habitat for these migratory shorebirds. No on-site observations of these species were recorded during surveys.

6.7.1.2 Impacts

Construction

Although the Project Site is generally located a few kilometres from the Kerang Wetlands, which supports (or is likely to support) non-breeding numbers of these species, the absence of suitable foraging and roosting habitat within the Project Site means the Project is not expected to impact their habitat.

Operation

Larger water bodies that hold important numbers of these species lie at least 4 kilometres to the north-west of the Wind Farm Site and further to the north and east. Waterbirds tend to follow waterway corridors as flyways, rather than fly long distances over open ground (McGinness et. al. 2024). The main waterways in proximity to the Wind Farm Site are the Loddon River and its anabranches > 4 kilometres east and the Avoca River > 3 kilometres north-west. There are no prominent waterways connecting wetlands on or adjacent to the Project Site. Due to the lack of large waterbodies within several kilometres of the site, and the distance of the site from the main waterway movement corridors, regular movements of waterbirds over the Wind Farm Site in important numbers are unlikely.

Given the likely low frequency of occurrence of waterbird movements across the site, the risk of turbine strike is considered to be localised and temporary.

An assessment against the significant impact guidelines is provided in **Section 8.3.2**.

6.7.2 Fork-tailed Swift (*Apus pacificus*)

6.7.2.1 Overview

Fork-tailed Swift has not been recorded at the Project Site. The species occurs throughout Australia over late spring, summer and into autumn. Locally, its occurrence is nomadic and driven by abundance of small aerial insects and it has been recorded in lakes and reserves near the Project Site in small and large (300 birds) flocks which also vary greatly.

6.7.2.2 Impacts

Construction

This species is highly mobile and is not expected to frequent the Project Site regularly due to the widespread but scattered occurrence in Victoria. It is unlikely to rely on terrestrial habitats and the proposed removal of native vegetation is not significant for the species. It is considered unlikely to be impacted during the construction stage.

Operational

The species is considered susceptible to collisions. However, given the species stable population trends and secure breeding habitat in Asia, the moderate/low likelihood of annual occurrence, the small scale the proposed action, and the avoidance of the removal of habitat, impacts to this species are likely to be localised and short term.

An assessment against the significant impact guidelines is provided in **Section 8.3.2**.

7. Mitigation, monitoring, and adaptive management approaches

7.1 Avoidance

The Projects avoidance of impacts to MNES and assessment of alternatives through design has been predominantly discussed in **Section 4.2**. Additional commentary, on design, construction and operational measures to further mitigate impacts specific to turbine strike, habitat loss and fragmentation is provided in **Sections 7.1.1** and **7.1.2**.

7.1.1 Turbine strike

As detailed within the Planning Permit Application Biodiversity Assessment (Nature Advisory, 2024a, p. 148), some species, including commons bird species, raptor species, bat species, and occasionally listed migratory birds, are susceptible to collisions with turbines due to their flight behaviours.

A key design parameter that has been adopted in the Project has been the increase of the lower tip height of the turbine blade to 50 metres above ground level, as shown in **Figure 3-3**. This conscious design measure inclusion was adopted to minimise the potential for turbine strikes with birds and bats following the Projects Bird and Bat Risk Assessment (Nature Advisory, 2023). The risk assessment analysis used monitoring data collected at ten wind farms across south-eastern Australia. The monitoring data used monthly turbine strike monitoring data for the first two years at operating wind farms. This data clearly showed that an increase in the minimum RSA height resulted in a decrease in bat mortality. Through increasing the lower tip height, the risk of blade strikes to many important and threatened bird and bat species is substantially reduced (Nature Advisory, 2025b). This design change has been the primary avoidance measure implemented to reduce the likelihood for turbine strike impacts.

Threatened species such as the Brown Treecreeper, South-eastern Hooded Robin, Southern Whiteface, Diamond Firetail, Major-Mitchell's Cockatoo – eastern, Painted Honeyeater, Plains Wanderer, Regent Parrot – eastern, Australasian Bitter, Australian Painted Snipe, and Grey Falcon typically remain below canopy height, or are considered unlikely to fly at RSA height and therefore are not considered susceptible to turbine strikes from the Project.

7.1.2 Habitat loss and fragmentation

As discussed in **Section 4.2**, considerable effort was dedicated to refining the Project's design to prevent habitat and vegetation removal, refer **Figure 4-1**. This design effort has led to a small residual impact to native vegetation. Where avoidance was not possible, mitigation measures have been detailed in **Table 7-1** to further minimise remaining impacts to MNES habitat.

7.2 Mitigations

Best practice construction environmental management measures will be implemented throughout construction, operation and decommissioning phases of the Project. The key objective of these environmental measures is to avoid, minimise and manage potential adverse effects on listed species and habitat, and to minimise potential degradation of adjacent habitats, and runoff to nearby wetlands, including the Kerang Wetlands.

The proponent has committed to the implementation of the measures detailed in **Table 7-1**, the majority of which will be delivered through the development of a comprehensive Construction Environmental Management Plan (CEMP).

Table 7-1: Mitigation measures

| ID | Measures | Stage | Estimated commitment |
|---------------------|---|----------------------------------|---|
| Biodiversity | | | |
| MM- 1 | Prior to works, establish appropriate vegetation protection zones around areas of native vegetation to be retained throughout construction, in accordance with Australian Standard AS4970-2009 Protection of Trees on Development Sites. | Preconstruction and Construction | 2 hours / site Fencing materials |
| MM- 2 | TPZs will be established, prior to the commencement of works, around scattered native trees to be retained and native vegetation adjacent to construction areas. These areas will be appropriately signposted as 'no-go' zones | Preconstruction and Construction | 2 hours / site Fencing materials |
| MM- 3 | All construction personnel will be appropriately briefed prior to works and will be notified that no construction personnel, machinery or equipment will be placed inside vegetation zones/TPZs | Preconstruction and Construction | Site induction – 1 hour Audits during construction – 1 hour per week |
| MM- 4 | Appropriate hygiene controls for personnel and machinery to control the spread of weeds & pathogens during construction and operation will be implemented and included within the CEMP | Preconstruction and Construction | CEMP preparation Wash-down facilities and time |
| MM- 5 | Appropriate dust minimisation and fire management measures to be in place during construction. Dust minimisation must be in place across the entire windfarm boundary to avoid indirect impacts to native vegetation and habitat for listed values. | Preconstruction and Construction | |
| MM- 6 | Weed control is recommended prior to and after any stockpiling of topsoil to reduce the spread of seed during and after disturbance. | Preconstruction and Construction | Spraying |
| MM- 7 | Where possible, relocate removed trees, (especially hollow bearing) within the site to serve as fauna habitat. | Preconstruction and Construction | 1 hour / tree |

| ID | Measures | Stage | Estimated commitment |
|--------|--|----------------------------------|--|
| MM- 8 | Adequate drainage must be incorporated along roads and hardstands to reduce the likelihood of surface hydrological changes in native vegetation adjacent to infrastructure and roads. | Preconstruction and Construction | |
| MM- 9 | Prepare and implement a comprehensive Construction Environmental Management Plan (CEMP) for the Project that includes a vegetation clearing and protection procedure, traffic control, sediment, erosion, dust and fire management and pest plant and animal control. | Construction | Preparation of plan Site induction – 1 hour Audits during construction – 1 hour per week |
| MM- 10 | Operational access is to be via existing tracks only. During induction into the site, all operational staff and contractors are to be informed that no access beyond existing tracks is permitted. | Operation | Site induction – 1 hour |
| MM- 11 | Operations are to be undertaken only within the final development footprint. Any required operation activities beyond the final development footprint will require review by an ecologist, and may require further assessment for native vegetation, listed species and communities | Operation | Additional surveys if required Further approvals |
| MM- 12 | A Bird and Bat Adaptive Management Plan (BBAMP) will be implemented to enable prompt identification of potential significant impacts from bird and bat strikes, and to guide the implementation of mitigation measures to reduce such impacts. The BBAMP includes the following: <ul style="list-style-type: none"> • Post-construction monitoring: <ul style="list-style-type: none"> ○ Bird Utilisation Surveys for two years, timing of surveys to be agreed with the regulator ○ Bat surveys conducted at commissioning, if required, and during the first year of operation ○ Targeted Black Falcon surveys during the first year of fully commissioned operation ○ Formal carcass monitoring of all 17 turbines every month for two years • Adaptive management: | Construction and Operation | Monitoring as outlined in the BBAMP |

| ID | Measures | Stage | Estimated commitment |
|--------|--|-----------------|----------------------|
| | <ul style="list-style-type: none"> ○ Most species are covered by the general BBAMP framework, with a more precautionary impact trigger for non-listed threatened Wedge-tailed Eagle, and non-listed waterbirds ○ Listed waterbirds are proposed to be covered under a guild specific management strategy <p>A draft BBAMP is provided in Appendix 7 to support the Ecology Scope and provides further details, including on species impact triggers, and adaptive mitigation measures.</p> | | |
| MM- 13 | Lighting can attract insects, which are prey for microbats and some species of birds. To reduce features within the wind farm that may attract additional birds or bats, there will be no turbine lighting unless specifically required by regulatory authorities or included as a condition of the Planning Permit Approval, and facility lighting will be avoided within 500 metre of turbines. | Operation | Nil |
| MM- 14 | A carcass removal program will be implemented to remove carcasses from the Project Site as soon as they are detected to reduce the chances of scavenging raptors colliding with turbines. | Operation | |
| MM- 15 | <p>Decommissioning Environmental Management Plan, which will include:</p> <ul style="list-style-type: none"> • The area to be decommissioned • Any infrastructure proposed to be retained (e.g. tracks at the behest of the landowner) • The methods proposed to undertake decommissioning • Proposed disposal of components/waste • Traffic management • Native vegetation to be protected (as per the original NMEP plans) • Sediment and erosion control • Dust and fire management <p>Pest plant and animal management</p> | Decommissioning | Preparation of plan |
| MM-16 | Machinery, earthworks, lay down areas and stockpiles will be located in areas that do not support native vegetation | Construction | |

| ID | Measures | Stage | Estimated commitment |
|-----------------------|---|----------------------------|----------------------|
| MM-17 | All machinery will enter and exit works sites along defined routes that do not impact on native vegetation or cause soil disturbance and weed spread | Construction | |
| MM-18 | All machinery brought onto the site will be weed and pathogen free and will be washed down between farming properties (this is important for environmental and agricultural protection: soil borne pathogens such as Cinnamon Fungus and livestock diseases can be easily transported by machinery) | Construction | |
| MM-19 | A construction environmental management plan (CEMP) will be developed for the Project and will outline measures to reduce light spill onto adjacent habitats of microbat species roosts within tree hollows, particularly during species' breeding season. | Construction | |
| MM-20 | Pre-clearance fauna survey will be conducted to identify high-risk areas in native vegetation to be cleared or impacted. A fauna spotter-catcher will be on-site to rescue and relocate any individuals in distress during clearing or earthworks. | Construction | |
| MM-21 | Post construction, seek opportunities for revegetation of areas of native vegetation cleared to facilitate construction, in consultation with a qualified ecologist | Operation | |
| Soil and water | | | |
| SW-1 | Significant alterations to the site's hydrology from construction works in areas that support native vegetation will be avoided. | Construction and Operation | |
| SW-2 | Reduce erosion of soil and the amount of sediment in surface water runoff to reduce the impact on receiving waterways. Follow EPA publication 1894 Managing soil disturbance (EPA 2020c). Review all crossing points identified within the Surface water and groundwater assessment (GHD, 2024) | Construction and Operation | |

| ID | Measures | Stage | Estimated commitment |
|------|---|----------------------------|----------------------|
| SW-3 | Monitor areas with significant soil disturbance and overland flow to identify areas within the site boundary that experience erosion and contribute to sediment in surface water runoff. | Construction and Operation | |
| SW-4 | Rock armouring will be installed where significant overland flow paths or channels are present (but no other indication of waterway as per Water Act 1989 definition). Rock armouring will be installed if there are signs of wet/unstable soil or changes to vegetation that signal higher water concentration that is likely to impact trail surface stability. | Construction and Operation | |
| SW-5 | Areas where erosion is likely to occur should be avoided during construction. Sediment traps will be implemented where possible and necessary to reduce the amount of sediment in surface water runoff impacting receiving waterways. | Construction and Operation | |
| SW-6 | <p>Minimise the likelihood and impact of a spillage and establish controls to contain and clean-up. Follow EPA publication 1698 Liquid storage and handling guidelines (EPA 2018).</p> <p>Implement the CEMP to manage chemical spills and leaks:</p> <ul style="list-style-type: none"> • Australian Standard AS 1940- Storage and handling of flammable and combustible liquids to be adhered to • All storage and transport of chemicals will be undertaken in accordance with the relevant Australian standards • Current safety data sheets (SDS) would be kept on site wherever hazardous materials are being stored • A register of all chemicals and SDS for these chemicals would be held on site • Spill kits would be present on site during these works • All personnel would be trained in spill response procedures and in the use of spill kits • If a spill occurs works would stop immediately, and emergency procedures enacted if required • All regulated and hazardous waste would be stored in a bunded area as far as practical from the waterways <p>The quantity of materials being stored on site would be minimised.</p> | Construction and Operation | |

| ID | Measures | Stage | Estimated commitment |
|-------|---|----------------------------|----------------------|
| SW-7 | <p>Plant shall not undergo maintenance or cleaning where contaminants could be released to any waters.</p> <p>Refuelling of machinery shall conform with the following:</p> <ul style="list-style-type: none"> • Occur away from waterways unless for tracked machinery and contingency plan management measures are available in the immediate area • Fuelling activity to be supervised at all times • Hoses to be fitted with a stop valve at the nozzle end • Machinery shall be maintained to minimise the leakage of oil, fuel, hydraulic and other fluids. During the servicing of machinery, the Contractor shall use management measures to capture and contain oils, fuels, hydraulic and other fluids so as to minimise contamination of the servicing area. | Construction and Operation | |
| SW-8 | <ul style="list-style-type: none"> • All waste material would be removed from the site before removing any erosion and sediment control measures. | Construction and Operation | |
| SW-9 | All hazardous materials would be removed from site and disposed of appropriately. | Construction and Operation | |
| SW-10 | <p>Reduce changes to overland flow paths and surface water runoff.</p> <p>Significant overland flow paths and drainage channels (as well as irrigation channels, diversions and storages) within the Project area will be avoided during the construction phase of the Project. Commence works away from major overland flow paths within the site boundary.</p> | Construction and Operation | |
| SW-11 | Local drainage and storage will be implemented around construction areas that are located around drainage paths. Local drainage flooding assessment will be undertaken in detailed design to inform micro siting and sizing of drainage infrastructure. | Construction and Operation | |
| SW-12 | Where land elevation has changed during construction and drainage paths disrupted, surface water will be redirected to local channels or flow paths that discharge to their original outlets, e.g. Lake Bael Bael. | Construction and Operation | |

| ID | Measures | Stage | Estimated commitment |
|-------|---|---|----------------------|
| SW-13 | In the absence of flood modelling of local drainage or overland flow paths within the Project area, an appropriate setback distance will be applied to overland flow paths discharging to receiving sensitive receptors for all Project infrastructure. | Prior to construction, Construction and Operation | |

7.3 Monitoring commitments

Monitoring commitments for the Project, as detailed in **Section 7.2**:

- SW-3 – Soil monitoring during construction
- SW11 – Surface water monitoring during construction
- MM-12 - Bird and Bat Adaptive Management Plan (BBAMP) during operation.

Refer to **Table 7-1** for details of the monitoring aspects.

8. Significant residual impacts and offsets

The significant impact assessments completed by Nature Advisory (2025b) has assessed the potential residual impacts to the wetlands of international importance (Ramsar sites), threatened ecological communities, threatened species and migratory species, identified in **Section 6**. The significant impact assessments have been made against the criteria defined in the *EPBC Act Significant Impact Guidelines 1.1 – Matters of National Environmental Significance* (Department of the Environment, 2013). The following sections detail the findings of the significant impact assessments, residual impacts to MNES and outline the Projects position on offsets for residual impacts on MNES.

8.1 Ramsar wetlands

The impacts of the proposed Project on Kerang Wetlands are considered in **Table 8-1** against the *EPBC Act Significant Impact Guidelines 1.1 – Matters of National Environmental Significance* (Department of the Environment, 2013) for Ramsar wetlands.

Table 8-1: Significant Impact Assessment for Kerang Wetlands

| Significant impact criterion | Assessment | Significant impact likelihood |
|---|---|-------------------------------|
| Areas of the wetland being destroyed or substantially modified. | Areas of the wetland system are located outside the Project boundaries and therefore the Project will not directly impact, destroy or modify any areas of the Kerang Wetlands. There will therefore not be any local, regional, state or national scale direct impacts to the wetland. | Unlikely |
| A substantial and measurable change in the hydrological regime of the wetland, for example, a substantial change to the volume, timing, duration and frequency of ground and surface water flows to and within the wetland. | The Project will not directly impact the hydrology regime of the Kerang Wetlands as its footprint does not overlap with any part of the wetlands and there are no connected waterways that could be affected. The surface water and groundwater report (GHD, 2024) indicated that surface water and groundwater risks associated with the Project can be appropriately managed through standard construction environmental management measures. | Unlikely |
| The habitat or lifecycle of native species, including invertebrate fauna and fish species, dependent upon the wetland being seriously affected. | There will be no direct impacts on habitat within the Kerang Wetlands, as the footprint does not overlap with any part of the wetlands and there are no connected waterways that could be affected. Habitat within the Project Site does not contribute to feeding, roosting, or breeding habitat supporting threatened and/or migratory bird species which contribute to the ecological character of the Kerang Wetlands. Impacts on native species are limited to potential turbine collisions involving migratory shorebirds and other wetland | Unlikely |

| Significant impact criterion | Assessment | Significant impact likelihood |
|--|---|-------------------------------|
| | <p>birds that may occasionally traverse the Project Area (see Section 7.4.5 of Appendix 2).</p> <p>There is a residual risk to some non-threatened wetland bird species which contribute to the ecological character of the Kerang Wetlands, including colonially breeding/nesting species, such as Straw-necked Ibis and Great Cormorant.</p> <p>Although cumulative observations during BUS surveys at the NMEP were relatively moderate (362 Great Cormorants and 405 Straw-necked Ibises), detections were infrequent, representing only 0.67% of all point-count replicates for Great Cormorant and 5.6% (3.3% at impact points) for Straw-necked Ibis. This low detection frequency indicates these species are infrequent users of the airspace at the wind farm location. Empirical studies show high avoidance rates for most waterbirds, generally above 95% (Cook et al. 2012), but as some of the flocks that fly over the site may be relatively large, the risk of collision this presents is uncertain.</p> <p>Due to the intermittent nature of these waterbird crossings, and other factors such as a lack of information on their population sizes, the predicted potential impacts to these species and therefore the Ramsar site, are unknown. The BBAMP (MM-12) will respond to this risk through a waterbird specific management strategy in the case of an impact trigger involving a listed or non-listed waterbird species of concern.</p> <p>Overall, the likelihood that collision impacts to bird species which contribute to the ecological character of the Kerang Wetlands would lead to significant impacts either to the species in question or to the Kerang Wetlands, is considered to be low, especially with the BBAMP in place, and the wind farm is considered unlikely to significantly impact the lifecycle of these species.</p> | |
| <p>A substantial and measurable change in the water quality of the wetland – for example, a substantial change in the level of salinity, pollutants, or nutrients in the wetland, or water temperature which may adversely impact on biodiversity, ecological integrity, social amenity or human health.</p> | <p>There will be no direct impacts on the water quality of the wetland system, as the footprint does not overlap with any part of the wetlands and there are no connected waterways that could be affected.</p> <p>The Project will implement a Construction Environmental Management Plan (CEMP;</p> | <p>Unlikely</p> |

| Significant impact criterion | Assessment | Significant impact likelihood |
|---|--|-------------------------------|
| | MM- 9), which will strictly control dust and other pollution sources during construction. | |
| An invasive species that is harmful to the ecological character of the wetland being established (or an existing invasive species being spread) in the wetland. | No invasive species will be introduced or spread as a result of the Project, as the footprint does not overlap with any part of the wetland system and there are no connected waterways. In addition, a Construction Environmental Management Plan (CEMP; MM- 9), which will include a Biosecurity Management Plan will be implemented to control the spread and proliferation of invasive species and disease. | Unlikely |
| Overall assessment of likelihood of significant impact | | Unlikely |

Source: Normanville Energy Park – Assessment Documentation – Ecology Scope (Nature Advisory, 2025b)

8.2 Listed threatened ecological communities

The following threatened ecological communities have been assessed within **Table 8-2** against the relevant listing status (being critically endangered and/or endangered) of the *EPBC Act Significant Impact Guidelines 1.1 – Matters of National Environmental Significance* (Department of the Environment, 2013):

- Plains Mallee Box Woodlands of the Murray Darling Depression, Riverina, and Naracoorte Coastal Plain Bioregions (PMBW) – **EPBC Act: Critically Endangered**
- Buloke Woodlands of the Riverina and Murray-Darling Depression Bioregions – **EPBC Act: Endangered**
- Natural Grasslands of the Murray Valley Plains – **EPBC Act: Critically Endangered**
- Mallee Bird Community of the Murray Darling Depression Bioregion – **EPBC Act: Endangered.**

Table 8-2: Significant Impact Assessment for Threatened Ecological Communities

| Community | Criteria | Response | Significant impact likelihood |
|--|---|--|-------------------------------|
| Plains Mallee Box Woodland (PMBW) | Reduce the extent of an ecological community | <p>A total of 0.114 hectare of PMBW is proposed to be impacted by the Project, 0.068 hectare from the Project Site and 0.046 hectare from the Transport Route. This will occur in three locations within the Project Site, and at site 20 within the Transport Route, impacting two isolated roadside patches (S20A and S20E).</p> <p>The 0.068 hectare proposed for removal within the Project Site represents only 0.2% of the 34.18 hectare of PMBW mapped in the Project Site. The overall 0.114 hectare impact for the Project represents only 0.000028% of the estimated 2005 extent of 39,961 hectare (Department of Agriculture, Water and the Environment, 2021a).</p> <p>Impacts are considered to be minimal even at a local scale. Therefore, it is considered that the proposed development will not meaningfully reduce the extent of PMBW.</p> <p>Measures to protect remaining vegetation and utilise cleared trees will be implemented by the Project (MM-1, MM-2, and MM-7).</p> | Unlikely |
| | Fragment or increase fragmentation of an ecological community, for example by clearing vegetation for roads or transmission lines | <p>The community is already fragmented by roads and driveways within the Project Site. The conservation advice for this community (Department of Agriculture, Water and the Environment, 2021a) allows for 'gaps' of up to 30m, including tracks such as those proposed, which will be less than 30m wide. Therefore, it is considered that the proposed development will not fragment or increase fragmentation of the community.</p> <p>Within the Transport route, the areas proposed for removal at site 20 occur on the road-facing edges of an already fragmented patch of this community. Therefore, it is not considered that the proposed removal will meaningfully increase fragmentation of the community.</p> <p>Measures to protect remaining vegetation and utilise cleared trees will be implemented by the Project (MM-1, MM-2, and MM-7).</p> | Unlikely |
| | Adversely affect habitat critical to the survival of an ecological community | <p>The Conservation Advice (Department of Agriculture, Water and the Environment, 2021a) identifies habitat critical to the survival of the community as those patches that are in the best condition (i.e. Classes A and B), and/or in close proximity to other native vegetation (including the ecological community). Therefore, the PMBW recorded within the Project Site</p> | Unlikely |

| Community | Criteria | Response | Significant impact likelihood |
|-----------|---|--|-------------------------------|
| | | <p>can be considered habitat critical to the survival of the community, given it mostly met the Class A condition threshold and occurs within a relatively connected matrix of roadside patches. The patches recorded in the Transport Route are unlikely to be considered habitat critical to the survival of the community, given their isolation from other native vegetation and occurrences of the community.</p> <p>Nonetheless, given that only 0.2% of the 34.18 hectare of PMBW mapped in the Project Site and 0.000028% of the estimated 2005 extent of 39,961 hectare (Department of Agriculture, Water and the Environment, 2021a) is proposed for removal, it is unlikely that the proposal will adversely affect habitat critical to the survival of PMBW.</p> | |
| | <p>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</p> | <p>A comprehensive CEMP will be prepared and implemented for the Project (see MM- 9). Considering this, it is unlikely that the Project would modify or destroy abiotic factors necessary for an ecological community's survival.</p> | Unlikely |
| | <p>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</p> | <p>The protection of retained PMBW and implementation of a comprehensive CEMP (see MM- 9) will prevent a substantial change in the species composition of PMBW.</p> | Unlikely |
| | <p>Cause a substantial reduction in the quality or integrity of an occurrence of an ecological community, including, but not limited to: assisting invasive species, that are harmful to the listed ecological community, to become established, or causing regular mobilisation of fertilisers, herbicides or other chemicals or pollutants into the ecological</p> | <p>The protection of retained PMBW and implementation of a comprehensive CEMP (see MM- 9) will prevent a substantial reduction in the quality or integrity of PMBW within the wind farm site.</p> <p>The CEMP will include a Biosecurity Management Plan to control the spread and proliferation of invasive species and disease.</p> | Unlikely |

| Community | Criteria | Response | Significant impact likelihood |
|--|---|---|-------------------------------|
| | community which kill or inhibit the growth of species in the ecological community | | |
| | Interfere with the recovery of an ecological community. | Given that the 0.068 hectare proposed for removal within the Project Site represents only 0.2% of the 34.18 hectare of PMBW mapped in the Project Site, and 0.114 hectare impact for the Project represents only 0.0000028% of the estimated 2005 extent of 39,961 hectare (Department of Agriculture, Water and the Environment, 2021a) , it is considered that impacts are minimal even at a local scale. the proposed development will not interfere with the recovery of the community. | Unlikely |
| Buloke Woodlands of the Riverina and Murray-Darling Depression Bioregions (BWRMDDB) | Reduce the extent of an ecological community | 0.167 hectare is proposed for removal at six sites along the Transport Route. The patches of the BWRMDDB community at each of these locations are small and occur immediately along roadside. Each instance of removal is small (the largest being 0.07 hectares, with most being less than 20 sq m). The National Recovery Plan (Department of Sustainability and Environment, 2011) noted that the Plains Savanna vegetation community, which includes Buloke Woodlands, has over 21,000 hectare extant in the Wimmera. Impact to 0.167 hectare would constitute only 0.000008% of this. Impacts are considered to be minimal even at a local scale. Therefore, it is considered that the proposed development will not meaningfully reduce the extent of this community. Measures to protect remaining vegetation and utilise cleared trees will be implemented by the Project (MM-1, MM-2, and MM-7). | Unlikely |
| | Fragment or increase fragmentation of an ecological community, for example by clearing vegetation for roads or transmission lines | The patches of the BWRMDDB community at each of these locations are small and occur immediately along roadside. They are already fragmented by the existing road. Therefore, it is considered that the proposed development will not meaningfully increase fragmentation. Measures to protect remaining vegetation and utilise cleared trees will be implemented by the Project (MM-1, MM-2, and MM-7). | Unlikely |
| | Adversely affect habitat critical to the survival of an ecological community | Given that only 0.167 hectare (or 0.000008% of the 21,000 hectare extant Plains Savannah in the Wimmera (Department of Sustainability and Environment, 2011) is proposed for removal along the roadside edge, it is unlikely that the proposal will adversely affect habitat critical to the survival of BWRMDDB. | Unlikely |

| Community | Criteria | Response | Significant impact likelihood |
|---------------------------|--|---|-------------------------------|
| | 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 | A comprehensive (see MM- 9) CEMP will be prepared and implemented for the Project. Considering this, it is unlikely that the Project would modify or destroy abiotic factors necessary for an ecological community's survival. | Unlikely |
| | 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 | The protection of retained BWRMDDB and implementation of a comprehensive CEMP (see MM- 9) will prevent a substantial change in the species composition of this community. | Unlikely |
| | Cause a substantial reduction in the quality or integrity of an occurrence of an ecological community, including, but not limited to: assisting invasive species, that are harmful to the listed ecological community, to become established, or 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 | The protection of retained BWRMDDB and implementation of a comprehensive CEMP (see MM- 9) will prevent a substantial reduction in the quality or integrity of this community. The CEMP will include a Biosecurity Management Plan to control the spread and proliferation of invasive species and disease. | Unlikely |
| | Interfere with the recovery of an ecological community. | Given that only 0.167hectare of BWRMDDB is proposed for removal, and this will be from 29 small portions of larger patches immediately adjacent roadsides, impacts are considered to be minimal even at a local scale and it is unlikely that the proposal will interfere with the recovery of an ecological community. | Unlikely |
| Natural Grasslands | Reduce the extent of an ecological community | 0.026 hectare is proposed for removal from two roadside locations at sites 20 and 21 along the Transport Route. The predicted extent within Victoria is | Unlikely |

| Community | Criteria | Response | Significant impact likelihood |
|--|--|---|-------------------------------|
| of the Murray Valley Plains (NGMVP) | | <p>33,000 - 48,000 hectare (TSSC 2012), and thus, based on a midpoint of 40,500 ha, the Project would impact approximately 0.00000064% of the Victorian community.</p> <p>Given the small quantum of impact (260 square metres, or 0.00000064% of the Victorian community), it is considered that impacts are minimal even at a local scale. the proposed development will not meaningfully reduce the extent of this community.</p> <p>Measures to protect remaining vegetation and utilise cleared trees will be implemented by the Project (MM-1, MM-2, and MM-7).</p> | |
| | Fragment or increase fragmentation of an ecological community, for example by clearing vegetation for roads or transmission lines | The community is already fragmented by roads and driveways within the region. The areas proposed for removal form the inner roadside edges of larger patches of this community. Therefore, the proposed removal will not fragment or increase fragmentation of the community. | Unlikely |
| | Adversely affect habitat critical to the survival of an ecological community | Given that only 0.026 hectare is proposed for removal along two roadside edges, it is unlikely that the proposal will adversely affect habitat critical to the survival of NGMVP. | Unlikely |
| | 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 | A comprehensive CEMP (see MM- 9) will be prepared and implemented for the Project. Considering this, it is unlikely that the Project would modify or destroy abiotic factors necessary for the ecological community's survival. | Unlikely |
| | 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 | The protection of retained NGMVP and implementation of a comprehensive CEMP (see MM- 9) will prevent a substantial change in the species composition of this community. | Unlikely |
| | Cause a substantial reduction in the quality or integrity of an occurrence of | The protection of retained NGMVP and implementation of a comprehensive CEMP (see MM- 9) will prevent a substantial reduction in the quality or integrity of this community. | Unlikely |

| Community | Criteria | Response | Significant impact likelihood |
|---|---|---|-------------------------------|
| | <p>an ecological community, including, but not limited to:</p> <p>assisting invasive species, that are harmful to the listed ecological community, to become established, or 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</p> | The CEMP will include a Biosecurity Management Plan to control the spread and proliferation of invasive species and disease. | |
| | Interfere with the recovery of an ecological community. | Given that only 0.026 hectare is proposed for removal along two roadside edges, and this will be from an area immediately adjacent to a roadside, impacts are considered to be minimal even at a local scale and it is unlikely that the proposal will interfere with the recovery of an ecological community. | Unlikely |
| Mallee Bird Community of the Murray Darling Depression Bioregion (MBC) | Reduce the extent of an ecological community. | <p>The site is on the eastern edge of the geographical range of the community, though none of the component species were recorded during surveys using the habitats on site, and there are no on-site records.</p> <p>Within the Project Site, approximately 0.335ha of mallee habitat is proposed to be removed (Woorinen mallee and Ridged plains mallee), of 90.42 hectares of potentially suitable habitat surveyed. This does not include all native vegetation that occurs within the Project Site. 0.068 hectares of this removal qualifies as Plains Mallee Box Woodlands of the Murray Darling Depression and Naracoorte Coastal Plain Bioregions (EPBC Act: Critically Endangered) (PMBW).</p> <p>Along the transport route, approximately 0.112ha of mallee habitat (Ridged plains mallee) is proposed to be removed across four locations. 0.046 ha of this transport route removal qualifies as PMBW.</p> <p>None of the potentially suitable habitats to be impacted are to be cleared to such an extent as to not meet the 10-ha size requirement. It is unlikely that impacts will significantly reduce the area of occupancy of the species.</p> | Unlikely |
| | Fragment or increase fragmentation of an ecological community. | The extent of removal within the Project Site is unlikely to fragment the local bird community, as impacts occur only as small breaks in two locations along narrow bands of habitat. These breaks are less than 25 m wide. The size of | Unlikely |

| Community | Criteria | Response | Significant impact likelihood |
|-----------|--|--|-------------------------------|
| | | <p>these gaps in vegetation is small, with birds likely to still disperse across breaks. Larger contiguous blocks of potentially suitable habitat for these species within the Project Area are not impacted.</p> <p>Along the transport route, removal of roadside mallee vegetation is spread across four locations and occurs along the inner roadside edge of vegetation. Bands of roadside vegetation are not broken and will not be fragmented.</p> <p>Revegetation within the construction zone is advised post-construction to enhance and link habitats, which will reduce the gaps between habitats further.</p> | |
| | Adversely affect habitat critical to the survival of an ecological community. | <p>The habitat identified in the Project Area is not considered critical habitat. The proposed removal will generally be spread out across the Project Area, with no significant removal of large continuous areas or linking habitats.</p> <p>To mitigate lost habitat removed trees will be placed in nearby patches of suitable habitat to enhance foraging opportunities.</p> | Unlikely |
| | 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 | <p>A comprehensive CEMP will be prepared and implemented for the project. Considering this, it is unlikely that the project would modify or destroy abiotic factors necessary for this ecological community's survival.</p> | Unlikely |
| | 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 | <p>Considering the small amount of removal of suitable habitat, and protection of retained mallee habitat, it is unlikely that the species composition of this community would be changed.</p> | Unlikely |
| | Cause a substantial reduction in the quality or integrity of an occurrence of an ecological community, including, but not limited to: | <p>The small amount of removal of suitable habitat, and implementation of a comprehensive CEMP will prevent a substantial reduction in the quality or integrity of further suitable habitat and hence this bird community.</p> | Unlikely |

| Community | Criteria | Response | Significant impact likelihood |
|-----------|---|---|-------------------------------|
| | <ul style="list-style-type: none"> ▪ assisting invasive species, that are harmful to the listed ecological community, to become established, or 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 | | |
| | Interfere with the recovery of an ecological community. | No recovery plan is in place for this community, though the impacts of the development are not likely to significantly increase the known threats to the community. | Unlikely |

Source: Normanville Energy Park – Assessment Documentation – Ecology Scope (Nature Advisory, 2025b)

8.3 Listed threatened species

8.3.1 Key listed threatened species

As outlined in the Assessment Scope in **Appendix 1**, the Project must assess the following key listed threatened species against the relevant listing status (being vulnerable, endangered and/or critically endangered) of the *EPBC Act Significant Impact Guidelines 1.1 – Matters of National Environmental Significance* (Department of the Environment, 2013):

- Blue-winged Parrot
- Brown Treecreeper (south-eastern)
- South-eastern Hooded Robin
- Corben’s Long-eared Bat.

Species-specific definitions utilised by the assessment are detailed within section 7.4 of the Ecology Scope provided in **Appendix 2**.

Table 8-3: Significant Impact Assessment for key listed threatened species

| Species | Criteria | Response | Significant impact likelihood |
|--|---|--|-------------------------------|
| Blue-winged Parrot (Vulnerable) | Lead to a long-term decrease in the size of an important population of a species. | <p>The Blue-winged Parrot population is roughly estimated at 10,000 mature individuals (Holdsworth, et al., 2021). They are partial migrants, with birds visiting the broader region, northern Victoria, during the non-breeding season from autumn to early spring (Higgins P. J., 1999). They are highly mobile, with their population spreading across a vast non-breeding range in mainland Australia that extends up to north-eastern South Australia, south-western Queensland, and western New South Wales (BirdLife International, 2022). A paucity of historical records, few detections and numbers during surveys, and a lack of breeding habitat (even outside known ranges) suggest that BWPs are infrequent non-breeding season visitors who may only occasionally forage on pastures and clearings on site. It is therefore considered that the individuals on site do not represent part of an important population.</p> <p>If collision mortalities do occur, they are expected to be very infrequent and represent a very small portion of the estimated population, likely less than the 10 individuals required to be a nationally significant proportion of the population. Due to the small size of the wind farm (17 turbines), its contribution to cumulative impacts is expected to remain minimal. The NMEP will not lead to a long-term decrease in the size of the population of this species.</p> | Unlikely |
| | Reduce the area of occupancy of an important population. | The Project Site comprises highly modified farmland and lies outside the species breeding range. Reductions in area of occupancy are more critical in relation to breeding habitats outside the NMEP region, where large-scale agriculture is a major threat and conservation efforts prioritise woodland protection (Holdsworth, et al., 2021). Removal of native vegetation patches at the wind farm site has been minimised to 0.335 hectare and 21 large trees. Removal of patches of treed native vegetation along the transport route amounts to approximately 0.531 hectare across multiple small roadside locations. This level of clearance is not expected to directly reduce the area of occupancy of the BWP population. | Unlikely |
| | Fragment an existing important population into two or more populations. | The BWP vulnerability to habitat fragmentation is most critical during the breeding season, where the loss of woodland directly impacts nesting sites and reproductive success (reviewed in DCCEEW 2023). In contrast, during the non-breeding season the species primarily forages on ground in already disturbed landscapes, such as pastures and clearings in farmland (Collar & Boesman, 2020). | Unlikely |

| Species | Criteria | Response | Significant impact likelihood |
|---------|--|--|-------------------------------|
| | | <p>Although farmland activities such as livestock grazing can degrade grassland habitat and reduce food resource availability (reviewed in DCCEE 2023), the Project activities during construction, operations and decommissioning are not expected to contribute further to habitat fragmentation. The target species is highly mobile across its range, exhibiting a diffuse movement pattern rather than relying on narrow flight corridors.</p> <p>It is not expected that the population in the area would be impacted through fragmentation.</p> | |
| | Adversely affect habitat critical to the survival of a species. | <p>According to the Conservation Advice for this species (Department of Climate Change, Energy, the Environment and Water, 2023d), habitat critical to the survival of this species includes foraging and staging habitats including grasslands, grassy woodland and semi-arid chenopod shrubland, as well as hollow bearing trees or stumps.</p> <p>Foraging habitat on site mainly comprises grazing paddocks and cleared farmland. It is not anticipated that the relatively small degree of impacted foraging habitat represents habitat critical to the survival of this species.</p> <p>There is no indication that the proposed NMEP site will affect critical BWP habitat.</p> | Unlikely |
| | Disrupt the breeding cycle of an important population. | <p>The Project Site falls within the BWP non-breeding range.</p> <p>The Project will not disrupt the breeding cycle of the BWP.</p> | Unlikely |
| | Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline. | <p>BWP habitat on site is associated with foraging areas, mainly grazing paddocks and cleared farmland. These areas will not be further altered in a way that would significantly impact the availability or quality of BWP habitat.</p> <p>There is no indication that the NMEP will affect BWP habitat availability or quality.</p> | Unlikely |
| | Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat. | <p>The Project will implement Construction Environmental Management Plan (CEMP; MM- 9), which will include a Biosecurity Management Plan to control the spread and proliferation of invasive species and disease.</p> <p>It is unlikely that the NMEP will introduce invasive species or disease that may cause the species to decline with the implementation of appropriate mitigation measures.</p> | Unlikely |
| | Introduce disease that may cause the species to decline. | <p>The proposal will not engage in any activities likely to introduce disease harmful to this species.</p> | Unlikely |

| Species | Criteria | Response | Significant impact likelihood |
|---|--|---|-------------------------------|
| | | <p>The Project will implement Construction Environmental Management Plan (CEMP; MM- 9), which will include a Biosecurity Management Plan to control the spread and proliferation of invasive species and disease.</p> <p>It is unlikely that the NMEP will introduce disease that may cause the species to decline.</p> | |
| | Interfere substantially with the recovery of the species. | No recovery plan is in place for the species. The BWP is expected at the Project Site primarily as a seasonal, non-breeding visitor. Few historical records and survey detections suggest occasional, low numbers, indicating the site is not important habitat. Given the limited number of turbines and minimal impacts on the habitat, the Project is not anticipated to significantly increase the known threats to the species. | Unlikely |
| Brown Treecreeper (south-eastern) (Vulnerable) | Lead to a long-term decrease in the size of an important population of a species | The total population is estimated at 145,000 (Garnett & Baker, 2023)(Garnet and Baker 2023). Native vegetation patch clearance at the wind farm site has been minimised to 0.335 hectare and 21 large trees, with an additional 0.531 hectare of treed roadside vegetation along the transport route. This potentially suitable breeding habitat is smaller than the minimum Brown Treecreeper territory size (1.1–10.7 ha) (NSW Office of Environment and Heritage, 2024)The clearance will be dispersed across multiple sites, with no single patch to be reduced below a size which could support a breeding territory. Moreover, the subspecies is unlikely to fly at RSA height, as it typically remains below the canopy level. A significant impact leading to a decline in an important population is therefore unlikely. | Unlikely |
| | Reduce the area of occupancy of an important population | The area of occupancy would be reduced by up to 0.866 hectare of potential suitable breeding habitat and the removal of 21 large trees, spread across the Project footprint and transport route. As this represents a minimal reduction relative to the area required to support a single breeding territory (NSW Office of Environment and Heritage, 2024) —it is unlikely to impact the subspecies ability to persist in the area or result in a measurable reduction in area of occupancy. | Unlikely |
| | Fragment an existing important population into two or more populations | The extent of removal is unlikely to fragment the local population, as impacts are limited to small breaks in vegetation, mostly along roadsides for access points and swept paths. These gaps are generally only a few metres wide, and birds are likely to continue dispersing across them (Cooper & Walters, 2002). | Unlikely |

| Species | Criteria | Response | Significant impact likelihood |
|---------|--|---|-------------------------------|
| | Adversely affect habitat critical to the survival of a species | <p>Revegetation of areas cleared that are not required, post-construction is included as part the Environmental Management Plan, which will assist in enhancing connectivity and further reduce habitat gaps (Cooper & Walters, 2002).</p> <p>Habitat critical to the survival of the Brown Treecreeper (south-eastern) includes areas that have relatively undisturbed grassy woodland with native understorey. Habitat structure should be quite open at ground level so that birds can feed on or near the ground and maintain vigilance against predators (Norske, 2020). The required degree of openness is likely to be created by moderate levels of disturbance by fire and/or grazing (Department of Climate Change, Energy, the Environment and Water, 2023b). Large living and dead trees are essential for roosting and nesting sites and foraging, with fallen timber also providing essential foraging habitat (Department of Climate Change, Energy, the Environment and Water, 2023b). Tree hollows in standing dead or live trees and tree stumps are essential for nesting (Department of Climate Change, Energy, the Environment and Water, 2023b).</p> <p>According to Conservation Advice (Department of Climate Change, Energy, the Environment and Water, 2023b), any known or likely habitat is critical to the subspecies survival and should not be cleared, fragmented, or degraded. The Brown Treecreeper is confirmed to occur in the western half of the Project Site based on consistent records in remnant roadside vegetation. It may also be present throughout adjoining woodland areas along the transport route, where scattered patches or roadside vegetation could serve as permanent territories or dispersal corridors. Based on the above, all woodland areas should be considered critical habitat. The extent of proposed removal of patches of native vegetation (0.335 hectare and 21 large trees within the wind farm site and approximately 0.531 hectare across multiple small roadside locations along the Transport Route) is a net loss of critical habitat. However, the small extent of removal, especially of individual patches, and no removal of large continuous areas, is considered unlikely to represent a meaningful adverse impact to critical habitat.</p> <p>To mitigate lost habitat, the Environmental Management Plan includes measures to enhance the quality of remaining habitat. Removed trees can be placed in nearby patches of suitable habitat to enhance foraging opportunities (Department of Climate Change, Energy, the Environment and Water, 2023b). Revegetation within the construction zone is advised post-construction to increase size and linkages between habitats. Gaps in habitat should be revegetated to be less than 100 m between canopies, to avoid significant impacts from threats such as habitat</p> | Unlikely |

| Species | Criteria | Response | Significant impact likelihood |
|---|---|--|-------------------------------|
| | | fragmentation (Department of Climate Change, Energy, the Environment and Water, 2023b). | |
| | Disrupt the breeding cycle of an important population | The proposed removal of potential breeding habitat does not reduce any woodland areas to such an extent as to limit their capacity to contain breeding territories (NSW Office of Environment and Heritage, 2024). Construction activities may cause temporary disruptions to the breeding cycle of populations that utilise this habitat. Additionally, increased traffic during construction could result in short-term disturbances to breeding activity. However, these impacts are expected to be temporary and unlikely to have a significant impact on overall breeding success | Unlikely |
| | Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline | The proposed removal of potentially suitable breeding habitat is limited to a few small gaps in the vegetation. Such minimal impacts are unlikely to increase patch isolation or degrade habitat to a level that would lead to the subspecies decline. | Unlikely |
| | Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat | The site currently hosts invasive species such as foxes and feral cats, which directly predate on Brown Treecreeper (Department of Climate Change, Energy, the Environment and Water, 2023b). The area also contains rabbits that may compete for resources (Department of Climate Change, Energy, the Environment and Water, 2023b). The proposed development is unlikely to increase the populations of these pest species and is unlikely to introduce any new pests that will impact the Brown Treecreeper. | Unlikely |
| | Introduce disease that may cause the species to decline, or | The proposal will not engage in any activities likely to introduce disease harmful to this species. The Project will implement a Biosecurity Management Plan to control the spread and proliferation of invasive species and disease. | Unlikely |
| | Interfere substantially with the recovery of the species. | No recovery plan is in place for the subspecies, though the impacts of the development are not likely to lead to significantly increasing the known threats to the subspecies (Department of Climate Change, Energy, the Environment and Water, 2023b). | Unlikely |
| South-eastern Hooded Robin (south-eastern) | Lead to a long-term decrease in the size of a population of a species | The Hooded Robin was only recorded once as a single individual during the Black Falcon roaming surveys in 2023, suggesting it is rare at the Project Site. The site may offer breeding and foraging opportunities, but overall, the habitat is considered suboptimal. Moreover, the Hooded Robin is unlikely to fly at RSA height, as it typically remains at or near ground level (Boles, 2020). | Unlikely |

| Species | Criteria | Response | Significant impact likelihood |
|--|---|---|-------------------------------|
| (Endangered) | | A significant impact leading to a decline in its population is therefore unlikely. | |
| | Reduce the area of occupancy of the species | Overall, there is 0.866 hectare of potentially suitable habitat to be impacted in small, dispersed fragments, mostly on roadside vegetation. Breeding territories are known to be as small as 2.9 hectares (Montague-Drake, Lindenmayer, & Cunningham, 2009) and as large as over 30 hectare (Debus S. J., 2013). In fragmented farmland, the species tend to use large > 10 hectare breeding territories (Watson, Billerman, & Lovette, 2000). None of the potentially suitable habitats to be impacted are to be cleared to such an extent to significantly reduce the area of occupancy of the subspecies. | Unlikely |
| | Fragment an existing population into two or more populations | The extent of removal is unlikely to fragment the local population into two or more, as impacts consist of small breaks. The size of these gaps in vegetation are unlikely to restrict movement or dispersal between habitat patches (Department of Climate Change, Energy, the Environment and Water, 2023g) Revegetation within the construction zone will occur post-construction to enhance and link habitats, which will reduce the gaps between habitats further. | Unlikely |
| Adversely affect habitat critical to the survival of a species | Habitat critical to the survival of the Hooded Robin (south-eastern) includes areas that have relatively undisturbed grassy woodland with relatively open native understorey. It requires a structurally diverse habitat, with mature eucalypts, saplings, shrubs, and moderately tall native grasses. Large living, dead trees, and stumps are essential for roosting and nesting sites and foraging, with fallen timber also providing essential habitat (Department of Climate Change, Energy, the Environment and Water, 2023g) . Any known or likely habitat should be considered critical to the survival of the subspecies (Department of Climate Change, Energy, the Environment and Water, 2023g). Habitats critical for survival should not be cleared, fragmented or degraded according to Conservation Advice (Department of Climate Change, Energy, the Environment and Water, 2023g). Within the Project Area, this habitat persists along roadsides and small patches of woodland. Based on the above, the habitat identified in the Project Area should be considered critical habitat. The extent of proposed removal (0.866 hectare of native vegetation, including 21 large trees in patches) represents a net loss of habitat that is, at least in part, critical to the species. However, the removal will generally be spread out across the Project Area, with no significant removal of large continuous areas or linking habitats. | Unlikely | |

| Species | Criteria | Response | Significant impact likelihood |
|---------|---|---|-------------------------------|
| | | To mitigate lost habitat, the Environmental Management Plan includes measures to enhance the quality of remaining habitat. Removed trees can be placed in nearby patches of suitable habitat to enhance foraging opportunities (Department of Climate Change, Energy, the Environment and Water, 2023g). Revegetation within the construction zone is advised post-construction to increase size and linkages between habitats. Gaps in habitat should be revegetated to be less than 100 m between canopies, to avoid significant impacts from threats such as habitat fragmentation (Department of Climate Change, Energy, the Environment and Water, 2023g). | |
| | Disrupt the breeding cycle of a population | The potentially suitable habitat is largely being retained, with only 0.866 hectare of native vegetation patches to be removed in small, dispersed fragments, mostly on roadside vegetation. In fragmented farmland, the species tend to use large > 10 hectare breeding territories (Watson, Billerman, & Lovette, 2000). None of patches that meet this size criteria will be impacted to such an extent as to no longer be 10 hectare in size. Construction activities may cause temporary disruptions to the breeding cycle of populations that utilise the area. Additionally, increased traffic during construction could result in short-term disturbances to breeding activity. However, these impacts are expected to be temporary and unlikely to have a significant impact on overall breeding success. | Unlikely |
| | Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline | The proposed removal of potentially suitable breeding habitat is limited to a few small gaps in the vegetation. Such minimal impacts are unlikely to increase patch isolation or degrade habitat to a level that would lead to the subspecies decline. | Unlikely |
| | Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the critically endangered or endangered species' habitat | The site currently hosts invasive species such as foxes and feral cats, that directly predate on Hooded Robin, and the proposed action is unlikely to increase their abundance or bring any new invasive species. | Unlikely |
| | Introduce disease that may cause the species to decline, or | The proposed action is unlikely to introduce disease harmful for the Hooded Robin or its habitat. | Unlikely |
| | Interfere with the recovery of the species. | No recovery plan is in place for the subspecies, though the impacts of the development are not likely to lead to significantly increasing the known threats to | Unlikely |

| Species | Criteria | Response | Significant impact likelihood |
|---|--|--|-------------------------------|
| | | the subspecies (Department of Climate Change, Energy, the Environment and Water, 2023g). | |
| Corben's Long-eared Bat (Vulnerable) | Lead to a long-term decrease in the size of an important population of a species | <p>This species is not confirmed to occur on site, and the site lies outside of its known range according to the Australasian Bat Society's BatMap (Australasian Bat Society, 2023). Due to the proximity to the species' known range, the species has the potential to occur in the Project Site but it is considered unlikely that an important population would occur at the site. Assuming presence, removal of native vegetation has been minimised to approximately 0.335 hectare within the wind farm site and 0.531 hectares from the transport route. This level of clearance is not expected to lead to a decrease in the size of any important population and any impacts are expected to be localised and temporary.</p> <p>Furthermore, turbines have been located within agricultural land, away from native vegetation patches across the study area, and the species prefers to commute and forage in close proximity to vegetation (Gonsalves et al 2024). The species is considered at low risk of collision given the minimum blade tip height of 50 metres at NMEP (see Sections 3.1.2 and 4.2.1).</p> | Unlikely |
| | Reduce the area of occupancy of an important population | This species is not confirmed to occur on site, and the site lies outside of its known range. Assuming presence, removal of native vegetation patches has been minimised to approximately 0.335 hectares within the wind farm site and 0.531 hectares from the transport route. This level of clearance is not expected to reduce this species area of occupancy to any meaningful degree. | Unlikely |
| | Fragment an existing important population into two or more populations | If present, the species prefers to commute and forage within vegetation (Gonsalves et al 2024). Given the siting of wind farm infrastructure predominantly in open paddocks, away from vegetated road reserves, and with minor loss of vegetation, it is not expected that a population in the area would be impacted through fragmentation. | Unlikely |
| | Adversely affect habitat critical to the survival of a species | <p>According to the Conservation Advice for this species (Threatened Species Scientific Committee, 2015), in Victoria most records are from mallee <i>Eucalyptus gracilis</i>, Buloke and Black Box woodlands, while old-growth vegetation is thought to be a critical habitat component. Removal of native vegetation patches has been minimised to approximately 0.335 hectare of largely Mallee Road reserves, and a total of 21 large trees.</p> <p>It is not anticipated that the relatively small degree of impacted habitat represents habitat critical to the survival of this species.</p> | Unlikely |

| Species | Criteria | Response | Significant impact likelihood |
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| | Disrupt the breeding cycle of an important population | Hollow bearing or trees with fissures, crevices etc. are important breeding features for the species. It is not anticipated that the relatively small degree of impacted habitat would disrupt the breeding cycle of any important population. | Unlikely |
| | Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline | The small loss of suitable vegetation due to the proposal is not anticipated to lead to the decline of the species. | Unlikely |
| | Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat | The proposal will not result in any invasive species being introduced which may be harmful to this species. The Project will implement a Biosecurity Management Plan to control the spread and proliferation of invasive species and disease. | Unlikely |
| | Introduce disease that may cause the species to decline, or | The proposal will not engage in any activities likely to introduce disease harmful to this species. The Project will implement a Biosecurity Management Plan to control the spread and proliferation of invasive species and disease. | Unlikely |
| | Interfere substantially with the recovery of the species. | No recovery plan is in place for the species, but the proposal with its small degree of habitat loss and relatively small number of turbines is not anticipated to significantly increase the known threats to the species. | Unlikely |
| Overall assessment of likelihood of significant impact | | | Unlikely |

Source: Normanville Energy Park – Assessment Documentation – Ecology Scope (Nature Advisory, 2025b)

8.3.2 Other listed threatened species

As outlined in the Assessment Scope in **Appendix 1**, the Project must assess the following other listed threatened species against the relevant listing status (being vulnerable, endangered, critically endangered and/or migratory species) of the *EPBC Act Significant Impact Guidelines 1.1 – Matters of National Environmental Significance* (Department of the Environment, 2013).

- Southern Whiteface
- Australasian Bittern
- Sharp-tailed Sandpiper
- Curlew Sandpiper
- Grey Falcon
- Painted Honeyeater
- Black-tailed Godwit
- Major Mitchell's Cockatoo - eastern
- South-eastern Hooded Robin
- Plains-wanderer
- Regent Parrot - eastern
- Australian Painted Snipe
- Diamond Firetail
- Common Greenshank.

None of these species have been recorded within the Project Area, including along the Transport Route, but are considered due to records in the surrounding area, the broader region, and/or because the Project Area falls within (or close) to the known or modelled distribution of the species (Nature Advisory, 2025b).

Table 8-4: Significant Impact Assessment for other listed threatened species

| Species | Significant impact criterion | Assessment | Significant impact likelihood |
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| Migratory shorebird species Curlew Sandpiper (Endangered), Black-tailed Godwit (Endangered), Common Greenshank (Endangered), Sharp-tailed Sandpiper (Vulnerable), Common Sandpiper, Pectoral Sandpiper, Ruff, Red-necked Stint, Little Curlew, Marsh Sandpiper, and Double-banded Plover. | Substantially modify (including by fragmenting, altering fire regimes, altering nutrient cycles or altering hydrological cycles), destroy or isolate an area of important habitat for a migratory species (for non-threatened migratory species only) | <p>All of these species are East Asian–Australasian Flyway (EAAF) visitors that typically arrive in Australia between spring to summer, except for the Double-banded Plover, which breeds in New Zealand and migrates west to Australia, where it is mostly present during autumn and winter.</p> <p>The Project Area although nearby wetlands that are known, likely or potential to support non-breeding numbers of these species (Ramsar Kerang wetlands), hold no suitable wetlands within its boundaries (i.e., no rivers, creeks or DEECA mapped wetlands). Therefore, the Project will not substantially modify, destroy or isolate an area of important habitat for a migratory species.</p> | Unlikely |
| | Result in an invasive species that is harmful to the migratory species becoming established in an area of important habitat for the migratory species (for non-threatened migratory species only) | The site currently hosts invasive species such as foxes and feral cats, that directly predate on birds, and the proposed action is unlikely to increase their abundance or bring any new invasive species of fauna or flora. | Unlikely |
| | Seriously disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of a migratory species (for non-threatened migratory species only) | These species do not breed in Australia. Further, the Project Site does not provide suitable habitat for regular feeding or resting for any of these migratory species. Although the Kerang Wetlands is located a few kilometres from the Project boundary, migration is not expected to be seriously disrupted, particularly given the small scale of the wind farm and the absence of important foraging or roosting habitat within the development area. | Unlikely |
| | Lead to a long-term decrease in the size of an important population of a species (for vulnerable species); or Lead to a long-term decrease in the size of a population of a | <p>No habitat loss or disturbance that can interrupt or prevent feeding will occur as no suitable wetlands lies within the Project boundaries. The only concern is direct mortality through collision (Department of Environment and Energy, 2017; Department of the Environment, 2015).</p> <p>Local movements are not expected to pose a significant collision risk as waterbirds typically use waterway corridors as flyways when travelling shorter distances. The main waterways in the area are the Loddon River and its anabranches, located more than 4 kilometres to the east, and the Avoca River, about 3 kilometres to the</p> | Unlikely |

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| | <p>species (for endangered species)</p> | <p>northwest, with all other wetlands where migratory species have been recorded situated outside the Project boundaries. Due to the lack of large waterbodies within several kilometres of the site, and the distance of the site from the main waterway movement corridors, regular local movements of waterbirds, including threatened and non-threatened migratory shorebirds, over the site in important numbers are unlikely.</p> <p>There is potential for flights across the Project area during long distance movements, however these flights tend to be at heights of over 500 metres for most shorebirds according to a literature review by Biota Environmental Services (2018) for a wind farm facility in Port Headland WA. The proposed maximum turbine blade tip height of 280m, falls below the average flight height for shorebirds.</p> <p>There are no mortality records by Nature Advisory of migratory shorebirds in any operating wind farm in Australia to date (NA unpublished data), or in an extensive study by Symbolix (2020) across Victorian Wind Farms, suggesting this particular group of species shows avoidance to wind turbines or flies above them.</p> <p>Seasonal movements to Kerang wetlands, nearby the Project Site, may result in collision mortalities, but due to the small size of the wind farm (17 turbines), its contribution to cumulative impacts is expected to be relatively low.</p> <p>A response strategy to any collisions involving migratory species will be incorporated into the Bird and Bat Adaptive Management Plan, using a group-specific strategy with hierarchical impact triggers, investigations, and proportional mitigation actions to address impacts that could lead to long-term population declines. With this in place, it is unlikely that the NMEP would result in a significant impact.</p> | |
| | <p>Reduce the area of occupancy of an important population (for vulnerable species); or Reduce the area of occupancy of the species (for endangered species)</p> | <p>There are no suitable wetlands within the Project Site (i.e., no rivers, creeks, or DEECA-mapped wetlands); therefore, activities during construction, operation or decommissioning will not adversely affect habitats that will lead to a reduction on the area of occupancy for any of these species.</p> | <p>Unlikely</p> |
| | <p>Fragment an existing important population into two or more populations (for vulnerable species); or Fragment an existing population into two or more populations (for endangered species)</p> | <p>The NMEP will not fragment an existing population of any of these species, as Project activities will not affect wetland habitats located outside the Project boundaries.</p> | <p>Unlikely</p> |

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| | Adversely affect habitat critical to the survival of a species (for vulnerable or endangered species) | There are no suitable wetlands within the Project Site (i.e., no rivers, creeks, or DEECA-mapped wetlands); therefore, activities during construction, operation or decommissioning will not adversely affect habitat for any of these species. | Unlikely |
| | Disrupt the breeding cycle of an important population (for vulnerable species); or Disrupt the breeding cycle of a population (for endangered species) | The Project Site falls within the non-breeding range of these species. The Project will not disrupt the breeding cycle of these species. | Unlikely |
| | Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline (for vulnerable or endangered species) | There are no suitable wetlands within the Project Site (i.e., no rivers, creeks, or DEECA-mapped wetlands); therefore, activities during construction, operation or decommissioning will not modify, destroy, remove or isolate or impact the habitats of these species. | Unlikely |
| | Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable or endangered species' habitat | The site currently hosts invasive species such as foxes and feral cats, that may directly predate on these species, and the proposed action is unlikely to increase their abundance or bring any new invasive species. | Unlikely |
| | Introduce disease that may cause the species to decline (for vulnerable or endangered species), or | The proposed action is unlikely to introduce disease harmful for these species or their habitats. | Unlikely |
| | Interfere substantially with the recovery of the species (for vulnerable or endangered species) | No species-specific recovery plans are in place for any of these species. In accordance with the Wildlife Conservation Plan for Migratory Shorebirds (Department of the Environment, 2015) actions for the protection, conservation and management of migratory shorebirds should ensure all important areas in Australia continue to be considered in development assessment processes. This report considers the nearby Kerang Wetlands and all associated species — known, likely, or potential — that may fly over the Project Site. The lack of suitable habitat and the paucity of records within the Project boundaries make it unlikely that the Project will significantly increase the known threats to this group of species. | Unlikely |

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| Fork-tailed Swift (Migratory) | <p>Substantially modify (including by fragmenting, altering fire regimes, altering nutrient cycles or altering hydrological cycles), destroy or isolate an area of important habitat for a migratory species.</p> | <p>The species is widespread and not bound to a particular habitat in Australia, as long as there are aerial insects. The area impacted by the Project is negligible in terms of habitat for Fork-tailed Swift due to its widespread but scattered occurrence in Australia.</p> | <p>Unlikely</p> |
| | <p>Result in an invasive species that is harmful to the migratory species becoming established in an area of important habitat for the migratory species.</p> | <p>The proposed action is unlikely to introduce any invasive species that are harmful to Fork-tailed Swift.</p> | <p>Unlikely</p> |
| | <p>Seriously disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of a migratory species.</p> | <p>The species has not been recorded in the Project Area to date but has potential to occur in the Project Area sparsely in flocks over the summer months. On this basis, an ecologically significant proportion of the population is unlikely to be present.</p> | <p>Unlikely</p> |
| Wetland Associated non-migratory species Australasian Bittern, Australian Painted Snipe (both Endangered) | <p>Lead to a long-term decrease in the size of a population of a species</p> | <p>The population of Australasian Bittern and Australian Painted Snipe are estimated at approximately 1,300 and 340 mature individuals, respectively (Garnett & Baker, 2023). There are only a few historical records of the Australian Bittern from the search region around the Project Area, but none within its boundaries as there is no wetland habitat. The Project is not expected to pose a significant collision risk, as these species are very closely tied to wetlands and likely to move along or around waterways during local movements.</p> <p>Despite the sedentary behaviour of the Australasian Bittern, the species is known to travel long distances (Garnett & Baker, 2023), and some of these movements can be irruptive as a response to wet years or exceptionally dry conditions (Kushlan & Hancock, 2005). The Australian Painted Snipe is largely nomadic and occasional records from remote areas suggest long-distance movements (del Hoyo, Collar, & Kirwan, 2020). Both species are ground-dwelling wetland birds that generally fly at low altitudes. However, due to limited empirical data on their flight heights during longer-distance movements, the potential risk of collision at wind farms within their distribution ranges cannot be ruled out. These species will be covered in the Bird and Bat Adaptive Management Plan under the general framework of response actions to impact triggers for listed species to address potential impacts that could contribute to long-term population declines.</p> | <p>Unlikely</p> |

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| | | A significant impact leading to a decline in their populations is unlikely. | |
| | Reduce the area of occupancy of the species | There are no suitable wetlands within the Project Site (i.e., no rivers, creeks, swamps, inundated grasslands, or DEECA-mapped wetlands); therefore, activities during construction, operation or decommissioning will not adversely affect habitat that will lead to a reduction on the area of occupancy for any of these species. | Unlikely |
| | Fragment an existing population into two or more populations | The NMEP will not fragment an existing population of these species, as Project activities will not affect wetland habitats located outside the Project boundaries. | Unlikely |
| | Adversely affect habitat critical to the survival of a species | There are no suitable wetlands within the Project Site (i.e., no rivers, creeks, swamps, inundated grasslands, or DEECA-mapped wetlands); therefore, activities during construction, operation or decommissioning will not adversely affect the habitats of these species. | Unlikely |
| | Disrupt the breeding cycle of a population | The Project will not disrupt the breeding cycle of these species, as activities will not affect wetland habitats located outside the Project boundaries. | Unlikely |
| | Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline | There are no suitable wetlands within the Project Site (i.e., no rivers, creeks, swamps, inundated grasslands, or DEECA-mapped wetlands); therefore, activities during construction, operation or decommissioning will not modify, destroy, remove or isolate or impact the habitats of these species. | Unlikely |
| | Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the critically endangered or endangered species' habitat | The site currently hosts invasive species such as foxes and feral cats, that may directly predate on these species, and the proposed action is unlikely to increase their abundance or bring any new invasive species. | Unlikely |
| | Introduce disease that may cause the species to decline, or | The proposed action is unlikely to introduce disease harmful for these species or their habitats. | Unlikely |
| | Interfere with the recovery of the species. | The Project is unlikely to interfere with the recovery of these species, as no suitable habitats occur within the Project Area and it is not expected to significantly increase known threats to these species or their habitats (Department of Climate Change, Energy, the Environment and Water, 2022a; Department of Climate Change, Energy, the Environment and Water, 2022b). | Unlikely |

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| Plains-wanderer (Critically Endangered) | Lead to a long-term decrease in the size of a population of a species | <p>The population of Plains-wanderer is estimated at approximately 250 mature individuals (Garnett & Baker, 2023). There are no records of the species within the Project Area, and only one historical record from 2011 located west of the Avoca River, in an area of chenopod grassland over 8 kilometres from the Project boundary – a type of habitat where the species may occasionally occur (Department of the Environment, 2016). The Plains-wanderer generally inhabits native short-grass grasslands on hard, red-brown clay soils, preferring sparse, open vegetation and avoiding pastureland with introduced species, dense grass cover, or large expanses of bare ground (Department of the Environment, 2016; Winker, Billerman, & Lovette, 2020).</p> <p>The Project is unlikely to pose a significant risk to the species due to the absence of suitable habitat. The Project Area is mostly modified farmland, with wheat crops, exotic pastures, and occasional native tussocks, offering only poor-quality grassland surrogates. Sparse native grasslands required by the species are not present on site or immediate surroundings.</p> <p>A significant impact leading to a decline in its population is unlikely.</p> | Unlikely |
| | Reduce the area of occupancy of the species | <p>The Project Area is largely transformed, with observed wheat crops, exotic pastures, introduced species and occasional native tussocks, offering only poor-quality substitutes for the sparse native grasslands required by the Plains-wanderer.</p> <p>The Plains-wanderer distribution significantly overlaps with the critically endangered Natural Grasslands of the Murray Valley Plains (Department of the Environment, 2016). Approximately 1 hectare of this ecological community was recorded only along the Transport Route, largely as isolated small sections of roadside vegetation. About 3% of this area (0.026 hectares) is proposed for removal at two locations. This removal is minimal, with no continuous patch larger than 0.6 hectares. Within the wind farm Project Area, the community is absent, as no grass-dominated patches met condition thresholds due to small size, high weed cover, and low native species richness. Therefore, it is unlikely that the Plains-wanderer occupies the area, and the species is unlikely to be directly affected by vegetation removal or indirectly displaced by the presence of large structures such as turbines (BirdLife Australia, 2017; Department of the Environment, 2016).</p> <p>The Project is unlikely to reduce the area of occupancy of the species.</p> | Unlikely |
| | Fragment an existing population into two or more populations | <p>The NMEP will not fragment existing populations of these species, as Project activities will neither structurally divide habitat nor are they likely to disrupt functional connectivity.</p> | Unlikely |
| | Adversely affect habitat critical to the survival of a species | <p>According to the National Recovery Plan for this species (Department of the Environment, 2016), habitat critical to survival includes areas on its broad distribution where the species is likely to occur, as well as any newly discovered</p> | Unlikely |

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| | | locations. Although the Project Area falls within the Plains-wanderer range, where its distribution is highly patchy, the absence of minimum suitable sparse grassland (i.e., patches of at least 50 ha; (Threatened Species Scientific Committee, 2014)) makes it unlikely that the area provides the specific habitat conditions required by the species. It is unlikely that the Project will adversely affect habitat critical to the survival of this species. | |
| | Disrupt the breeding cycle of a population | Given the absence of suitable breeding habitat (BirdLife Australia, 2017; Department of the Environment, 2016), the Project is unlikely to interfere with the breeding cycle of the species. | Unlikely |
| | Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline | The small loss of vegetation from the proposal is unlikely to contribute to the decline of the species, as the Project area is already highly fragmented and modified, and Project activities will not significantly add to the existing farmland disturbance. | Unlikely |
| | Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the critically endangered or endangered species' habitat | The proposal will not result in any invasive species being introduced which may be harmful to this species. The Project will implement Construction Environmental Management Plan (CEMP; MM- 9), which will include a Biosecurity Management Plan to control the spread and proliferation of invasive species and disease. | Unlikely |
| | Introduce disease that may cause the species to decline, or | The proposal will not engage in any activities likely to introduce disease harmful to this species. The Project will implement Construction Environmental Management Plan (CEMP; MM- 9), which will include a Biosecurity Management Plan to control the spread and proliferation of invasive species and disease. | Unlikely |
| | Interfere with the recovery of the species. | The Project is unlikely to impede the Plains-wanderer recovery, as it is not expected to significantly increase known threats to the species or its habitat (Department of the Environment, 2016). | Unlikely |
| Southern Whiteface, Diamond Firetail (both Vulnerable) | Lead to a long-term decrease in the size of an important population of a species | The total populations of Southern Whiteface and Diamond Firetail are estimated at approximately 500,000 and 136,000 mature individuals, respectively (Garnett & Baker, 2023). While detailed information on their home range sizes is lacking, recorded densities reach up to 1.2–1.4 birds/hectare for Diamond Firetail (Department of the Environment and Heritage, 2008; Department of Climate Change, Energy, the Environment and Water, 2023e) and about 1.6 birds/hectare for Southern Whiteface (Department of Climate Change, Energy, the Environment and Water, 2023f). | Unlikely |

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| | <p>Native vegetation clearance at the wind farm site has been minimised to 0.335 hectare and 21 large trees, with an additional 0.531 hectare of treed roadside vegetation along the transport route. Even if conservatively assumed to be habitat for either species, the area affected would be expected to impact fewer than 1–2 individuals, and possibly none as the habitat is scattered and degraded within the farmland landscape. Moreover, the clearance will be spread across multiple sites, with no single patch of potential habitat significantly reduced.</p> <p>Neither species was recorded within the Project Area. Habitat for Diamond Firetail is considered suboptimal, with the species likely to occur only sporadically, most likely foraging when native grasses are seeding or using roadside vegetation as movement corridors. Southern Whiteface may occur occasionally in low numbers due to nearby records along neighbouring woodland reserves. On-ground survey data suggest that the area does not support important populations of either species.</p> <p>Additionally, both species typically remain close to the ground, below the canopy level, and are therefore not considered susceptible to collisions, further lowering the overall risk of Project impacts.</p> <p>A significant impact leading to a decline in an important population is unlikely.</p> | |
| Reduce the area of occupancy of an important population | <p>The area of occupancy, would be reduced by up to 0.866 hectare of potential suitable breeding habitat and the removal of 21 large trees, spread across the Project footprint and transport route. As the proposed clearance represents a minimal reduction of habitat that is likely unsuitable to support regular numbers of any of these species, it is unlikely to affect their ability to persist in the area or result in a measurable reduction in the area of occupancy of any local populations.</p> | Unlikely |
| Fragment an existing important population into two or more populations | <p>The extent of removal is unlikely to fragment the local population, as impacts are limited to small breaks in vegetation, mostly along roadsides for access points and swept paths. These gaps are generally only a few metres wide, and these species are capable of crossing small openings, as their habitats naturally include open or semi-open areas (Department of Climate Change, Energy, the Environment and Water, 2023f; Department of Climate Change, Energy, the Environment and Water, 2023c).</p> <p>Revegetation of the construction zone post-construction is recommended to enhance connectivity and further reduce habitat gaps.</p> | Unlikely |
| Adversely affect habitat critical to the survival of a species | <p>Relevant habitat critical to the survival of the Diamond Firetail includes areas of Eucalypt, acacia or casuarina woodlands, open forests and other lightly timbered habitats; low tree density, few large logs, and little cover but high grass cover for foraging, roosting and breeding (Department of Climate Change, Energy, the Environment and Water, 2023e). Critical habitat to the survival of the Southern Whiteface includes relatively undisturbed open woodlands and shrublands with an understorey of grasses or shrubs, or both; habitat with low tree densities and an</p> | Unlikely |

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| | <p>herbaceous understory litter cover which provides essential foraging habitat; living and dead trees with hollows and crevices which are essential for roosting and nesting (Department of Climate Change, Energy, the Environment and Water, 2023f).</p> <p>According to Conservation Advice (Department of Climate Change, Energy, the Environment and Water, 2023f; Department of Climate Change, Energy, the Environment and Water, 2023c), any known or likely habitat is critical to the species survival and should not be cleared, fragmented, or degraded. None of these species have been recorded on site but are likely to use the area in low numbers and irregularly. Conservatively, the extent of proposed removal (0.866 hectare of potentially suitable habitat and 21 large trees in patches) can be considered as a potential net loss of critical habitat. However, the removal occurrences will generally be spread out across the Project Area, with no significant removal of large continuous areas.</p> <p>To mitigate net loss of potential habitat, we advise revegetation post-construction to increase size and linkages between habitats.</p> | |
| Disrupt the breeding cycle of an important population | <p>None of these species have been recorded within the Project Area, and it is unlikely that the site supports large numbers or important breeding habitat. The proposed sparse removal of potential habitat is not expected to reduce habitat to an extent that would affect breeding capacity within the Project Area. Construction activities and increased traffic may cause short-term, temporary disturbances if these species utilise the area, but are unlikely to have a significant impact on overall breeding success.</p> | Unlikely |
| Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline | <p>Habitat quality is considered suboptimal and supported by the lack of records. The proposed removal of potentially suitable habitat is limited to a few small gaps in the vegetation. Such minimal impacts are unlikely to increase patch isolation or degrade habitat to a level that would lead to the subspecies decline.</p> | Unlikely |
| Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat | <p>The site currently hosts invasive species such as foxes and feral cats, which directly predate on native bird species and other fauna. Rabbits are also present in the area and may compete for resources or degrade the habitat, particularly for the Diamond Firetail (Department of Climate Change, Energy, the Environment and Water, 2023e). The proposed development is unlikely to increase the populations of these pest species and is unlikely to introduce any new pests that will impact the species.</p> | Unlikely |
| Introduce disease that may cause the species to decline, or | <p>The proposed action is unlikely to introduce a disease harmful to the species or their habitats.</p> | Unlikely |

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| | Interfere substantially with the recovery of the species. | No recovery plan is in place for the subspecies, though the impacts of the development are not likely to lead to significantly increasing the known threats to the species (Department of Climate Change, Energy, the Environment and Water, 2023f; Department of Climate Change, Energy, the Environment and Water, 2023c). | Unlikely |
| Painted Honeyeater (eastern) (Vulnerable) | Lead to a long-term decrease in the size of an important population of a species | The species was not recorded within Project Area or the surrounding region, and there are no historical records nearby. Although the Project Area lies at the edge of the species range, it lacks suitable habitat and known nearby populations, with the closest VBA record located more than 55 kilometres away. It is unlikely that an important population occurs within the Project Area. | Unlikely |
| | Reduce the area of occupancy of an important population | As above. | Unlikely |
| | Fragment an existing important population into two or more populations | As above. | Unlikely |
| | Adversely affect habitat critical to the survival of a species | Given the absence of sightings and critical habitat as defined by the species National Recovery Plan (Department of Agriculture, Water and the Environment, 2021b), the species is unlikely to rely on any type of habitat in the Project Area for its survival. Additionally, due to their highly mobile nature, it is unlikely this species will be affected by removal of habitat or any other construction activities, provided any significant mistletoe infestation is identified and retained. | Unlikely |
| | Disrupt the breeding cycle of an important population | No important population is present, as per above responses. Furthermore, the species breeding biology is also closely tied with Mistletoe availability. Therefore, provided any significant mistletoe infestation is identified and retained, the breeding cycle of individuals that may be present is unlikely to be impacted. | Unlikely |
| | Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline | As above. | Unlikely |
| | Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat | The site currently hosts invasive species such as foxes and feral cats, that can directly predate on Painted Honeyeater, and the proposed action is unlikely to increase their abundance or bring any new species. | Unlikely |

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| | Introduce disease that may cause the species to decline, or | The proposed action is unlikely to introduce disease harmful for Painted Honeyeater or its habitat. | Unlikely |
| | Interfere substantially with the recovery of the species. | Based on the above points, the Project is unlikely to interfere with the recovery of the species. | Unlikely |
| Regent Parrot (Vulnerable) | Lead to a long-term decrease in the size of an important population of a species | The species was not recorded within the Wind Farm Project Area, the Transport Route, or the surrounding region, and there are no historical records nearby (the closest VBA record is approximately 10 kilometres north of the Project). Habitat critical to the survival of the eastern Regent Parrot contains all known sites for nesting, food resources, water, shelter, essential travel routes, dispersal, and buffer areas, as defined in the species National Recovery Plan (Baker-Gabb & Hurley, 2011). The Project Area falls outside these areas and provides no suitable habitat. The Project is unlikely to lead to a decrease in the size of any important population. | Unlikely |
| | Reduce the area of occupancy of an important population | As above. | Unlikely |
| | Fragment an existing important population into two or more populations | As above. | Unlikely |
| | Adversely affect habitat critical to the survival of a species | As above. | Unlikely |
| | Disrupt the breeding cycle of an important population | The Project falls outside the know breeding range of the species (Baker-Gabb & Hurley, 2011). | Unlikely |
| | Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline | As above. | Unlikely |
| | Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat | The site currently hosts invasive species such as foxes and feral cats, and the proposed action is unlikely to increase their abundance or bring any new species. | Unlikely |

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| | Introduce disease that may cause the species to decline, or | The proposed action is unlikely to introduce disease harmful for Regent Parrot or its habitat. | Unlikely |
| | Interfere substantially with the recovery of the species. | Based on the above points, the Project is unlikely to interfere with the recovery of the species. | Unlikely |
| Grey Falcon (Vulnerable) | Lead to a long-term decrease in the size of an important population of a species | <p>The Project is located outside the Grey Falcon core habitat and on the edge of its range in northern Victoria, where records are extremely rare (Debus S. , 2023; Department of Sustainability and Environment, 2003).</p> <p>The closest VBA record dates to 1997, located in wetland habitat approximately 12.5 kilometres north of the Project Area. The Grey Falcon is often associated with wetlands and watercourses (Debus S. , 2023). This observation is most likely the result of nomadic dispersal behaviour or a long-range exploratory movement triggered by unfavourable environmental conditions (Debus S. , 2023). Given the paucity of records near the Project Area, it is unlikely that the site supports an important population of the species.</p> <p>The Project is unlikely to lead to a decrease in the size of any important population.</p> | Unlikely |
| | Reduce the area of occupancy of an important population | <p>As above. Further, within the Project region, the species avoids “mallee” eucalypt scrub, cultivated fields, and wheat crops, instead favouring uncultivated open fields with occasional large trees (Debus S. , 2023).</p> <p>The Project is unlikely to reduce the area of occupancy of the species.</p> | Unlikely |
| | Fragment an existing important population into two or more populations | As above. | Unlikely |
| | Adversely affect habitat critical to the survival of a species | As above. | Unlikely |
| | Disrupt the breeding cycle of an important population | No nests had been located in Victoria in recent years, so the area is considered to be out of the species breeding range. | Unlikely |
| | Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline | As above. | Unlikely |

| | | | |
|---|---|--|----------|
| | Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat | The site currently hosts invasive species such as foxes and feral cats (Schoenjahn, Pavey, & Walter, 2020), and the proposed action is unlikely to increase their abundance or bring any new species. | Unlikely |
| | Introduce disease that may cause the species to decline, or | The proposed action is unlikely to introduce disease harmful for Grey Falcon. | Unlikely |
| | Interfere substantially with the recovery of the species. | Based on the above points, the Project is unlikely to interfere with the recovery of the species. | Unlikely |
| Major Mitchell's Cockatoo (eastern) (Endangered) | Lead to a long-term decrease in the size of a population of a species | The Project is located outside the core habitat of Major Mitchell's Cockatoo and on the edge of its range in northern Victoria, where records are extremely rare (Rowley & Kirwan, 2023)The scarcity of records in the broader region suggests sightings likely represent vagrant individuals occurring incidentally and in low numbers, with no recent records within 10 kilometres of the Project Site. Despite multiple bird surveys conducted on site, this conspicuous species was not detected, indicating it is not regularly present as part of the local avifauna. | Unlikely |
| | Reduce the area of occupancy of the species | As above. | Unlikely |
| | Fragment an existing population into two or more populations | Although the species is not expected to occur on site, it may utilise the vegetation structure of the Plains Mallee Box woodlands (Department of Climate Change, Energy, the Environment and Water, 2023c). This ecological community, mostly confined to roadside vegetation, may still provide potential connectivity during vagrant or exploratory movements. Approximately 0.068 hectares of this habitat will be removed. This loss is minimal and unlikely to affect functional connectivity across the landscape, as the area is already highly fragmented, and the species is capable of flying over open country. | Unlikely |
| | Adversely affect habitat critical to the survival of a species | As above. | Unlikely |
| | Disrupt the breeding cycle of a population | As above. Furthermore, the species requires large breeding home ranges (approximately 30 kilometres ² ; OEH 2017, as cited in Department of Climate Change, the Environment, Energy and Water (2023c)), and the area has been heavily transformed, lacking suitable woodland patches of that extent. | Unlikely |

| | | | |
|---|---|---|-----------------|
| | Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline | As above. | Unlikely |
| | Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the critically endangered or endangered species' habitat | The site currently hosts invasive species such as foxes and feral cats, and the proposed action is unlikely to increase their abundance or bring any new species. | Unlikely |
| | Introduce disease that may cause the species to decline, or | The proposed action is unlikely to introduce disease harmful for Major Mitchell's Cockatoo. | Unlikely |
| | Interfere with the recovery of the species. | Based on the above points, the Project is unlikely to interfere with the recovery of the species. | Unlikely |
| Overall assessment of likelihood of significant impact | | | Unlikely |

9. Cumulative MNES impacts

Cumulative impacts require a consideration of third party (or proponent) activities alongside the Project. As there is no specific Commonwealth guidance on how to undertake a Cumulative Impact Assessment (CIA) for wind farms, nor scope of particular values to consider for CIA in the scoping document for the Project, a 'fit for purpose' CIA approach has been developed for the Project. The CIA considered proposed (referred under the *Environment Protection, Biodiversity Conservation Act 1999*, *Environment Effects Act 1978* or advertised under the *Planning and Environment Act 1987*), approved, and operating energy developments identified within 25km of the Project Site. The buffer was deemed appropriate as it encompassed the nearby township of Kerang and aligned with methods used for West Winds Warracknabeal Energy Park CIA, prepared as a part of the Warracknabeal EES.

Table 9-1 identifies developments being proposed, under construction or operating within a 25km buffer of the Project. Where information is publicly available for the third party developments, an assessment of the project contribution to cumulative impacts has been undertaken.

Table 9-1 Cumulative projects

| Development | Status | Information available | Location | Assessment |
|---------------------------------|---|---|-----------------------|--|
| Meering West Wind Farm | Planning permit application lodged and process underway | None available. | Adjacent to the south | Potential cumulative impacts due to native vegetation removal – extent unknown. Likely cumulative impacts to avifauna and bats due to turbine collision during operation. |
| Gannawarra Solar Farm (Stage 1) | Operating | Environmental Management Plan (RPS 2016) | Approx. 3 km north | No cumulative impacts expected from 535 ha solar farm. |
| Gannawarra Solar Farm (Stage 2) | Approved | Environmental Management Plan (RPS 2016) | Approx. 3 km north | No cumulative impacts expected from 535 ha solar farm. |
| Koorangie Energy Storage System | Under construction | None available | Approx. 3 km north | Potential minor impacts to native vegetation, unlikely to lead to cumulative impacts. |
| Cannie Wind Farm | Referral submitted – Assessment commenced | Preliminary Ecological Report (ERM, 2024) | 10km north west | Potential cumulative impacts due to native vegetation removal – extent unknown. Potential cumulative impacts to PMBW – extent unknown. Potential cumulative impacts to avifauna due to turbine collision |
| Acciona Kerang Solar Farm | Approved | Gannawarra Shire Planning | Approx. 14 km east | Potential cumulative impact of native vegetation clearance – 1.769 ha native vegetation approved for removal. |

| Development | Status | Information available | Location | Assessment |
|------------------------------|----------|-----------------------|--------------------|---|
| | | Permit P17.020 | | Development does not include wind turbines, so does not contribute to cumulative collision risk |
| Kerang Solar and BESS Hybrid | Approved | None available | Approx. 14 km east | Insufficient information publicly available to assess potential cumulative impacts. Development does not include wind turbines, so does not contribute to cumulative collision risk |

9.1 Construction impacts

Potential cumulative impacts during construction of the Project (including the transport route) could occur as a result of the direct clearing of native vegetation, listed TECs and associated loss of habitat. The Project proposes to remove 0.335ha of native vegetation and 21 large trees within the wind farm and 0.531ha of native vegetation and 5 large trees on the transport route.

The Project's impact to TEC's PMBW, BWRMDDDB and NGMVP were assessed against the Significant Impact Guidelines in **Section 8.2**. This assessment found that impacts to these three listed communities are unlikely to be significant.

Of the third-party projects considered in the CIA, no public information about TEC impacts is currently available, so a qualitative assessment on cumulative impacts to these TEC cannot be made. Given that the Project is a relatively small wind farm with only 17 proposed WTGs, the Project's contribution to TEC cumulative impacts in the region, is expected to be low, representing only a minor increment amongst a portfolio of substantially larger developments.

Cumulative impacts on fauna as a result of additional vegetation loss from future projects are anticipated to be negligible due to the small and widely distributed nature of vegetation removal within the Project Area (Nature Advisory, 2025b).

9.2 Operational impacts

Operational cumulative impacts are predominantly anticipated to arise from wind farms in the study area due to the collision risk they present to avifauna and bats. It is difficult to quantify operational cumulative impacts from other wind farms without the benefit of the targeted surveys that will form their impact assessments.

Notwithstanding, the Project is situated in a landscape highly modified by clearing for agriculture, and therefore interactions with terrestrial fauna are generally anticipated to be lower than in more natural environments.

There is a potential for cumulative operational impacts to EPBC Act listed avifauna and other species (e.g. non-listed waterbirds) which contribute to the ecological character of the Kerang Wetlands Ramsar Site. Due to the low abundance of threatened avifauna detected in the region, the likelihood of collisions leading to significant impacts to these avifauna is considered to be low, and any contributions of the Project to cumulative operational impacts in the region are expected to be minor due to the Project's small relative size.

There is uncertainty in predicting impacts to non-listed waterbird species which contribute to the ecological character of the Ramsar site, and hence uncertainty in predicting potential cumulative

impacts to these species. All approved wind farms within the vicinity of the Project will require BBAMPs to be prepared and implemented including the prescription of impact triggers and adaptive management in the case of collision by threatened species. It is expected that implementation of these Project BBAMPs will ensure that where impacts are of a scale that could contribute to cumulative impacts, including to the Ramsar Site, these will be effectively mitigated through adaptive measures. Each BBAMP will necessarily consider potential impacts and their own contribution to cumulative impact in the order that they are sequenced.

Given that NMEP is a small wind farm relative to other proposed wind farms in the region, with only 17 proposed WTGs, the Project's contribution to cumulative impacts is expected to remain low.

The transport route is not expected to contribute to any cumulative impacts in the operational phase as there is no ongoing operational activities proposed within the transport route.

10. Social and economic impacts

10.1 Demographic profile

The locality of Normanville is located in the Gannawarra Shire Local Government Area (LGA) in the Loddon Mallee region of Victoria. Gannawarra Shire borders New South Wales to the north. The Traditional Owners of land and water in the area are contested and not formally recognised under a Registered Aboriginal Party, the Project area is recognised by the Preliminary Cultural Heritage Assessment (Heritage Insight, 2024) to be located within the Country of the Wemba Wamba. Traditional Owners are represented by a number of groups including the Barapa Aboriginal Corporation, the Wiran Aboriginal Corporation and the Wemba Wamba Aboriginal Corporation (Heritage Insight, 2024).

Due to the small scale of Normanville some data is only available for Gannawarra. **Appendix 6** presents a socio-economic assessment for Normanville and Gannawarra in relation to broader Victorian socioeconomic data.

10.1.1 Population

Normanville locality has a population of 34, while the broader Gannawarra Shire has a population of 10,683 as of 2021. Population trends suggest Gannawarra is expected to experience a negative growth rate of -0.23% between 2031 and 2036. The median age is 51 in Gannawarra, while for Normanville the median age is 24. The majority of the population in Normanville are between 0–44 years, which indicates a young community consisting of families or singles. The average household size in Normanville is 3.5, well above the state average of 2.5, with 40.9% family households and 59.1% single or lone households. In contrast, the average household size in Gannawarra is 2.2, which is below the state average.

Based on the 2021 Census data, Gannawarra Shire recorded a score of 952 on the Index of Relative Socio-Economic Advantage and Disadvantage (IRSAD), which is based on factors such as income, education, and employment. This score is slightly below the national average of 1,000, suggesting that, overall, the Shire has marginally lower levels of socio-economic advantage compared to other parts of Australia.

10.1.2 Employment and income

The median weekly household income in Normanville is \$2,083, significantly higher than the Victorian average of \$1,759. In contrast, Gannawarra Shire reports a lower median income of \$1,071 per week, well below the state average.

Normanville has a very high labour force participation rate of 86.4%, with the unemployment rate recorded at 0%. In contrast, labour force participation in Gannawarra is 50.5%, below the Victorian average of 62.4%. Unemployment in Gannawarra is recorded at 3.6%, below the state average of 5%.

The majority of the labour force in Normanville work in agriculture, forestry and fishing (85%), followed by professional, scientific and technical services (15%). In Gannawarra, agriculture, forestry and fishing is also the largest employment sector (24.8%), followed by education and training (13.5%).

The largest occupational group in Normanville is management (63.6%), followed by professionals (18.2%) and machinery operators and drivers (18.2%), which aligns with agriculture, forestry and fishing being the dominant industry in the area. In Gannawarra, the largest occupational

group is managers (23.1%), followed by technicians and trades workers (14.4%), while in Victoria, the largest group is professionals (23.3%).

10.1.3 Education

A high proportion of the population in Normanville has a bachelor degree or higher (33.3%) or a certificate III or IV (66.6%). In contrast, in Gannawarra only 9.1% have a bachelor degree, with 16.1% having only Year 9 or below. Overall, the population in Normanville has much higher levels of higher educational qualifications than the state average, while Gannawarra has slightly lower levels.

10.1.4 Housing

All occupied dwellings in Normanville are owned outright, compared to 51.3% in Gannawarra, and only 32.2% in Victoria. Considering the age, education and labour force data for Normanville, this indicates are strong and higher socio-economic community compared to Gannawarra.

10.1.5 Social and Economic impacts

The Normanville Energy Park is expected to make a significant and long-lasting positive contribution to the local economy of Normanville and the broader Gannawarra Shire. Over the Project's approximate 30-year lifespan, this includes direct benefits through landholder payments, benefit-sharing initiatives, and community funding programs.

During peak construction, the Project will create up to 60 on-site jobs over a two-year period, along with 2–3 ongoing operational roles. It will provide participating farmers and landholders with a stable, long-term income streams, supporting agricultural diversification and financial resilience.

Most of the financial support will be directed to the local community in Normanville, while construction workers are expected to be based in other parts of the Gannawarra Shire. This will have a positive impact on the community and economy in Gannawarra Shire for the construction period over two years. It is likely that the permanent employees will either reside in Normanville or surrounding towns in Gannawarra Shire.

Economically, the impact of the Project will be positive. It is estimated that the Project will deliver a minimum of \$230,000 annually into the local community through landholder payments, benefit-sharing initiatives and rates payable to the Normanville area and Gannawarra Shire Region. During construction, the increased demand for services such as accommodation, grocery items, food and fuel will provide businesses in Gannawarra Shire with increased incomes and opportunities for growth, as well as work for local trades and other workers.

The ongoing injection of substantial funding into a small geographical area—intensively over a two-year construction period and at a reduced level throughout the approximate 30-year operational period—will create increased prosperity and opportunities for community groups, businesses, schools, and families.

A potential negative impact is that the financial gap between the four participating landholders and other farmers in the region will widen, potentially leading to lack of ability to compete for purchasing of land and stock. Another potential negative impact is the distribution of the community benefits over the lifespan of the Project.

Socially, the Project will generate greater opportunity and community growth in terms of increased investment and financial support for community groups and other initiatives. The financial investment will likely lead to social growth, with community and other groups able to grow and develop. Normanville Energy Park will contribute at least \$50,000 each year toward

community benefit sharing. Community grants, scholarships, investment opportunities and financial incentives will be designed in collaboration with the community to ensure local perspectives and priorities are fully respected.

Concerns will remain around the impact of the Project on property values, although multiple Australian and international studies have been undertaken that indicate wind farms do not negatively impact property prices (NSW Department of Lands report, Urbis report commissioned by the NSW Department of Environment). There are also social concerns around visual impact, where the Project will invite affected residents with a view of wind turbines to participate in a landscaping program to help reduce any visual impact of the turbines.

Further concerns relate to short-term worker accommodation during the construction phase. Normanville and the main towns in the Gannawarra Shire will also be busier during the construction phase, which may cause social impacts for residents through increased demand for services, including parking and goods and services. It is likely that a large percentage of construction workers will be found locally in the region, minimising the concerns. There will also be increased traffic on the road and impacts on the local road network, which will be addressed through a detailed traffic management mitigations in the Project’s CEMP.

10.1.6 Consultation undertaken to date

A Community and Stakeholder Communications Plan (ERM, 2024)(CSCCP) has been developed, outlining the principles and methodology used to build trust, encourage community dialogue and cultivate a partnership and inclusive local involvement with the community.

The Proponent has been engaging with key stakeholders about the Normanville Energy Park since 2019 and with the community since June 2023.

Key stakeholders who may have an interest in the Project have been identified through desktop research and stakeholder mapping of the local community, capturing those in geographical proximity to the Project. The stakeholder identification and analysis are included in section 10 of the CSCCP provided in **Appendix 8**, as summary of the stakeholder groups identified are provided as follows:

Table 10-1: Summary of stakeholders

| Stakeholder category | Stakeholder group |
|--|---|
| Traditional Owners and Indigenous Groups | Language groups: Wamba Wemba (Kerang Northwards) and Barapa Barapa (Kerang southwards) |
| | Wamba Wemba Aboriginal Corporation |
| | Barapa Barapa Wamba Wemba Water for Country Committee |
| | Barapa Land and Water, and Mallee District Aboriginal Services |
| Federal Government | MP: Dr Anne Webster MP, Member for Mallee |
| | Department of Agriculture, Fisheries & Forestry |
| | Department of Climate Change, Energy, Environment & Water |
| | Australian Energy Infrastructure Commissioner (AEIC), (Interim Commissioner) John Sheldon |
| | Australian Energy Market Operator (AEMO): Transmission Company Victoria |
| | Department of Industry, Science & Resources |

| Stakeholder category | Stakeholder group |
|--|---|
| | Department of Infrastructure, Transport, Regional Development, Communications & Arts |
| | Regional Development Australia |
| State Government | State MP: The Hon Peter Walsh, Member for Murray Plains (NP) - Shadow Minister for Regional Development, Local Government, and Aboriginal Affairs |
| | Department of Energy, Environment and Climate Action (DEECA): VicGrid and Parks Victoria |
| | Department of Government Services: Engage Victoria |
| | Department of Jobs, Skills, Industry and Regions: Regional Development Victoria (Loddon Mallee region) |
| | Department of Transport and Planning |
| Local government | Gannawarra Shire Council (Executive team, council staff, and elected councillors) |
| Neighbours | Host landholders, Immediate neighbours |
| Organisations | Bloomfield Hay & Transport |
| | Dingwall Hall |
| | Gannawarra Solar Farm |
| | Kerang Clay Target Club |
| | Koorangie Energy Storage System |
| | Lake Meran Brewery |
| | Lake Meran Tennis Club |
| | Meering West Fire Station |
| | Sandhill Lake & District Fire Station |
| | Season Ranch Organics |
| | Universal Farming Services |
| Local peak bodies/business organisations | Kerang & District Agricultural Society (Kerang Show) |
| | Kerang Lakes Community Development Group |
| | Kerang Traders Inc |
| | Loddon Mallee Regional Development Australia committee |
| | Quambatook Community Development Association |
| | Quambatook Tractor Pullers Association (Australian Tractor Pull Championship) |
| Community facilities, clubs, and groups | C.W.A. Kerang Branch |
| | Kerang Community Market |
| | Kerang Girl Guides |

| Stakeholder category | Stakeholder group |
|----------------------|---|
| | Kerang Men's Shed |
| | Kerang Museum |
| | Kerang Neighbourhood House |
| | Kerang Scouts |
| | Lions Club of Kerang |
| | Lions Club of Quambatook |
| | Northern District Community Health |
| | Quambatook Amity Club |
| | Quambatook Community Hall |
| | Quambatook Men's Shed |
| | Quambatook Senior Citizens Centre |
| | Quambatook Community Resource Centre |
| | Rotary Club of Kerang |
| | Alexandra Park, Showgrounds & Racecourse |
| | Kerang Basketball Stadium, Bowls Club, Football, Netball Club, Golf Club, Lawn Tennis Club, Regional parkrun, Turf Club |
| | Quambatook Bowls Club, Golf Club, Community Swimming Pool |
| | Wandella Cricket Club, Football Netball Club |
| Hospitals and health | Kerang District Health |
| | Kerang, Cohuna, Boort – Northern District Community Health Clinic |
| | Northern District Community Health |
| | St John of God Pathology |
| | Kerang District Health |
| Education | Gannawarra Shire Children's Centre |
| | Kerang Christian College |
| | Kerang Primary School |
| | Kerang South Primary School |
| | Kerang Technical High School |
| | St Joseph's Primary School |
| | Murray Mallee Training Co. Ltd. |
| | Learner and Beyond Driver Education – Kerang and Swan Hill |
| | U3A Kerang and District |
| Emergency services | SES, Fire and Police |
| | AEMO |

| Stakeholder category | Stakeholder group |
|---|--|
| Utility and service providers / bodies and authorities | North Central Catchment Management Authority |
| | Telstra |
| | TransGrid |
| | Transmission Company Victoria |
| Transport | Kerang Aerodrome |
| | VicTrack/Department of Transport and Planning |
| | V-line Melbourne to Swan Hill (closest stop is Kerang Railway Station) |
| | Disused Robinvale Railway Line |
| Nearby renewable energy infrastructure projects | Cohuna Solar Farm |
| | CleanGen |
| | Kerang Solar & BESS |
| | Kerang Bess |
| | KIG Energy |
| | Macorna Wind Farm |
| | Meering West Wind Farm |
| Western Victoria Transmission Network Project (Transmission Company Victoria) | |
| Environment / Action groups | Kerang Landcare Group |
| | Murray Mallee Landcare Network |
| | Friends of Lake Meran |
| | Quambatook Landcare Group |
| | 'Stop Normanville Wind Farm' Facebook group |
| | 'Piss off Transgrid' Facebook Group |
| Local media | Gannawarra Times |
| | Swan Hill Guardian |
| | The Koondrook and Barham Bridge Newspaper |
| | The Lakes Chatter |
| | ABC Local 102.1 FM (Kerang) |
| | ABC Local 106.5 FM (Goulburn Murray) |
| | Mixx FM 98.7 (Kerang) |
| | KLFM 96.5FM/106.3FM (Kerang) |
| | Vision Christian Radio 88.0 |
| | Kerang & District Community Page |

| Stakeholder category | Stakeholder group |
|----------------------|---|
| | Kerang Lakes |
| | Kerang Noticeboard |
| | Quambatook Connection |
| | What's on in Kerang |
| | Bomber Banter Members Page [Link] |
| | Large Scale Solar Development' Council page |
| | Quambatook webpage. |

A summary of the range of engagement activities have been undertaken with key stakeholders since 2019, has been provided as follows:

- Meetings with Gannawarra Shire Council
- Meetings with landholders hosting Project infrastructure
- Meetings with DEECA and DTP
- Establishment of a Project webpage and email inbox
- Appointment of a designated community liaison resource
- Sponsorship of the Kerang Football & Netball Club
- Two community open days
- Information booth at the Kerang Market
- Initial door knocking campaign of landholders within a 5 kilometre radius (10 kilometres for selected properties)
- Neighbour Benefit Scheme communication and door knocking (4 kilometre radius)
- Pop-up office in 2023 at the Kerang Neighbourhood House (July-September)
- Establishment of an ongoing pop-up temporary Project office in Kerang - open every Thursday at the Kerang Neighbourhood House (beginning September 2024)
- Print advertising in the Gannawarra Times
- Sponsorship of the Kerang Show in 2023 and 2024 including WestWind Energy presence at an information booth at the shows
- Financial support for Neighbourhood House Soup Kitchen and Emergency Food Provisions initiatives.

As per the CSCCP, consultation for the Project will be implemented across four stages. Stage one and part of Stage two have been completed with details of those completed activities provided in **Table 10-2**. Details of consultation outcomes and activities yet to be completed are provided in sections 15 to 18 of the CSCCP provided in **Appendix 8**.

Table 10-2: Consultation completed for the Project

| Activity | Objective/ details | Audience | Timing |
|--|--|-------------|-------------|
| Stage one: preliminary engagement | | | |
| Gannawarra Shire Council meetings | Formal meeting with the CEO, Geoff Rollinson. Formal meeting with Executive Manager Economic Development, Roger Griffiths. Help to identify potential landholders who have expressed interest in hosting turbines | Council | 2019 |
| Meetings with Infrastructure-hosting-landholders | Introduction to hosting meeting. Project land parcel meetings. Exclusion zones meetings. Initial design discussion meetings. Ongoing design revision meetings. | Landholders | 2019-2023 |
| Gannawarra Shire Council meetings | Meeting to brief council and the Project's progress and bring them up to date. | Council | 10 Mar 2023 |
| State government meeting | The Project team met with the DEECA and DTP to introduce the Project to the departments, discuss the site selection process, highlight the community engagement undertaken to date, and outline the active and proposed environmental investigations. | Authorities | 30 Mar 2023 |
| Project webpage | Update WestWind website project page to include Normanville Energy Park project, new messages and map. Use as 'single source of truth' for information, update regularly with new published information to ensure stakeholders can access the latest project information. Add EDM subscribe function. | All | Oct 2023 |
| Establish project inbox | info@normanvilleenergypark.com.au (redirects to reception@w-wind.com.au inbox). | All | June 2023 |

| Activity | Objective/ details | Audience | Timing |
|---------------------------------|---|---|---------------------|
| Contact card | A postcard-sized card to leave with stakeholders as part of engagement activities. Includes brief project overview and contact information. | Nearby neighbours | June 2023 |
| Contact card | A postcard-sized card to leave with stakeholders as part of engagement activities. Includes brief project overview and contact information. | Nearby neighbours | June 2023 |
| Media release | Media release issued: 'WestWind Energy Announces New Wind Farm in Normanville, Victoria, Fuelling Clean Energy for 50,000 Victorian Homes'. | All | 14 June 2023 |
| Media coverage | 2x Articles in the Gannawarra Times Readership | Readership | 19 June 2023 |
| Print advertising | Print ad in Gannawarra Times re Open Days (23 & 24 June) at Kerang Memorial Hall | Readership | 20 June 2023 |
| Community Open Days x2 | Two community open-days to share project information. Held at Kerang Memorial Hall (32 attendees). | Kerang and surrounding communities | 23-24 June 2023 |
| Door knocking campaign | Project team door-knocked 131 houses within a 5 km radius of the Project, and 10 km for selected properties, to introduce the Project and seek initial feedback from local landowners. All properties received project information, and contact was made with 76 people. | Landholders in a 5-10 km radius | 20-24 June 2023 |
| Kerang temporary project office | 11 days of WestWind Energy Development presence in a temporary office at the Kerang Neighbourhood House, Kerang. | Neighbours, community | 31 July-16 Oct 2023 |
| NDCH Briefing Meeting | The Project team provided an online briefing to Northern District Community Health (NDCH), Department of Families Fairness and Housing (DFFH), Mallee District Aboriginal Services (MDAS), Kerang, District Health (KDH), Gannawarra Shire, Education Department, local police and ambulance. | Traditional Owners, health sector, emergency services | 28 Aug 2023 |
| Project Update (Aug) | Project update issued to stakeholders and community members (n=62) following announcement activities and promoting office in Kerang. | Subscribers | 9 Aug 2023 |
| Print advertising | 4x Print advertisements in Gannawarra Times regarding Kerang Neighbourhood House location. | Kerang and surrounding communities | Aug-Sep 2023 |

| Activity | Objective/ details | Audience | Timing |
|---|---|------------------------------------|--------------|
| Council briefing meeting | WestWind provided a briefing presentation to Gannawarra Council on Project details, community benefits, and the planning process. In attendance were eight Councillors (including the Mayor and CEO) and nine admin staff. | Council | 11 Sep 2023 |
| Sponsored event: Wandella Bombers | The project team sponsored a dinner/ training night at the Wandella Football Netball Club, home of sponsored team Wandella Bombers. | Wandella Club | Oct 2023 |
| Council briefing | Meeting with Gannawarra Shire Council to provide updated project information and design. | Council | Oct 2023 |
| Kerang Show sponsorship | Platinum sponsors of the 137th Kerang Show. Also held a pop-up information stall at the show. | Wider community | 9 Oct 2023 |
| Project Update (April) | Project update issued to stakeholders & community (n=57) containing info on feasibility studies, community events and what's next. | Subscribers | April 2024 |
| Council briefing | Meeting with Gannawarra Shire Council to provide updated project information and timeline. | Council | April 2024 |
| Print advertising | Advertisement in Gannawarra Times promoting Kerang Show stall coming Saturday | Kerang and surrounding communities | 25 May 2024 |
| Kerang Market pop-up | Pop-up stall at Kerang Market to speak with community (12 attendees). | Kerang and surrounding communities | 25 May 2024 |
| Sponsored event: Wandella Bombers | The project team sponsored a dinner/ training night at the Wandella Football Netball Club, home of sponsored team the Wandella Bombers | Wandella Club | 16 July 2024 |
| Kerang Show sponsorship | Platinum sponsor of the 138th Kerang Show Also held a pop-up information stall at the show. | Wider community | 7 Oct 2024 |
| Stage two: Pre-development application | | | |
| Review Project website | Update Project page as required to include updated key messages and site footprint. | All | Ongoing |

| Activity | Objective/ details | Audience | Timing |
|------------------------|---|------------------------------------|----------------------------|
| Landholder meetings | One-on-one visits upon request from neighbours, or at the discretion of the engagement team, to address specific issues. | Landholders, neighbours | On request (ongoing) |
| Stakeholder meetings | Tailored briefings to stakeholders as required to provide an update on the Project status. | Key stakeholders | On request (ongoing) |
| Sponsorship | Kerang Neighbourhood House Soup Kitchen sponsorship. | Volunteer organisation | Aug 2024 |
| Sponsorship | WestWind present at Wandella Football and Netball Club evening event. | Local community | Aug 2024 |
| Project update (Aug) | Newsletter sent to neighbours and distributed in the local community. Provided update on ecological surveys, community support initiatives, and invitation to talk to the Project team at Kerang Show 2024. | Subscribers | Aug 2024 |
| Pop-up stall | Host a pop-up information stall in a public space with high foot traffic in Kerang (i.e., Victoria St) to provide an update on project status, maintain community presence and visibility, and engage hard-to-reach stakeholders. | Kerang and surrounding communities | Aug-Sept 2024 |
| Pop-up office | WestWind setup an office in the Neighbourhood House in Kerang, staffed every Thursday. The presence at Neighbourhood House allows people from the community to enquire about the Project in person. | Local community | 19 Sept 2024 (ongoing) |
| Project update (Sep) | Newsletter sent to neighbours and distributed in the local community. Provided update on new Community Liaison Officer, Alastair Mitton, and latest planning developments. | Subscribers | Sep 2024 |
| Sponsorship | Repeat Platinum sponsors of the 138th Kerang Show. Also held a pop-up information stall at the show. | Kerang and surrounding communities | 7 Oct 2024 |
| Neighbour consultation | Neighbours invited to participate in a Neighbourhood Benefit Scheme for those living within 4 kilometres of the project site boundary (28 properties) | Project neighbours | Nov 2024 |
| Host landholder events | Additional land tenure specialist introduction to hosts and discussions around progress of applications. Project manager introduction to landholders and discussions held around contract variations. | Host landholders | 16 Sept 2024 5 May 2025 |

| Activity | Objective/ details | Audience | Timing |
|---|--|--|---|
| Kerang Market pop-up | Pop-up stall at Kerang Market to speak with community. | Kerang and surrounding communities | Feb 2024 |
| Gannawarra Shire Council meeting | A formal briefing on the project was given to council and conducted online by the Project Developer and Community Liaison. | Gannawarra Shire Council CEO & Development Manager | March 2025 |
| | WestWind met with the Economic Development Manager to introduce the new Project Developer for WestWind, the EPBC referral, planning applications and predicted possible public exhibition in July of 2025. | | May 2025 |
| Meetings and sponsorships with community groups | To provide briefings to various community groups to advise the project details, location, timelines, community benefits and job opportunities. | Sandhill CFA | 17 Jan 2025 |
| | | Kerang Lions Club | 13 Mar 2025 |
| | | Kerang Men's Shed | 20 Mar 2025 |
| | | Kerang Rotary Club | 3 April 2025 |
| | | Kerang Progress Association | 23 April 2025 |
| | | Kerang Police | 13 Feb 2025 |
| | | Kerang Neighbourhood House | 13 Jan 2025 24 April 2025 8 May 2025 (ongoing) |

Source: adapted from the Community and Stakeholder Communications and Consultation Plan (ERM, 2024)

There is no appointed Registered Aboriginal Party for the Project site. The Proponent is undertaking a voluntary Cultural Heritage Management Plan (CHMP) which — in the absence of a Registered Aboriginal Party — will be administered by First Peoples - State Relations (FP-SR).

Consultation with the recognised Traditional Owner groups (the Barapa Aboriginal Corporation, the Wiran Aboriginal Corporation and the Wemba Wemba Aboriginal Corporation) as advised by FP-SR has been carried out during the heritage assessment and will continue to be carried out as part of the voluntary CHMP process.

10.1.6.1 Project design change resulting from engagement

In November 2024, engagement was undertaken with local private landholders, leading to WestWind changing the planned route for the external transmission line. The transmission line was repositioned along local council roads to avoid crossing the paddocks of several private properties. Although the new route is slightly longer, it will prevent disruptions to private landholders, who expressed concerns about the construction process and impacts on native vegetation. Horizontal directional drilling was also then introduced to avoid impacts to the road and native vegetation, as discussed in **Section 4**.

Engagement was undertaken with local private landholder in November 2024. This engagement resulting in WestWind re-routing the planned external transmission line route to avoid crossing the paddocks of several private properties and instead repositioned the transmission line along local council roads to avoid. While the new transmission route is slightly longer, it will avoid disruptions to private land holders who expressed their concerns regarding construction process disruptions and impacts to native vegetation.

10.2 Benefit sharing scheme

This section provides a summary of the community benefit sharing initiative for the Project as detailed within section 12.1 of the CSCCP (ERM, 2024), provided in **Appendix**

The Project will establish a community benefit fund for community initiatives, developed in consultation with the local community and relevant stakeholders, and managed by a community reference group. Future benefit sharing options considered for the Project in three broad terms:

- community benefit programs
- the creation of grant funds, and
- innovative financing methods that enable community co-investment or community co-ownership.

Benefit sharing strategies beyond cash-based contributions will also be explored for the Project, such as:

- creating impact through regional economic development approaches (e.g. local jobs and contracting)
- in-kind contributions (e.g. employee volunteerism)
- partnership benefits (e.g. industry capability network and education opportunities).

Community benefits to date include:

- **Community Benefit Scheme** – Normanville Energy Park will invest a minimum of \$50,000 annually into community benefit sharing. Community grants, scholarships, investment opportunities and financial incentives will be developed in consultation with the community to ensure local values and views are properly considered.
- **Financial Incentive Program for Landholders** – The economic boost to farmers hosting wind farm infrastructure provides them with additional annual income from the project lasting for decades.

- **Neighbour Benefit Scheme** – for neighbours who have one or more wind turbines within 2 kms of their residence. WestWind will offer neighbours who qualify a \$8,000 annual payment once the turbines are commissioned for the life of the project.
- **Landscaping Program** – Residents at dwellings with a view of wind turbines will be invited to participate in a landscaping program to help reduce any visual impact of the turbines
- **Electricity Offset Scheme** – An electricity offset scheme would share the benefits of the project across a larger section of the community, while reducing the local community's carbon footprint. The scheme would offset electricity costs for dwellings located near the wind farm.
- **Clean and secure energy** – This Project would provide enough electricity to power more than 90,000 homes.

12. Environmental record of person(s) proposing the Project

The Proponent is a special purpose vehicle established by WestWind Energy (WWE) to facilitate the development and delivery of the Project. It is expected that the Proponent will be responsible for all phases of the Project including development, permitting, construction, compliance, operation and decommissioning.

WWE is currently the largest developer of wind energy Projects in Victoria by approved megawatts of generation and has a wealth of experience from working with Victorian regional and rural communities.

WWE's previous Projects demonstrate the company's history of responsible environmental management and strict compliance with all environmental protection laws and regulations.

WWE's previous Projects include:

- Mt Mercer Wind Farm (130MW – in operation since 2013) (EPBC 2005/2116)
- Lal Lal Wind Farm (228MW – in operation since 2019) (EPBC 2007/3721)
- Moorabool Wind Farm (320MW – in operation since 2020) (EPBC 2009/4907)
- Golden Plains Wind Farm (1,333MW – construction commenced late-2022) (EPBC 2017/7965)
- Warracknabeal Energy Park (1,650MW – undergoing environmental and planning approvals since mid-2023)(EPBC 2023/09546)
- Bottle Tree Energy Park (400MW - undergoing environmental and planning approvals since late 2023) (EPBC2023-09659)
- Cobar Wind Farm (216 MW - undergoing environmental and planning approvals since early 2024) (EPBC 2024-09843)
- Lake Victoria Wind Farm (1500 MW - undergoing environmental and planning approvals since mid-2024) (EPBC2024-02546).

As a special purpose vehicle established by WWE, the Proponent would undertake the Project in accordance with the WWE corporate environmental policy and framework as detailed in **Section 12.2**.

12.1 Proposed designated proponent

The owner of the Project is Normanville Energy Park Pty Ltd as the trustee for the Normanville Energy Park Unit Trust. The details of the referring party and the organisation proposing to take the action are provided in **Table 12-1**.

Table 12-1: Details of referring party and organisation proposing to take the action

| Items | Information |
|--|-------------------------------------|
| Referring party | |
| Organisation name | WESTWIND ENERGY DEVELOPMENT PTY LTD |
| ABN/ACN | 15656111125 |
| Organisation address | PO Box 433, Gisborne VIC 3437 |
| Organisation proposing to take the action | |
| Organisation name | NORMANVILLE ENERGY PARK PTY LTD |
| ABN/ACN | 30669902792 |

| Items | Information |
|------------------------|-------------------------------|
| Organisation address | PO Box 433, Gisborne VIC 3437 |
| Contact details | |
| Contact Name | Marla Brauer |
| Job title | Chief Development Officer |
| Phone | 0411 252 819 |
| Email | environment@w-wind.com.au |
| Address | PO Box 433, Gisborne VIC 3437 |

12.2 WestWind Energy Environmental Policy and planning framework

As a subsidiary of WWE, Normanville Energy Park Pty Ltd adheres to WWE's environmental policy and planning framework. WWE's Sustainability Policy is reproduced below:

WestWind Energy is a developer and operator of environmentally friendly electric power generation facilities. WestWind Energy is committed to developing and operating these facilities in a manner which minimises environmental impact.

WestWind Energy will manage its activities in an environmentally sustainable manner and continuously improve their impact on the shared environment.

To achieve this objective, WestWind Energy will:

- *Conduct all activities in accordance with the relevant legislation, government policies, agreements and planning approvals*
- *Design, implement and audit programmes and works to responsibly minimise environmental impacts from the operation of its facilities*
- *Establish and monitor environmental targets and indicators aimed at continually improving environmental performance*
- *Work within a framework of sustainable development by using resources in a manner which maximises their value to both WestWind Energy and the general community*
- *Respond promptly and effectively to any known significant environmental impacts caused by operations under its control*
- *Educate and train personnel and contractors in their environmental obligations and responsibilities and educate and train employees to conduct their activities in an environmentally responsible manner*
- *Consult and inform other organisations and the general community of the environmental impacts of its activities*
- *Promote the efficient use of energy, raw materials and other resources within its operations*
- *Promote environmental awareness among employees, suppliers and contractors*
- *Manage land under its care with sensitivity, having due regard for local environmental sensitivities*
- *Make this policy known and available to the public.*

13. Summary of findings

Overall, the findings indicate that the Normanville Energy Park is designed to mitigate environmental impacts, including to MNES, through careful planning, targeted avoidance, and minimisation measures, conducting sustainable development while providing social and economic benefits to the community.

The key activities associated with the Normanville Energy Park include the construction and operation of

- 17 wind turbines,
- construction of associated NEM connection infrastructure to the pre-existing Koorangie Terminal Station, and
- upgrades to 24 intersections of the transport route to facilitate the OSOM vehicles from Portland to the Project Site.

The Project has undergone 15 design iterations and adopted additional design measures, such as increasing the RSA height to 50 metres and horizontal directional drilling, to minimise the impacts environmental and social impacts from the Project.

The total area of MNES impacted to facilitate the Project, includes the clearing of 0.307 hectares of listed threatened communities and 0.335 hectares of native vegetation of actual and potential foraging habitat for listed threatened fauna species. No direct and low likelihood of indirect impacts are anticipated to occur to Kerang Wetlands the Ramsar listed wetlands located in proximity to the Project.

The majority of EPBC listed threatened bird species are considered to be not susceptible to impacts from the Project, as they are either:

- not at risk of collision
- the Project is outside of their known range
- lack of suitable habitat or
- they would experience only negligible impacts to habitat which is unlikely to affect occupancy, connectivity, or foraging and breeding opportunities (refer **Sections 6.5, 6.6, 6.7, 8.3** and **Appendix 2**).

A small number of species, although unlikely to be significantly impacted, are considered at low risk and remain susceptible to potential impacts. These species/groups are:

- Blue-winged Parrot *Neophema chrysostoma* (Vulnerable)
- Fork-Tailed Swift *Apus pacificus* (Migratory)
- Migratory shorebirds (threatened and non-threatened species)
- Corben's long-eared Bat *Nyctophilus corbeni* (Vulnerable).

To minimise potential impacts to these species a Bird and Bat Adaptive Management Plan (BBAMP) has been created and provided in **Appendix 7**, for implementation throughout the Projects life. To address potential long-term population effects the BBAMP includes general response actions and a precautionary response strategy for any collisions incidents involving waterbirds.

A summary of the key EPBC assessment findings and impacts of the Project in response to the Assessment Scope is provided in **Table 13-1**.

Table 13-1: Summary of key findings

| Key item/ species | Key findings/impacts |
|---|---|
| Ramsar wetlands | Kerang Wetlands <ul style="list-style-type: none"> No direct impacts to Kerang Wetlands. Indirect impacts include surface water risks associated with hydrological alteration and pollution, and collision impacts. Surface water impacts are generally considered to be adequately managed with the implementation of best practice mitigation and management measures during construction and operation. Generally, a low risk of impacts to the receiving water environment, including Kerang Wetlands (Ramsar wetlands). A precautionary response strategy for any collision incidents involving waterbirds of concern will be incorporated into the BBAMP to address potential long-term population effects. The potential for significant impacts resulting from collisions are expected to be mitigated by the implementation of the BBAMP. |
| Key threatened species (as identified by the Assessment Scope) | Blue-winged Parrot <i>(Neophema chrysostoma)</i> <ul style="list-style-type: none"> No anticipated direct or indirect impacts during construction. Species does fly at RSA heights, however low observance of species, therefore, while susceptible to impact through collisions, impact are considered to occur infrequently and are anticipated to be mitigated through adaptive measures of the BBAMP. Therefore, it is considered that the Project presents a very low risk to the species and significant impacts are considered unlikely. |
| | South-eastern Hooded Robin <i>(Melanodryas cucullata cucullata)</i> <ul style="list-style-type: none"> Not recorded in Wind Farm Study Area but nearby occurrences. No residual impact related to habitat loss and connectivity is expected during construction. Species typically remains below canopy height and no considered susceptible to turbine strikes and barrier effects during operation. |
| | Brown Treecreeper <i>(Climacteris picumnus victoriae)</i> <ul style="list-style-type: none"> Consistently recorded during roadside remnant vegetation surveys. Expected to be year-round resident at Project Site. No residual impact related to habitat loss and connectivity is expected during construction. Species typically remains below canopy height and not considered susceptible to turbine strikes and barrier effects during operation. |
| | Corben's Long-eared Bat <i>(Nyctophilus corbeni)</i> <ul style="list-style-type: none"> Not confirmed at the Project Site, project spite not located within the species known distribution. |

| Key item/ species | | Key findings/impacts |
|--|--|---|
| | | <ul style="list-style-type: none"> • May be impacted by temporary disturbance of construction, however with implementation of management measures impacts are expected to be localised and temporary. • Unlikely to fly at RSA heights, potentially susceptible to operational impacts but considered low risk due to increased RSA heights. • Impacts considered localised and temporary. |
| Other listed threatened species and communities | <p>Listed threatened species Southern Whiteface (<i>Aphelocephala leucopsis</i>); Australasian Bittern (<i>Botaurus poiciloptilus</i>); Curlew Sandpiper (<i>Calidris ferruginea</i>); Grey Falcon (<i>Falco hypoleucos</i>); Painted Honeyeater (<i>Grantiella picta</i>); Major Mitchell's Cockatoo - eastern (<i>Lophochroa leadbeateri leadbeateri</i>); Plains-wanderer (<i>Pedionomus torquatus</i>); Regent Parrot - eastern (<i>Polytelis anthopeplus monarchoides</i>); Australian Painted Snipe (<i>Rostratula australis</i>); Diamond Firetail (<i>Stagonopleura guttata</i>)</p> | <ul style="list-style-type: none"> • Species have not been recorded within the project Area, including along the Transport Route. Species were condered due to records in surrounding area, the broader region and/or because the Project falls within (or close) to known or modelled distribution of the species. • Species are not considered to be susceptible to impacts from the Project as they are either not at risk of collision, the Project is outside their known range, there is a lack of suitable habitat on site, or they would experience only negligible habitat impacts unlikely to affect occupancy, connectivity, or foraging and breeding opportunities. |
| | <p>Listed threatened ecological communities Plains Mallee Box Woodlands of the Murray Darling Depression, Riverina and Naracoorte Coastal Plains Bioregions (PMBW) Natural Grasslands of the Murray Valley Plains (NGMVP) Buloke Woodlands and the Riverina and Murray-Darling Depression Bioregions (BWRMDDB) Mallee Bird Community of the Murray Darling Depression Bioregion (MBC)</p> | <ul style="list-style-type: none"> • Minor impacts to PMBW comprising 0.068 ha impacted on Wind Farm Site and 0.046 ha on Transport Route (totalling 0.114 ha). • Minor impacts to NGMVP comprising 0.026 ha directly impacted along the Transport Route from two locations. • Minor impacts to BWRMDDB comprising 0.167 ha directly impacted along the Transport Route. • Minor impacts to MBC comprising 0.335 ha of potentially suitable mallee habitat impacted on Wind Farm Site and approximately 0.112 ha of mallee habitat (Ridged Plains Mallee EVC 96) impacted across along the Transport Route. • Impacts to these communities occur over 11 locations along the Transport Route and three locations for internal tracks within the Wind Farm Site. Therefore, as the impacts to these communities comprise small parts of larger patches within the landscape, made up of remnant woodland, grassland patches, and scattered trees, significant impacts to these communities are considered unlikely. • Indirect impacts considered to be localised and managed by CEMP for all 3 communities. |

| Key item/ species | Key findings/impacts | |
|--|---|---|
| Listed and non-listed migratory species | Fork-tailed Swift <i>Apus pacificus</i> | <ul style="list-style-type: none"> • Highly mobile species and not expected to regularly frequent the Project site. Removal of native vegetation is not significant for the species. Species is considered unlikely to be impacted during construction. • Though collisions may occur occasionally, the level of risk to the species from operations of the Project is considered to be very low, and significant impacts are considered unlikely. |
| | Other listed migratory species Curlew Sandpiper (<i>Calidris ferruginea</i>); Sharp-tailed Sandpiper (<i>Calidris acuminata</i>); Black-tailed Godwit (<i>Limosa limosa</i>); Common Greenshank (<i>Tringa nebularia</i>); Common Sandpiper (<i>Actitis hypoleucos</i>); Pectoral Sandpiper (<i>Calidris melanotos</i>); Ruff (<i>Calidris pugnax</i>); Red-necked Stint (<i>Calidris ruficollis</i>); Double-banded Plover (<i>Charadrius bicinctus</i>); Little Curlew (<i>Numenius minutus</i>); Marsh Sandpiper (<i>Tringa stagnatilis</i>) | <ul style="list-style-type: none"> • Construction impacts on these species is considered unlikely due to the lack of wetland habitat on site • Collision risk cannot be entirely ruled out due to uncertainties around flight heights and species occurrence, however, collision risk is considered very low. • Significant impacts on migratory shorebirds is unlikely, however, a precautionary response strategy for any collision incidents involving waterbirds of concern will be incorporated into the BBAMP to address potential long-term population effects. |

The Proponent has completed a range of community and stakeholder consultation which has further influenced the design of the project and resulted in improved social and environmental impacts from the Project. The Normanville Energy Park is expected to make a significant and long-lasting contribution to the local economy of Normanville and the broader Gannawarra Shire. Over the Project's approximate 30-year lifespan, this includes direct benefits through landholder payments, benefit-sharing initiatives, and community funding programs. During peak construction, the Project will create up to 60 on-site jobs over a two-year period, along with 2–3 ongoing operational roles. It will provide participating farmers and landholders with a stable, long-term income stream, supporting agricultural diversification and financial resilience. Potential negative impacts that may occur as a result of the Project include increased competition among farmers, due to the increased financial gap between those participating in the Project and other farmer, and the potential distribution, or lack therefore, of benefits over the Project's lifespan. The Proponent has developed a Benefit Sharing Scheme in consultation and collaboration with the community that will be implemented throughout the life of the Project. Ongoing consultation and collaboration with stakeholders, including traditional owner groups, is integral for the Projects social licence as will be continued by the Proponent.

The Project will have predominantly positive and long-lasting social and economic impacts on the surrounding community and is unlikely to pose a significant impact on EPBC Act listed values.

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Appendix 1
Scope for EPBC Assessment Documentation under EPBC Act
Bilateral (Assessment) Agreement 2014 – Accredited Planning
Permit application process (item 2.1(f))

Appendix 2
Normanville Energy Park - Assessment Documentation -
Ecology Scope prepared by Nature Advisory (Nature Advisory,
2025b)

Appendix 3
Normanville Energy Park Pre-construction Biodiversity
Assessment prepared by Nature Advisory (Nature Advisory
2025)

Appendix 4
Summary of planning details

| Project | Normanville Energy Park | |
|--|---|--|
| Planning Scheme | Gannawarra Planning Scheme | |
| Project location | Kerang-Quambatook Road | |
| Legal description of land within the Project | <p>Wind farm site</p> <ul style="list-style-type: none"> • Lot 54/PP2912 (freehold) • Lot 2/PS326843 (freehold) • Lot 40/PP2912 (freehold) • Lot 39/PP2912 (freehold) • Lot 62/PP2912 (freehold) • Lot 61/PP2912 (freehold) • Lot 60/PP2912 (freehold) • Lot 58/PP2912 (freehold) • Lot 59/PP2912 (freehold) <p>Koorangie terminal station</p> <ul style="list-style-type: none"> • Lot 2/ PS921632 (freehold) • Lot 2 / PS914951 (freehold) <p>Transmission line</p> <ul style="list-style-type: none"> • Denyer Road <ul style="list-style-type: none"> ○ PFI 133060886 ○ PFI 133065009 ○ PFI 133065109 • Quambatook-Kerang Road <ul style="list-style-type: none"> ○ Transport Road Zone 2 – Principal Road Network (TRZ2) • Kerang-Lalbert Road <ul style="list-style-type: none"> ○ PFI 133065114 ○ PFI 133061162 ○ PFI 133069240 ○ 33/PP2912 (freehold) | <p>Transport Route</p> <ul style="list-style-type: none"> • TBCNo2 Quay Road / Madeira Packet Road <ul style="list-style-type: none"> ○ PFI 132504828. • Henty Highway <ul style="list-style-type: none"> ○ PFI 132494340 ○ PFI 132499656. • Henty Highway / Chrome Road <ul style="list-style-type: none"> ○ PFI 132596473 ○ PFI 132598886. • Dartmoor-Hamilton Road / Chrome Road <ul style="list-style-type: none"> ○ PFI 13294909 ○ PFI 132603425 ○ PFI 132590698 ○ PFI 132604559. • Dartmoor-Hamilton Road / Fairburns Road <ul style="list-style-type: none"> ○ PFI 132606244 ○ PFI 132597368 ○ PFI 132589804 • Glenelg Highway / Fairburns Road <ul style="list-style-type: none"> ○ PFI 132631825 ○ PFI 132590196 • Glenelg Highway / Coleraine – Edenhope Road <ul style="list-style-type: none"> ○ PFI 132587075 ○ PFI 132587455 • Coleraine – Edenhope Road / Nhill-Harrow Road <ul style="list-style-type: none"> ○ PFI 132534573 ○ PFI 132533180 • Nhill-Harrow Road <ul style="list-style-type: none"> ○ PFI 132528076 ○ PFI 132527243 ○ PFI 132528180 ○ PFI 132525899 ○ PFI 132529960 ○ PFI 132536306 ○ PFI 132569650 • Nhill-Harrow Road / Western-Highway <ul style="list-style-type: none"> ○ PFI 132559925 ○ PFI 132569106 • Western-Highway / Mckenzie Avenue <ul style="list-style-type: none"> ○ PFI 132569034 ○ PFI 132569106 • Mckenzie Avenue / Nhill – Yanac Road <ul style="list-style-type: none"> ○ PFI 132569034 ○ PFI 132565567 ○ PFI 132563640 • Western-Highway / Borung Highway <ul style="list-style-type: none"> ○ PFI 132562524 |

| Project | Normanville Energy Park | |
|------------------|---|--|
| | | <ul style="list-style-type: none"> ○ PFI 132563408 ○ PFI 132568515 • Henty Highway / Lyle Street <ul style="list-style-type: none"> ○ PFI 132900037 ○ PFI 132902250 ○ PFI 132906129 ○ PFI 132908851 ○ PFI 132910737 • Henty Highway / Galaquil East Road <ul style="list-style-type: none"> ○ PFI 132899857 ○ PFI 132900904 ○ PFI 132904737 ○ PFI 132908799 • Mcloughlans Road / Sunraysia Highway <ul style="list-style-type: none"> ○ PFI 132780891 ○ PFI 132786890 ○ PFI 132789626 • Birchip-Wycheproof Road / Donald Swan Hill Road <ul style="list-style-type: none"> ○ PFI 132782590 ○ PFI 132785268 ○ PFI 132791600 • Donald Swan Hill Road/ Calder Highway <ul style="list-style-type: none"> ○ PFI 132783366 ○ PFI 132791868 |
| Applicant | Normanville Energy Park Pty Ltd as trustee for Normanville Energy Park Unit Trust | |
| Zoning | Farming Zone (FZ) Transport Road Zone 2 – Principal Road Network (TRZ2) | |
| Overlays | <ul style="list-style-type: none"> • Environmental Significance Overlay – Schedule 2 Highway Protection Environs (ESO2). • Environmental Significance Overlay – Schedule 4 Areas of Poor Drainage or Potentially Subject to Inundation (ESO4). • Vegetation Protection Overlay – Schedule 1 Roadside and Corridor Protection (VPO1). • Vegetation Protection Overlay – Schedule 2 Remnant Vegetation (VPO2). • Land Subject to Inundation Overlay (LSIO). • Specific Controls Overlay – Schedule 2 (SCO2) | |
| Other | Bushfire Prone Area designated under the <i>Building Act 1993</i> | |
| Propose Land Use | Wind Energy Facility Utility Installation (Transmission Infrastructure). | |

Appendix 5
Surface water and groundwater assessment prepared by GHD
(GHD, 2024)

Appendix 6
Socio-Economic Assessment

Table A-1. Historic population growth

| | Population | | | | Annual growth (no.) | | | Annual growth (%) | | |
|-------------|------------|-----------|-----------|-----------|---------------------|---------|---------|-------------------|-------|-------|
| | 2006 | 2011 | 2016 | 2021 | 06-11 | 11-16 | 16-21 | 06-11 | 11-16 | 16-21 |
| Normanville | - | - | 35 | 34 | - | - | -1 | - | - | -0.6% |
| Gannawarra | 11,296 | 10,366 | 10,549 | 10,683 | -930 | 183 | 134 | -1.73% | 0.35% | 0.25% |
| Victoria | 4,932,422 | 5,354,042 | 5,926,624 | 6,503,491 | 421,620 | 572,582 | 576,867 | 1.65% | 2.04% | 1.87% |

Source: ABS 2021, Quickstats: People

Table A14-2. Forecast population growth

| | Population | | | | Annual growth (no.) | | | Annual growth (%) | | |
|-------------|------------|-----------|-----------|-----------|---------------------|---------|--------|-------------------|-------|--------|
| | 2021 | 2026 | 2031 | 2036 | 21-26 | 26-31 | 31-36 | 21-26 | 26-31 | 31-36 |
| Normanville | - | - | - | - | - | - | - | - | - | - |
| Gannawarra | 10,615 | 10,399 | 10,299 | 10,179 | -216 | -100 | -120 | -0.41% | 0.19% | -0.23% |
| Victoria | 6,547,822 | 7,181,626 | 7,802,503 | 8,427,079 | 633,804 | 620,877 | 624,76 | 1.86% | 1.67% | 1.54% |

Source: Victoria State Government, Department of Transport and Planning, Local Government Areas (LGA), 2023, <https://www.planning.vic.gov.au/guides-and-resources/Data-spatial-and-insights/discover-and-access-planning-open-data/victoria-in-future/download-data/lga-and-vifsa-data>

Table A-3. Socio-demographic profile, 2021

| | Normanville | Gannawarra LGA | Victoria |
|----------------------------------|-------------|----------------|----------|
| Age distribution | | | |
| 0-14 years | 28.1% | 15.7% | 18% |
| 15-24 years | 31.3% | 8.7% | 11.9% |
| 25-44 years | 28.1% | 17.8% | 29.1% |
| 45-64 years | 12.5% | 27.8% | 24.2% |
| 65+ years | 0% | 30.2% | 16.8% |
| Median age | 24 | 51 | 38 |
| Weekly household income | | | |
| \$0-\$499 | - | 18.9% | 9.6% |
| \$500-\$999 | - | 24.5% | 15.7% |
| \$1000-\$1,999 | 30% | 26.6% | 25.9% |
| \$2,000-\$3,999 | 30% | 13.5% | 29.7% |
| \$4,000 or more | - | 7.9% | 12.6% |
| Partial income stated | - | 4% | 4.5% |
| No income stated | 40% | 4.5% | 1.8% |
| Median weekly household income | \$2,083 | \$1,071 | \$1,759 |
| Household structure | | | |
| Average household size | 3,5 | 2,2 | 2,5 |
| Family households | 40.9% | 64.5% | 70.1% |
| Single or lone person households | 59.1% | 33.2% | 25.6% |
| Group households | 0% | 2.3% | 4% |
| Family composition | | | |
| Couple family with no children | 42.9% | 52% | 37.6% |

| | Normanville | Gannawarra LGA | Victoria |
|-----------------------------------|-------------|----------------|----------|
| Couple family with children | 57.1% | 33.3% | 45.5% |
| One parent family | 0% | 13.3% | 15.2% |
| Other family | 0% | 1.5% | 1.7% |
| Housing status | | | |
| Owned outright | 100% | 51.3% | 32.2% |
| Owned with mortgage | 0% | 24.8% | 36.1% |
| Rented | 0% | 18% | 28.5% |
| Other tenure type | 0% | 3.1% | 1.7% |
| Median monthly mortgage | \$797 | \$1,000 | \$1,859 |
| Median weekly rent | \$145 | \$195 | \$370 |
| Tertiary education | | | |
| Bachelor degree or higher | 33.3% | 9.1% | 26.3% |
| Advanced diploma or diploma level | 0% | 6.8% | 9.8% |
| Certificate III and IV | 66.6% | 20.2% | 14.3% |
| Certificate I and II | 0% | 0.1% | 0.1% |
| Year 12 or equivalent | 69.6% | 9.8% | 14.9% |
| Year 11 or equivalent | 34.8% | 9.3% | 5.7% |
| Year 10 or equivalent | 17.4% | 14.6% | 7.3% |
| Year 9 or below | 0% | 16.1% | 7.9% |
| Birthplace | | | |
| Australian born | 100% | 85.7% | 65% |
| Overseas born | 0% | 14.3% | 35% |
| Motor vehicles | | | |
| 0 cars | 0% | 4.6% | 7.5% |
| 1 car | 21.4% | 32% | 35.8% |
| 2+ cars | 78.6% | 63.4% | 56.7% |

Source: ABS 2021, Quickstats: People

Table A-4. Resident labour force profile, 2021

| | Normanville | Gannawarra | Victoria |
|--|-------------|------------|-----------|
| Participation in the labour force | | | |
| In the labour force | 19 | 4,551 | 3,330,560 |
| Labour force participation (%) | 86.4% | 50.5% | 62.4% |
| Employment status | | | |
| Employed | 19 | 4,390 | 3,162,895 |
| Unemployed | 0 | 163 | 167,667 |
| Unemployment rate (%) | 0% | 3.6% | 5% |

Source: ABS 2021, QuickStats All Persons, General Community Profiles

Table A-5. Industry of employment

| Sector | Normanville | Gannawarra | | | Victoria |
|---|-------------|------------|-------|----------|----------|
| | 2021 | 2016 | 2021 | % Change | 2021 |
| Agriculture, Forestry and Fishing | 85% | 26.2% | 24.8% | -1.4% | 3.1% |
| Mining | | 1.2% | 1.1% | -0.1% | 0.4% |
| Manufacturing | | 7.1% | 7.5% | 0.4% | 10.1% |
| Electricity, Gas, Water and Waste Services | | 2.1% | 2.3% | 0.2% | 1.6% |
| Construction | | 8% | 9.1% | 1.1% | 13.7% |
| Wholesale Trade | | 2.1% | 2.7% | 0.6% | 4.1% |
| Retail Trade | | 11.4% | 10.5% | 0.9% | 13.6% |
| Accommodation and Food Services | | 4.8% | 4.6% | -0.2% | 9% |
| Transport, Postal and Warehousing | | 4.5% | 3.7% | -0.8% | 6.7% |
| Information Media and Telecommunications | | 0.5% | 0.3% | -0.2% | 2.3% |
| Financial and Insurance Services | | 1.3% | 1.1% | -0.2% | 5.9% |
| Rental, Hiring and Real Estate Services | | 3.1% | 3.3% | 0.2% | 2.1% |
| Professional, Scientific and Technical Services | 15% | 2% | 2.1% | 0.1% | 12.2% |
| Administrative and Support Services | | 5.4% | 7.3% | 1.9% | 4.6% |
| Public Administration and Safety | | 6.1% | 6.6% | 0.5% | 8.2% |
| Education and Training | | 13.1% | 13.5% | 0.4% | 12.7% |
| Health Care and Social Assistance | | 1% | 0% | -1% | 20.4% |
| Arts and Recreation Services | | 1% | 0.8% | -0.2% | 2.5% |
| Other Services | | 3.8% | 4% | 0.2% | 7.2% |

Source: ABS 2021, QuickStats All Persons, General Community Profiles

Table A-6. Occupation of employment

| | Normanville | Gannawarra | | | Victoria |
|--------------------------------------|-------------|------------|-------|----------|----------|
| | 2021 | 2016 | 2021 | % Change | 2021 |
| Managers | 63.6% | 25.8% | 23.1% | -2.7% | 13.5% |
| Professionals | 18.2% | 11.8% | 13% | 1.2% | 23.3% |
| Technicians & trade workers | - | 13.4% | 14.4% | 1% | 13.1% |
| Community & personal service workers | - | 9.6% | 10.7% | 1.1% | 10.6% |
| Clerical & administrative workers | - | 10.1% | 9.6% | -0.5% | 13.3% |
| Sale workers | - | 8.9% | 8.2% | -0.7% | 9.7% |
| Machinery operators & drivers | 18.2% | 7.6% | 8.3% | 0.7% | 5.8% |
| Labourers | - | 12.9% | 12.7% | -0.2% | 9% |

Source: ABS 2021, QuickStats All Persons, General Community Profiles

Appendix 7
Bird and Bat Adaptive Management Plan prepared by Nature
Advisory (Nature Advisory, 2025a)

Appendix 8
Community and Stakeholder Communication and Consultation
Plan (ERM, 2024)