August 2023

Biodiversity Assessment, 374 Hendersons Road, Toongabbie, Victoria

Prepared for:

Crowther and Sadler Pty Ltd

Ecolink Consulting Pty Ltd

PO Box 356, Northcote VIC 3070 | www.ecolinkconsulting.com.au | info@ecolinkconsulting.com.au

ABN: 80 646 930 817 | ACN: 159 690 472

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Project name	Biodiversity Assessment, 374 Hendersons Road, Toongabbie, Victoria
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Project manager	Stuart Cooney
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Report author	Liam McCormack
Site assessors	Liam McCormack and Stuart Cooney
Report reviewer	Stuart Cooney
Other staff	N/A
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Cover Photograph

A photograph of vegetation within the study area taken during the current assessment.

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Executive Summary

Ecolink Consulting Pty Ltd was engaged by Crowther and Sadler Pty Ltd to undertake a Biodiversity Assessment at a proposed development site at 374 Hendersons Road, Toongabbie, Victoria (the study area). The Biodiversity Assessment was undertaken to determine the ecological constraints of the study area, and to support a planning permit application for the proposed construction of a renewable energy facility.

The study area is located south-east of the town of Toongabbie and is located in a largely rural setting, dominated by pastoralism and agriculture. It is zoned Farming Zone within the Wellington Planning Scheme. No planning overlays, relevant to the current assessment, such as Environmental Significance, Vegetation Protection or Significant Landscape Overlays, cover the study area. The study area is linear and consists of two adjoining road easements, an extension of the easements, south, through pasture areas, and an area of fenced paddock forming a square. The linear portions of the study area will support connections for the plant, which will be located in the centrally located square of the study area.

Department of Energy, Environment, and Climate Action modelling suggests that the study area was historically covered by Ecological Vegetation Class (EVC) 55: Plains Grassy Woodland. This was generally confirmed by the current assessment.

The vegetation within the study area was a mix of largely exotic species dominating the paddocks, with areas of native vegetation in the road reserves. Forty flora species were recorded during the current assessment (excluding the planted trees). This comprised 13 indigenous species and 27 exotic species. The centrally located paddock, and southern extension of the utilities connection was largely dominated by pasture grass such as Barley Grass *Hordeum marinum*, Cocksfoot *Dactylis Glomerata*, Great Brome *Bromus diandrus*, Sweet Vernal-grass *Anthoxanthum odoratum*, and environmental weeds such as Common Peppercress *Lepidium africanum*, Ribwort *Plantago lanceolata*, and Tall Fleabane *Erigeron sumatrensis*.

Native vegetation was recorded in much of the northern roadside areas, including species such as Blackwood *Acacia melanoxylon,* Burgan *Kunzea ericoides*, Common Tussock Grass *Poa labillardierei*, Kangaroo Grass *Themeda triandra*, Sheep's Burr *Acaena echinata*, Supple Spear-grass *Austrostipa mollis,* Wattle Mat-rush *Lomandra filiformis*, Nodding Salt-bush *Einadia nutans* and Small Loose-strife *Lythrum hyssopifolia*. However, this vegetation was largely fragmented and infested with invasive grasses such as Kikuyu *Cenchrus clandestina*, Toowoomba Canary-grass *Phalaris aquatica* and environmental weeds such as Spiny Sow-thistle *Sonchus asper* and Ribwort.

The area of vegetation in the road reserve, south of Hendersons Road, was observed to be the best quality, and least fragmented, found on site. It extended outside of the study area and exhibits some important structural components, however, an exotic grass infestation was also observed. Native vegetation recorded within this location included Gippsland Red-gum *Eucalyptus tereticornis*, Blackwood, Common Tussock-grass, Nodding Saltbush, Kangaroo Grass, Common Wallaby-grass *Rytidosperma caespitosum*, and Small Loose-strife. Exotic vegetation included exotic grasses such as

Kikuyu, Toowoomba Canary-grass, Yorkshire Fog *Holcus lanatus* and Panic Veldt-grass *Ehrharta erecta*, and environmental weeds including Ribwort, Tall Fleabane and Common Peppercress.

The land surrounding the study area is utilised for grazing and cropping, with vegetation retained along riparian corridors. Whilst not intersecting the study area, riparian corridors such as Fells Creek and Nambrok Denison Main Channel are proximal to the study area. Furthermore, the study area is located less than ten kilometres from the La Trobe River. These areas are likely to provide important habitat and movement corridors for flora and fauna within the landscape.

No threatened flora species have been recorded within five kilometres of the study area, eleven are predicted to occur. There are no historical records of threatened flora species within the study area, and none were observed during the current assessment.

Twenty-two fauna species were recorded within the study area during the current assessment. This comprised 22 birds (four introduced, eighteen native). It is expected that a greater diversity of fauna species would be recorded with a greater amount of time on-site.

Only six threatened fauna species have been recorded within five kilometres of the study area, eleven are predicted to occur. There are no historical records of threatened fauna species within the study area, and none were observed during the current assessment. All of the threatened fauna species modelled to occur by the Protected Matters Search Tool, and recorded within the five-kilometre buffer area, are reliant on habitat components mostly absent from the study area and none are likely to regularly occur within the study area. The study area may provide foraging opportunities for Grey-headed Flying-fox *Pteropus poliocephalus* and airspace for birds such as White-throated Needletail *Hirundapus caudacutus,* however, the study area itself does not provide important resources to transient species such as these.

In this context, and based on the relevant legislation and policies, the following recommendations are made:

- To obtain regulatory approval:
    - Further alter the development design, if feasible, to avoid and minimise the impacts to native vegetation and biodiversity values in accordance with the *Guidelines for the Removal, Destruction or Lopping of Native Vegetation*;
    - Submit this report to Council to support the permit application for the removal of the isolated occurrences of native vegetation;
- Post approval, subject to regulatory approvals:
    - Engage a zoologist or wildlife handler salvage any wildlife from planted trees prior to their removal.
    - Prepare a Construction Environment Management Plan (or equivalent) which includes:
        - Protection of retained scattered trees within the study area (if any);
        - Using clean fill (if required);
        - Avoiding downstream and off-site impacts; and

- Measures to minimise impacts associated with weed introduction and spread targeting noxious weeds such as:
    - Blackberry *Rubus fruticosus spp. agg.*

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Introduction

Ecolink Consulting Pty Ltd was engaged by Crowther and Sadler Pty Ltd to undertake a Biodiversity Assessment for the proposed development of 374 Hendersons Road, Toongabbie, Victoria (the study area; Figure 1). The Biodiversity Assessment was undertaken to determine the ecological constraints of the study area and to support a planning permit application for the proposed construction of renewable energy facility.

The assessment addresses the requirements of Clause 52.17 of the Wellington Planning Scheme. Clause 52.17 requires mapping and assessing the location, extent and quality of native vegetation in accordance with the *Guidelines for the Removal, Destruction or Lopping of Native Vegetation* (Department of Environment Land Water and Planning 2017). The Biodiversity Assessment also identifies the likely ecological constraints of the study area and recommends mitigation measures and offset requirements based on other relevant legislation and policies, where appropriate.

Therefore, the purpose of the Biodiversity Assessment is to:

- Determine the ecological values of the study area;
- Evaluate the extent and quality of native vegetation within the study area, required under the *Guidelines for the Removal, Destruction or Lopping of Native Vegetation* (Department of Environment Land Water and Planning 2017);
- Evaluate any impacts that are likely to occur to any ecological values as a result of the potential loss of vegetation at the study area; and
- Make recommendations to avoid or mitigate impacts to identified ecological values, as appropriate.

Methods

Desktop Assessment

In order to determine the ecological values that have previously been recorded within the study area, and its vicinity, the following databases and literature were consulted:

- The Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) Protected Matters Search Tool to determine Matters of National Environmental Significance (MNES), under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act), that are modelled to occur in the vicinity of the study area (Department of Climate Change Energy the Environment and Water 2023a);
- Planning Maps to identify the planning zones and overlays relating to environmental matters e.g. Vegetation Protection Overlays or Environmental Significance Overlays (Department of Transport and Planning 2023);
- The NatureKit webpage (Department of Environment Land Water and Planning 2023d) from the Department of Energy, Environment, and Climate Action (DEECA) to identify the historic and current Ecological Vegetation Classes (EVCs);
- The Victorian Biodiversity Atlas (Department of Environment Land Water and Planning 2023g) for records of threatened[1] flora and fauna within three kilometres of the study area;
- Nearmap aerial photography to understand previous land use (Nearmap 2023);
- The Native Vegetation Information Management System (NVIM) to determine biodiversity offset requirements (Department of Environment Land Water and Planning 2023c);
- The 'Weeds of National Significance' database (Department of Climate Change Energy the Environment and Water 2023b);
- Other relevant legislation and policies (as required).

Site Assessment

A site assessment was undertaken on 29 August 2023 by Principal Ecologist Stuart Cooney and Botanist/Ecologist, Liam McCormack. Liam and Stuart are both suitably qualified and experienced to undertake such assessments and Liam holds a current Vegetation Quality Assessments (Habitat Hectares) Accreditation with DEECA (Department of Environment Land Water and Planning 2023f).

All flora species observed within the study area were recorded, with the exception of planted vegetation that was not considered a 'weed' (i.e. planted vegetation that was not spreading or reproducing). Where a species was not able to be confidently identified in the field, a sample was collected and later identified. Plants were identified to species level wherever possible, however, some plants that were planted, cultivars, hybrids, or plants that did not contain suitable fertile material used for identification were recorded to genus level.

[1] Threatened flora and fauna includes species listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999 (Cth)*, and the *Flora and Fauna Guarantee Act 1988 (Vic*).

Vegetation communities such as EVCs and nationally significant vegetation communities were recorded (if observed) and compared with their corresponding benchmarks or thresholds to ensure that they were accurately assigned.

A list of all fauna species observed within, and immediately surrounding, the study area was produced. This list consists of species seen, heard, or identified by other evidence of their presence (e.g. feathers, scats). Leica 12 X 50 binoculars and call mimicry/playback were used to assist in the identification species.

The species, size (Diameter and Breast Height and Tree Protection Zone) and location of all 'scattered' indigenous trees was recorded using an iPad mini tablet that has an internal Global Positioning System (GPS) and the GIS Pro application (accuracy +/- 5 metres). The presence of hollows and birds' nests was also noted.

The presence of fauna habitat was noted, particularly in relation to potential habitats for threatened species. The greatest amount of time was spent surveying the highest quality fauna habitats (e.g. trees, water bodies, crevices or underground debris) during the assessment.

Guidelines for the Removal, Destruction or Lopping of Native Vegetation

The *Guidelines for the Removal, Destruction or Lopping of Native Vegetation* (the Guidelines) (Department of Environment Land Water and Planning 2017) are required to be addressed under Clause 52.17 of the Planning Scheme. The Guidelines require that information regarding the biodiversity values of the site were obtained through:

- Site-based information that was measured or observed at a site, including:
  - Extent of native vegetation patches;
  - Large trees;
  - Native vegetation condition assessed in accordance with the *Vegetation Quality Assessment Manual – Guidelines for Applying the Habitat Hectares Scoring Method* (Department of Sustainability and Environment 2004);
  - Ecological Vegetation Classes (EVC); and
  - Sensitive wetlands and coastal areas.
- Landscape scale information that cannot be measured or observed at the site and includes maps and models procured from DEECA.

The Guidelines require a Habitat Hectare assessment in instances where the impact is to be assessed under the Detailed Assessment Pathway. It was not possible to determine the risk-based pathway for the loss of native vegetation prior to the site assessment, and we therefore opted to complete the Habitat Hectare assessment in accordance with the methodology prescribed within the *Vegetation Quality Assessment Manual – Guidelines for Applying the Habitat Hectares Scoring Method* (Department of Sustainability and Environment 2004) where patches[2] of vegetation were observed.

[2] A 'patch' is defined as an area with at least 25% cover abundance of perennial native vegetation, or a group (i.e. three or more) trees forming a continuous canopy.

All indigenous vegetation was assessed, and then assigned a quality rating based on the Habitat Hectare score (Department of Sustainability and Environment 2004). In addition, the location and species of indigenous 'scattered trees'[3], and any 'large trees'[4] within patches were mapped.

Limitations and Qualifications

The following limitations and qualifications apply to this report:

- The results of the desktop assessment are reliant on data obtained from various databases and other reports. These databases all have internal vetting procedures, however, the accuracy of the historical data and some of the results provided within these reports cannot be verified. The desktop assessment does, however, rely on the most accurate data available.
- As with all ecological assessments, a greater survey effort is likely to yield additional flora and fauna records. Where these additional flora and fauna records may alter the recommendations made within this report (e.g. where additional threatened species may utilise habitats within the study area, or where threatened species may be impacted by the proposed development), further assessment has been recommended within this report, depending on the implications of relevant policies and legislation.
- Late Winter is not the preferred time of year for ecological assessments. Some flora and fauna species may only be recorded during certain times or seasons (e.g. plants that only contain above-ground biomass and are only visible annually, nocturnal mammals and birds, migratory birds, or fauna identified through seasonal breeding calls such as some frog species).

On the basis of the above, the author has made an informed decision about the likely presence of threatened species that may be present, or that may utilise habitats within the study area, based on a desktop assessment, a review of the species' biology, and an understanding of the ecological values of the local area.

Despite the limitations to the assessment listed above, the results gained by both a desktop and a field-assessment are adequate to address the purposes of this report.

[3] Scattered trees are defined as a native canopy tree that does not form a patch

[4] Large trees are defined as meeting the size threshold specified in the bioregional EVC Benchmark

Results

The Study Area

Study Area Description and Land Use History

The study area largely follows the road reserve of Graham Road, with protrusions on the central eastern and north- eastern boundaries for the site of the proposed facility and to facilitate connections. It is bounded by agricultural and pastoral land, although the road reserves within the study area, and surrounds, retain some native vegetation.

Within the wider area, the site sits within a corridor between the foothills of the Victorian High Country and Holey Plains State Park, Stradbroke Flora and Fauna Reserve, and the eastern Strzeleckii Ranges. The study area is located between these two natural areas, in a flat landscape, largely utilised for agriculture, and the M1/A1 Freeway.

The study area itself is largely flat. It consists of four distinct sections, the Graham Road reserve, the Hendersons Road reserve, the centrally located paddock, and the extension in the south. Vegetation along Grahams Road was generally highly modified, with remnant areas sustaining some native shrubs and trees in isolated patches. Most of the vegetation in these northern areas was dominated by windrows of Monterrey Cyprus *Hesperocyparis macrocarpa.* The southern area largely consists of grazed pasture, with three native scattered trees. In the intersection of these two areas, occurs the best quality, woodland type vegetation, with the Hendersons Road road reserve (Plates 1-3).

Sources of water in the landscape include Fells Creek and Nambrok Denison Main Channel to the east of the study area, while a small dam occurs near the eastern boundary of the study area (Figure 1). The PMST also identifies The Gippsland Lakes Wetland of International Importance (Ramsar wetlands) within the same catchment as the study area, by a distance of approximately 20-30 kilometres.

Local Planning Controls

The study area is located within the Wellington Shire. It is zoned Farming Zone within the planning scheme. No ecologically relevant planning overlays, relevant to the current assessment, such as Environmental Significance, Vegetation Protection or Significant Landscape Overlays, cover the study area (Department of Environment Land Water and Planning 2023f).

Flora

Flora Communities

The study area is located within the Gippsland Plain bioregion of Victoria. DEECA modelling of the vegetation within the study area suggest it was historically covered by EVC 55: Plains Grassy Woodland. This EVC is described below:

- EVC 55: Plains Grassy Woodland is described as '*An open,* eucalypt *woodland to 15 m tall occurring on a number of geologies and soil types. Occupies poorly drained, fertile soils on flat or gently undulating plains at low elevations. The understorey consists of a few sparse shrubs over a species-rich grassy and herbaceous ground layer'* (Department of Environment Land

Water and Planning 2023a). EVC 55: Plains Grassy Woodland is listed as 'Endangered' within the bioregion.

Current vegetation modelling, by DEECA, suggests that EVC 55: Plains Grassy Woodland persists across some of the study area, which is generally consistent with the vegetation observed on site, during the current assessment.

Flora Species

Forty flora species were recorded during the current assessment (excluding the planted trees). This comprised 27 indigenous species and 13 exotic species (Table A1).

Most of the vegetation within the study area was modified from its remnant state to some extent and can broadly be broken down into three categories. The southern open paddocks, dominated by exotic pasture grasses. These areas consisted of species such as Toowoomba Canary Grass *Phalaris aquatica,* Sweet Vernal-grass *Anthoxanthum odoratum,* Yorkshire Fog-grass *Holcus lanatus* and environmental weeds, such as Ribwort *Plantago lanceolata* and Cape Weed *Arctotheca calendula* (Plate 4). These areas were observed to be devoid of native vegetation, excepting scattered trees; no vegetation qualified as a patch.

The second category occurred centrally, in the road reserves at the intersection of Graham and Henderson Roads. The vegetation in this area was observed to be of reasonably quality, when compared with other vegetation on site. This vegetation constituted Patch 1 and exhibited an overstorey component of Gippsland Red-gum *Eucalyptus tereticornis* and a midstorey of Blackwood *Acacia melanoxylon*, both of which were observed to be recruiting healthily. The understorey component, which largely consisted of grasses and sedges, included Kangaroo Grass *Themeda triandra*, Common Tussock-grass *Poa labillardierei*, Common Wallaby-grass *Rytidosperma caespitosum*, and Wattle-headed Mat-rush *Lomandra filiformis*. Some presences of herbs was noted, including Small Loose-strife *Lythrum hyssopifolia* and Nodding Salt-bush *Einadia nutans*. In areas were remnant grasses failed to subsist, exotic grass species such as Toowoomba Canary-grass, Yorkshire Fog and Sweet Vernal-grass dominated (Plates 5-6).

In the Graham Road road reserve, in the north of the study area, the vegetation intergraded with planted and introduced exotic species. Remnant patches of Burgan *Kunzea ericoides*, Blackwood, and Black Wattle *Acacia mearnsii* were observed amongst infestations of Toowoomba Canary-grass, Kikuyu and Monterey Pine wind rows. These areas contained Patches 2-14 and varied between four different compositions of vegetation strata. Patch 2 consisted totally of an understorey, made up of grass species such as Kangaroo Grass and Common Tussock Grass, and herbs such as Sheep's Burr *Acaena echinata* and Small Loose-Strife. Patch 3 consisted largely of a stand of Blackwoods and Burgan with some understorey of Supple Spear-grass *Austrostipa mollis* and Nodding Salt Bush. Patch 6 consisted only of Burgan, with some understorey of Common Tussock Grass. These three patches represent the three-differing compositions of strata across Patches 2-14 (Plates 7).

Vegetation Quality Assessment

The quality of vegetation within the patches recorded within the study area ranged from relatively moderate (31) to low (9):

- Patch 1 had a moderate Habitat Hectare score of 31 (out of 100);
- Patch 2 had a low Habitat Hectare score of 9 (out of 100);
- Patch 3 had a low Habitat Hectare score of 13 (out of 100);
- Patch 4 had a low Habitat Hectare score of 13 (out of 100);
- Patch 5 had a low Habitat Hectare score of 11 (out of 100);
- Patch 6 had a low Habitat Hectare score of 13 (out of 100);
- Patch 7 had a low Habitat Hectare score of 10 (out of 100);
- Patch 8 had a low Habitat Hectare score of 10 (out of 100);
- Patch 9 had a low Habitat Hectare score of 10 (out of 100);
- Patch 10 had a low Habitat Hectare score of 11 (out of 100);
- Patch 11 had a low Habitat Hectare score of 10 (out of 100);
- Patch 12 had a low Habitat Hectare score of 13 (out of 100);
- Patch 13 had a low Habitat Hectare score of 11 (out of 100); and,
- Patch 14 had a low Habitat Hectare score of 11 (out of 100).

Table 1. Habitat Hectare assessment results

Patch			Patch 1	Patch 2	Patch 3	Patch 4	Patch 5	Patch 6	Patch 7
Bioregion			Gipps Plain	Gipps Plain	Gipps Plain	Gipps Plain	Gipps Plain	Gipps Plain	Gipps Plain
EVC name			PGW	PGW	PGW	PGW	PGW	PGW	PGW
EVC number			55	55	55	55	55	55	55
Conservation rating within bioregion			Endangered	Endangered	Endangered	Endangered	Endangered	Endangered	Endangered
Assessment Criteria		**Max Score**	**Patch Score**	**Patch Score**	**Patch Score**	**Patch Score**	**Patch Score**	**Patch Score**	**Patch Score**
Site Condition	a. Large old trees	10	2	0	0	0	0	0	0
	b. Canopy cover	5	4	0	0	0	0	0	0
	c. Understorey	25	15	5	5	5	5	5	5
	d. Lack of weeds	15	0	0	0	0	0	0	0
	e. Recruitment	10	3	0	3	3	1	3	1
	f. Organic litter	5	5	2	3	3	3	3	2
	g. Logs	5	0	0	0	0	0	0	0
	h. Total (sum of a-g)	**75**	**29**	**7**	**11**	**11**	**9**	**11**	**8**
Standardised score		**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**
Landscape Value	j. Patch size	10	1	1	1	1	1	1	1
	k. Neighbourhood	10	0	0	0	0	0	0	0
	l. Distance to core	5	1	1	1	1	1	1	1
m. Habitat Score (sum of h-l)		**100**	**31**	**9**	**13**	**13**	**11**	**13**	**10**
n. Habitat score out of 1 (m÷100)		1	**0.31**	**0.9**	**0.13**	**0.13**	**0.11**	**0.13**	**0.10**
Large Trees			**2**	**0**	**0**	**0**	**0**	**0**	**0**

Table Notes:

PGW - Plains Grassy Woodland, Gipps Plain – Gippsland Plain

Patch			Patch 8	Patch 9	Patch 10	Patch 11	Patch 12	Patch 13	Patch 14
Bioregion			Gipps Plain	Gipps Plain	Gipps Plain	Gipps Plain	Gipps Plain	Gipps Plain	Gipps Plain
EVC name			PGW	PGW	PGW	PGW	PGW	PGW	PGW
EVC number			55	55	55	55	55	55	55
Conservation rating within bioregion			Endangered	Endangered	Endangered	Endangered	Endangered	Endangered	Endangered
Assessment Criteria		**Max Score**	**Patch Score**	**Patch Score**	**Patch Score**	**Patch Score**	**Patch Score**	**Patch Score**	**Patch Score**
Site Condition	a. Large old trees	10	0	0	0	0	0	0	0
	b. Canopy cover	5	0	0	0	0	0	0	0
	c. Understorey	25	5	5	5	5	5	5	5
	d. Lack of weeds	15	0	0	0	0	0	0	0
	e. Recruitment	10	1	1	1	1	3	1	1
	f. Organic litter	5	2	2	3	2	3	3	3
	g. Logs	5	0	0	0	0	0	0	0
	h. Total (sum of a-g)	**75**	**8**	**8**	**9**	**8**	**11**	**9**	**9**
Standardised score		**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**
Landscape Value	j. Patch size	10	1	1	1	1	1	1	1
	k. Neighbourhood	10	0	0	0	0	0	0	0
	l. Distance to core	5	1	1	1	1	1	1	1
m. Habitat Score (sum of h-l)		**100**	**10**	**10**	**11**	**10**	**13**	**11**	**11**
n. Habitat score out of 1 (m÷100)		1	**0.11**	**0.10**	**0.11**	**0.10**	**0.13**	**0.11**	**0.11**
Large Trees			**0**	**0**	**0**	**0**	**0**	**0**	**0**

Table Notes:

PGW - Plains Grassy Woodland, Gipps Plain – Gippsland Plain

Scattered Tree Assessment

A scattered tree assessment was undertaken on indigenous trees located outside of the patches of native vegetation (Table 1), (Figure 1).

Table 2. Scattered Tree Assessment results.

Tree No	Common Name	Species Name	Size (DBH cm)	Tree Protection Zone (m)	Latitude	Longitude
1	Eucalypt spp.	Dead	98	15	146.69793	-38.10120
2	Gippsland Red-gum	*Eucalyptus tereticornis*	96	10.8	146.69936	-38.09764
3	Gippsland Red-gum	*Eucalyptus tereticornis*	98	15	146.69956	-38.09497
4	Gippsland Red-gum	*Eucalyptus tereticornis*	42	4.8	146.70012	-38.09203
5	Gippsland Red-gum	*Eucalyptus tereticornis*	42	2	146.70151	-38.08633

Threatened Flora Species and Ecological Communities

No threatened flora species have previously been recorded within five kilometres of the study area (Department of Environment Land Water and Planning 2023g). Eleven species are predicted to occur within the study area, based on the Protected Matters Search Tool (Department of Climate Change Energy the Environment and Water 2023a). A consolidated list of these threatened flora species, as well as their conservation status under the EPBC Act, the *Flora and Fauna Guarantee Act 1988* (Vic) (FFG Act) Threatened List: May 2023 (Department of Environment Land Water and Planning 2023b), their preferred habitats and the likelihood of occurrence for each species is provided in Table A3.

There are no historical records of threatened flora species within the study area, and none were observed during the current assessment.

The modelling used by the Protected Matters Search Tool suggests that one nationally significant vegetation community may also occur within the study area: Gippsland Red Gum (*Eucalyptus tereticornis* subsp. *mediana*) Grassy Woodland and Associated Native Grassland (Critically Endangered).

Whilst much of the strata necessary to classify this community was present, it could not be classified as such due to lower than necessary cover abundances of native grasses and sedges. Therefore, it is concluded that no threatened vegetation communities are present within the study area.

Fauna

Fauna Species and Habitats

Twenty-two fauna species were recorded within the study area during the current assessment. This comprised of 22 birds (18 native, four introduced). All of these species are common to the area. No reptiles, were, recorded during the assessment, although it is likely that other skinks, and snakes, would occur within the study area, amongst areas containing understorey vegetation and organic litter or debris. It is expected that a greater diversity of fauna species would be recorded with a greater amount of time on-site.

The wooded areas that comprise the area adjacent Hendersons Road, and the fragmented patches along Grahams Road, provided habitat to bird species such as Brown Thornbill *Acanthiza pusilla*, Grey Fantail *Rhipidura albiscapa*, Striated Pardalote *Pardalotus striata*, and Superb Fairywren *Malurus cyaneus*. Whilst generalist species, such as Australian Magpie *Gymnorhina tibicen* and Noisy Miner *Manorina melanocephala*, which are widespread and common species throughout Victoria, were observed utilising the degraded southern pasture.

Threatened Fauna Species and Communities

Six threatened fauna species have previously been recorded within five kilometres of the study area (Department of Environment Land Water and Planning 2023g) (Figure 2). A further 22 species threatened fauna species are predicted to occur within the study area, based on the Protected Matters Search Tool (Department of Climate Change Energy the Environment and Water 2023a). A consolidated list of these threatened fauna species, as well as their conservation status under the EPBC Act and the FFG Act Threatened List: May 2023 (Department of Environment Land Water and Planning 2023b), their preferred habitats and the likelihood of occurrence for each species is provided in Table A4.

There are no historical records of threatened fauna species within the study area, and no threatened fauna species were recorded during the current assessment (Table A4, Figure 2). Many of the species modelled to occur by the Protected Matters Search Tool, and recorded within the five-kilometre buffer area, are species that are entirely dependent on habitats that are not provided by the study area, like wetland and aquatic species such as ducks, shorebirds and fish. None of these species are likely to be impacted by the proposed development of the study area.

The study area may provide air space over which some threatened species, such as White-throated Needletails *Hirundapus caudacutus,* and Grey-headed Flying-fox *Pteropus poliocephalus* may fly on occasions when moving around the landscape. However, the study area itself does not provide important resources to these types of transient species, and the development of the study area is unlikely to impact these threatened fauna species.

Woodland bird species such as Diamond Firetail *Stagonopleura guttata* are unlikely to use the study area, due to it being largely fragmented, and not contiguous with any robust habitat. It should be noted that the habitat on site is largely unsuitable for most of the identified threatened fauna species, such as the frogs, fish, and waterbirds, as the study area does not contain any water, the proposed works will not impacts any nearby aquatic habitats and nearby water sources are unlikely to provide necessary habitat components for these species in any case.

Discussion

A detailed summary of the legislation that was considered when preparing this report is provided in Appendix 2. The discussion presented in this section of the report does not reiterate information provided in Appendix 2, but summarises the results and recommendations arising from the interpretation of this legislation.

Environment Protection and Biodiversity Conservation Act 1999 (Cth)

The desktop assessment identified eleven threatened flora and 28 threatened fauna species, as well as one threatened ecological communities, listed under the EPBC Act, which may occur within or near the study area.

Almost all the EPBC Act-listed flora and fauna species that were identified during the desktop assessment, are, in fact, unlikely to occur due to the absence of suitable habitats or the degraded nature of habitats within the study area. There is a moderate likelihood that Grey-headed Flying-foxes or White-throated Needletails fly over the study area, however the proposed development is unlikely to significantly impact either of these species, because neither of these species are likely to rely on the habitat within the study area for important phases of their lifecycle.

Flora and Fauna Guarantee Act 1988 (Vic)

The desktop assessment identified eleven flora species and 28 fauna species listed under the FFG Act that may occur within the study area (Tables A3 and A4). As stated above, there is a moderate likelihood that some mobile animals, with large home ranges, may utilise or fly over the study area on occasion (White-throated Needletails, or Grey-headed Flying Foxes), however the proposed development is unlikely to significantly impact any of these species.

The FFG Act, which was amended in 2021, contains an obligation or duty on public authorities and ministers to consider potential biodiversity impacts when exercising their functions. The FFG Act requires ministers and public authorities (including Councils) reasonably consider the objectives of the Act where projects may impact upon biodiversity, so far as is consistent with the proper exercising of their functions. It is therefore anticipated that regulators (DEECA and Wellington Shire) will give due consideration to the FFG Act when considering the approval for the project.

The FFG Act also lists species as 'protected flora' on public land. Protected flora includes whole families or genera, (as well as species), such as daisies, heaths, orchids, and most Acacias. These species and genera are not necessarily regarded as threatened but require an approved *Permit to Take Protected Flora* from DEECA prior to their removal when located on public land (including road reserves). As no specimens of protected flora were observed within the study area, a *Permit to Take Protected Flora* is not required for further works.

Planning and Environment Act 1987 (Vic)

Due to the presence of native vegetation within the study area, the proposed development would require a planning permit from the Wellington Shire under Clause 52.17 prior to the removal,

destruction or lopping of native vegetation (Department of Environment Land Water and Planning 2023e). The applicant is required to demonstrate how it applied the three-step approach to avoid, minimise, and offset impacts to native vegetation (discussed below).

Catchment and Land Protection Act 1994 (Vic)

Primary considerations of the *Catchment and Land Protection Act 1994* (Vic) relate to soil and water conservation, as well as the management of pest plants and animals. Three weed species that are listed as 'noxious' within the North Central Catchment Management Area were present within the study area (Table A1, Appendix 1). These weeds include:

- Blackberry which is listed as *'Regionally Controlled'* within the catchment. The proponent is required to 'control the spread' of all 'regionally controlled' species from their property; and

Blackberry is also listed as a 'Weed of National Significance', although there are no additional legislative obligations to manage weeds under this listing.

The project should aim to remove these plants when construction commences, and ensure they are removed during the future the landscaping and maintenance of the study area. It is expected that weed management would form a section of a Construction Environmental Management Plan (or equivalent). As a minimum, this should include:

- Controlling weeds prior to the commencement of works, during works and after works are complete;
- Implementing vehicle, plant and equipment hygiene procedures to mitigate the importation and spread of noxious and environmental weeds;
- Using clean fill (if required);
- Avoiding downstream and off-site impacts; and
- Avoiding the use of noxious species and environmental weeds during future landscaping of the property.

Wildlife Act 1975 (Vic)

It is likely that some locally common species of fauna will be displaced by the proposed development. Furthermore, there remains a low likelihood that animals may be accidentally injured when disturbing soil and removing vegetation. All native vertebrate wildlife is protected under the *Wildlife Act 1975* (Vic), and therefore contractors must use due care when removing vegetation and fill from the study area. It is recommended that a zoologist or wildlife handler salvage any wildlife from trees prior to their removal. It is also recommended that fauna management protocols be included in the Construction Environment Management Plan recommended above.

Guidelines for the Removal, Destruction or Lopping of Native Vegetation

The Three-step Approach

Applicants who wish to remove native vegetation must generally demonstrate how the application meets the three-step approach to:

1. Avoid the removal, destruction or lopping of native vegetation;
2. Minimise impacts from the removal, destruction or lopping of native vegetation that cannot be avoided; and
3. Provide an offset to compensate for the biodiversity impact from the removal, destruction or lopping of native vegetation (Department of Environment Land Water and Planning 2017).

This should be generally be demonstrated through appropriate design.

Avoidance and Minimisation Statement

Avoidance is generally demonstrated through appropriate development design. It is recommended that, where practicable:

- Development design is considerate of the native vegetation and that impacts are sited away from native vegetation;
- When considering the removal of native vegetation, priority is given to:
    - Vegetation which has the highest quality native vegetation (Patch 1);
    - The retention of patches of native vegetation; and
    - The retention of large healthy trees;
    -
- Retained trees include protection of the Tree Protection Zone identified within the *Australian Standards for the Protection of Trees on Development Sites* (Standards Australia 2009);
- Vegetation which is to be retained is protected from construction activities, in accordance with a Construction Environment Management Plan; and,
- Appropriate offsets for any approved residual impacts to native vegetation are secured through a DEECA accredited Offset Broker.

In this instance, the suggested layout avoids much of the best quality vegetation found in Patch 1. The proposed access driveway and Graham Road extension occurs amongst degraded pasture vegetation with no effect on native species. Furthermore, the underground transmission line has been proposed to be installed within Graham Road itself, not the roadside reserve. In this sense, the initial layout design has taken several steps to largely avoid any direct impacts to native vegetation on the site.

If the option of situating the transmission cable within Graham Road is unsuitable, it is recommended that Horizontal Direction Drilling (HDD) be considered. The western verge of Graham Road exhibits small patches of native vegetation, and the inter-patch areas are totally devoid of native vegetation. By strategically locating pits, HDD is likely to avoid any impacts to native vegetation along the western side of Graham Road. As a final approach, trenching along the western Graham Road road reserve will result in impacts to native vegetation and offsets for these impacts will be required.

Offsets

Offsets can be calculated for the proposed works once a final development footprint has been confirmed.

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Plates

Plate 1. Monterey Pine windrows, that dominate much of the western Graham Road road reserve.

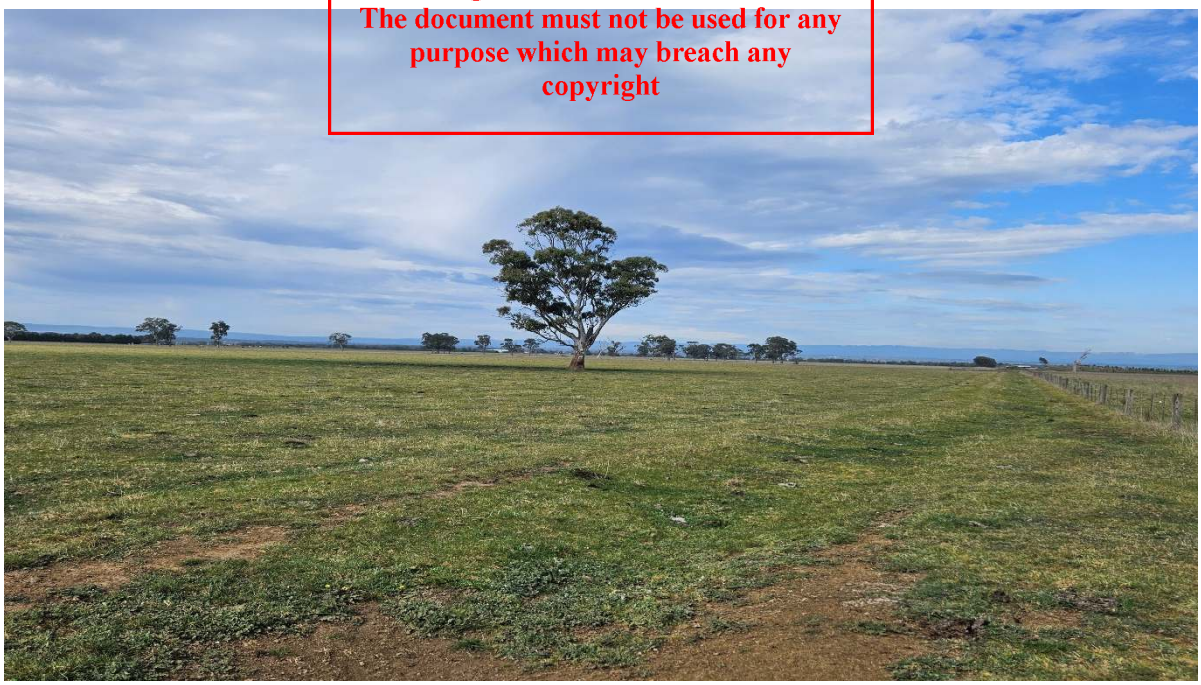

Plate 2. The southern extension, hosting exotic pasture vegetation, with occasional scattered Gippsland Red-gums.

Plate 3. The centrally located Patch 1, consisting largely of a canopy of Gippsland Red-gums and an understorey of native grasses and sedges.

Plate 4. The typical weed species composition within the pasture areas, note the high presence of Cape-weed.

Plate 5. Nodding Salt-bush observed in Patch 1.

Plate 6. Native grass dominated understorey observed in Patch 1, including Kangaroo Grass and Wattle-headed Mat-rush.

Plate 7. Some of the remnant natives observed amongst the Monterey Pine windrows, this specimen being Nodding Salt-bush.

Figures

TOONGABBIE

WINNINDOO

GRAHAM ROAD

HENDERSONS ROAD

0 50 100 150 200
Meters

Figure 1: Results of the current assessment.

Graham Lane, Toongabbie, Victoria

Legend

- Study Area
- Patches of Native Vegetation
- Large Trees in Patches
- Scattered Trees

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Melbourne
WELLINGTON
Study Area

Figure 2: Threatened flora and fauna within 5kms of the study area.

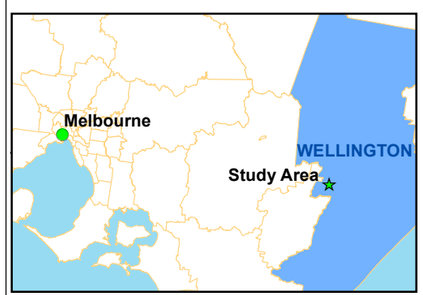
Graham Road, Toongabbie, Victoria

Legend

- Study Area
- 3km Study Area Buffer

Common Name

- Diamond Firetail
- Gang-gang Cockatoo
- Hardhead
- White-bellied Sea-Eagle
- White-throated Needletail
- Growling Grass Frog



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Note: Some records have been shifted slightly for display purposes

Appendices

Appendix 1. Flora and Fauna Tables

Table A1. Flora species recorded within the study area

Origin	Common Name	Scientific Name	Weeds of National Significance	Noxious Weeds Classification
*	Aster-weed	*Symphyotrichum subulatum*	-	-
*	Barley Grass	*Hordeum marinum*	-	-
	Black Wattle	*Acacia mearnsii*	-	-
*	Blackberry	*Rubus fruticosus* spp. agg.	Yes	Regionally Controlled
	Blackwood	*Acacia melanoxylon*	-	-
	Burgan	*Kunzea ericoides* s.l.	-	-
*	Cape Weed	*Arctotheca calendula*	-	-
*	Clustered Dock	*Rumex conglomeratus*	-	-
*	Cocksfoot	*Dactylis glomerata*	-	-
*	Common Peppercress	*Lepidium africanum*	-	-
	Common Tussock-grass	*Poa labillardierei* var. *labillardierei*	-	-
	Common Wallaby-grass	*Rytidosperma caespitosum*	-	-
*	Drain Flat-sedge	*Cyperus eragrostis*	-	-
	Finger Rush	*Juncus subsecundus*	-	-
*	Flatweed	*Hypochaeris radicata*	-	-
	Gippsland Red-gum	*Eucalyptus tereticornis subsp. mediana*	-	-
*	Great Brome	*Bromus diandrus*	-	-
	Kangaroo Grass	*Themeda triandra*	-	-
*	Kikuyu	*Cenchrus clandestinus*	-	-
*	Monterey Cypress	*Hesperocyparis macrocarpa*	-	-
	Nodding Saltbush	*Einadia nutans*	-	-
*	Onion Grass	*Romulea rosea*	-	-
*	Ox-tongue	*Helminthotheca echioides*	-	-
*	Panic Veldt-grass	*Ehrharta erecta*	-	-
*	Paspalum	*Paspalum dilatatum*	-	-
*	Perennial Rye-grass	*Lolium perenne*	-	-
*	Rat-tail Grass	*Sporobolus africanus*	-	-
*	Ribwort	*Plantago lanceolata*	-	-
	Sheep's Burr	*Acaena echinata*	-	-
	Small Loosestrife	*Lythrum hyssopifolia*	-	-

Origin	Common Name	Scientific Name	Weeds of National Significance	Noxious Weeds Classification
*	Small-flower Mallow	*Malva parviflora*	-	-
*	Spiny Sow-thistle	*Sonchus asper*	-	-
*	Stinging Nettle	*Urtica dioica*	-	-
	Supple Spear-grass	*Austrostipa mollis*	-	-
*	Sweet Briar	*Rosa rubiginosa*	-	-
*	Sweet Vernal-grass	*Anthoxanthum odoratum*	-	-
*	Tall Fleabane	*Erigeron sumatrensis*	-	-
*	Toowoomba Canary-grass	*Phalaris aquatica*	-	-
	Wattle Mat-rush	*Lomandra filiformis*	-	-
*	Yorkshire Fog	*Holcus lanatus*	-	-

Table Notes:

* – Exotic # – naturalised

This table does not include ornamental plants, trees or shrubs that were not spreading or reproducing beyond where they were planted.

Table A2. Fauna species recorded within the study area

Origin	Common Name	Species Name
Birds		
	Australian Magpie	*Gymnorhina tibicen*
	Australian Wood Duck	*Chenonetta jubata*
	Brown Thornbill	*Acanthiza pusilla*
	Crested Pigeon	*Ocyphaps lophotes*
	Crimson Rosella	*Platycercus elegans*
	Eastern Rosella	*Platycercus eximius*
	Galah	*Eolophus roseicapilla*
	Grey Butcherbird	*Caractacus torquatus*
	Grey Fantail	*Rhipidura albiscapa*
	Grey Shrike-thrush	*Colluricincla harmonica*
	Little Raven	*Corvus mellori*
	Magpie-lark	*Grallina cyanoleuca*
	Noisy Miner	*Manorina melanocephala*
	Red Wattlebird	*Anthochaera carunculata*
	Striated Pardalote	*Pardalotus striata*
	Sulphur-crested Cockatoo	*Cacatua galerita*
	Superb Fairywren	*Malurus cyaneus*
	Willie Wagtail	*Rhipidura leucophrys*
*	Common Starling	*Sturnus vulgaris*
*	Common Myna	*Acridotheres tristis*
*	Eurasian Skylark	*Alauda arvensis*
*	European Rabbit	*Oryctolagus cuniculus*

Definitions

* - Introduced species

Table A3. Threatened flora species that have previously been recorded within, or within five kilometres of the study area (Department of Environment Land Water and Planning 2023g), or that has habitat that may occur within the vicinity of the study area (Department of Climate Change Energy the Environment and Water 2023a).

Common Name	Species Name	National Status	FFG Act Status	Habitat Preferences	Most Recent Record	Habitat Present on Site	Likelihood of Presence*
Austral Toad-flax	*Thesium australe*	Vulnerable	Endangered	A semi-parasitic on roots of a range of grass species, notably Kangaroo Grass.	NPR	No	Unlikely
Clover Glycine	*Glycine latrobeana*	Vulnerable	Vulnerable	Grassy woodland; plains grassland; box woodland; dry sclerophyll forest.	NPR	No	Unlikely
Dwarf Kerrawang	*Commersonia prostrata*	Endangered	Endangered	Swampy land and lake margins in the Rosedale-Stradbroke Providence Ponds area	NPR	No	Unlikely
Green-striped Greenhood	*Pterostylis chlorogramma*	Vulnerable	Endangered	Open forest and woodland	NPR	No	Unlikely
Matted Flax-lily	*Dianella amoena*	Endangered	Critically Endangered	Grassy Wetland; Red Gum woodland; plains grassland; grassy woodlands.	NPR	No	Unlikely
Metallic Sun-orchid	*Thelymitra epipactoides*	Endangered	Endangered	Mainly coastal areas, although occurs inland on fertile loams, scrubby heaths or near swampy depressions.	NPR	No	Unlikely
River Swamp Wallaby-grass	*Amphibromus fluitans*	Vulnerable	-	Beside swamps in grassy low open forest, riparian scrub. Required moist soils, tolerates inundation.	NPR	No	Unlikely
Swamp Everlasting	*Xerochrysum palustre*	Vulnerable	Critically Endangered	Seasonal or permanent wetlands	NPR	No	Unlikely
Swamp Fireweed	*Senecio psilocarpus*	Vulnerable	-	High-quality herb-rich wetlands on plains	NPR	No	Unlikely
Thick-lip Spider-orchid	*Caladenia tessellata*	Vulnerable	-	Grassy sclerophyll woodland on clay loam or sandy soils	NPR	No	Unlikely

Common Name	Species Name	National Status	FFG Act Status	Habitat Preferences	Most Recent Record	Habitat Present on Site	Likelihood of Presence*
Trailing Hop-bush	*Dodonaea procumbens*	Vulnerable	-	Low lying areas in eucalypt woodlands and forests in sandy and clay soil. Often waterlogged	NPR	No	Unlikely

Table Notes:

NPR – Not previously recorded

*** Likelihood of Presence Definitions**:

Unlikely – Site does not contain habitat and/or it is outside the species' known, current distribution.

Low –Site contains some marginal habitat, but the species was not observed and has not been recently recorded in previous surveys in the area.

Moderate – Site contains preferred habitat that may support a population of the species. However, other factors, such as fragmentation, disturbance or predators may be impacting any local population.

High - Site contains the preferred habitat which is likely to support the species.

Present – Preferred habitat is present on the site, and the species was observed on the site, or recently recorded at the site.

NPR – No previous record, modelled presence only under the EPBC Protected Matters Search results.

Table A4. Threatened fauna species that have previously been recorded within, or within five kilometres of the study site (Department of Environment Land Water and Planning 2023g), or that has habitat that may occur within the vicinity of the site (Department of Climate Change Energy the Environment and Water 2023a).

Common Name	Species Name	EPBC Act Status	FFG Act Status	Habitat Preferences	Most Recent Record	Habitat Present on Site	Likelihood of Presence*
Birds							
Hardhead	*Aythya australis*	-	Vulnerable	Deep, vegetated swamps, open water.	2015 (1)	No	Unlikely
White-throated Needletail	*Hirundapus caudacutus*	Vulnerable	Vulnerable	Aerial insectivore that rarely lands to perch, often sleeping on the wing	1981 (3)	No	Low
Australian Painted-snipe	*Rostratula australis*	Endangered	Critically Endangered	Uncommon summer migrant to Victoria. Lowlands on shallow freshwater swamps with emergent vegetation, and flooded salt marshes.	NPR	No	Unlikely
Eastern Curlew	*Numenius madagascariensis*	Critically Endangered	Critically Endangered	Estuaries, tidal mudflats, mangroves, shallow river margins, coastal or inland	NPR	No	Unlikely
Curlew Sandpiper	*Calidris ferruginea*	Critically Endangered	Critically Endangered	Estuaries, tidal mudflats, mangroves, shallow river margins, coastal or inland	NPR	No	Unlikely
Australasian Bittern	*Botaurus poiciloptilus*	Endangered	Critically Endangered	Reed beds, dense vegetation of freshwater swamps and creeks.	NPR	No	Unlikely
White-bellied Sea-Eagle	*Haliaeetus leucogaster*	-	Endangered	Oceanic / coastal and larger inland waterways.	2015 (2)	No	Unlikely
Grey Falcon	*Falco hypoleucos*	-	Vulnerable	Shrubland, grassland and wooded watercourses of arid and semi-arid regions, although it is occasionally found in open woodlands near the coast	NPR	No	Unlikely

Common Name	Species Name	EPBC Act Status	FFG Act Status	Habitat Preferences	Most Recent Record	Habitat Present on Site	Likelihood of Presence*
Glossy Black-Cockatoo	*Calyptorhynchus lathami*	-	Vulnerable	Typically found in eucalypt forests and woodlands containing a high density of their main food source, the Black She-oak Allocasuarina littoralis	NPR	No	Unlikely
Gang-gang Cockatoo	*Callocephalon fimbriatum*	Endangered	Endangered	They inhabit cool, wet forests, particularly alpine bushland, but may visit urban parks and gardens to feed	1977 (1)	No	Unlikely
Swift Parrot	*Lathamus discolor*	Critically Endangered	Critically Endangered	Winter migrant from Tasmania. Generally prefers Box-Ironbark forests and woodlands inland of the Great Dividing Range during winter.	NPR	No	Unlikely
Blue-winged Parrot	*Neophema chrysostoma*	Vulnerable	-	A range of habitats from coastal, sub-coastal and inland areas, right through to semi-arid zones	NPR	No	Unlikely
Brown Treecreeper	*Climacteris picumnus*	Vulnerable	-	Dry woodland; forest clearings, eucalypts along streams.	NPR	No	Unlikely
Painted Honeyeater	*Grantiella picta*	Vulnerable	Vulnerable	Open box-ironbark forests and woodlands, particularly where trees are infested with mistletoe.	NPR	No	Unlikely
Regent Honeyeater	*Anthochaera phrygia*	Critically Endangered	Critically Endangered	Depends on nectar and insects from Box-Ironbark Eucalypt forests. Only breeding habitat lies in Northeast Victoria and central coast of NSW	NPR	No	Unlikely
Pilotbird	*Pycnoptilus floccosus*	Vulnerable	Vulnerable	Temperate wet sclerophyll forests and occasionally temperate rainforest, where there is dense undergrowth with abundant debris	NPR	No	Unlikely

Common Name	Species Name	EPBC Act Status	FFG Act Status	Habitat Preferences	Most Recent Record	Habitat Present on Site	Likelihood of Presence*
Hooded Robin	*Melanodryas cucullata*	Endangered	Vulnerable	Lightly timbered woodland, mainly dominated by acacia and/or eucalypts.	NPR	No	Unlikely
Diamond Firetail	*Stagonopleura guttata*	Vulnerable	Vulnerable	Open grassy woodland, heath and farmland or grassland with scattered trees.	1978 (1)	No	Unlikely
Mammals							
Spot-tailed Quoll	*Dasyurus maculatus maculatus*	Endangered	Endangered	Forests including large intact areas of vegetation for foraging.	NPR	No	Unlikely
Yellow-bellied Glider	*Petaurus australis*	Vulnerable	Vulnerable	Occur in tall mature eucalypt forest generally in areas with high rainfall and nutrient rich soils	NPR	No	Unlikely
New Holland Mouse	*Pseudomys novaehollandiae*	Vulnerable	Endangered	Heathlands, woodlands with a heathy understorey, open forest and vegetated sand dunes - in areas with soft, deep sandy soil in which to make burrows.	NPR	No	Unlikely
Grey-headed Flying-fox	*Pteropus poliocephalus*	Vulnerable	Vulnerable	Roost sites commonly occur in gullies, in vegetation with dense canopy cover and close to water.	NPR	No	Low
Frogs							
Green and Golden Bell Frog	*Litoria aurea*	Vulnerable	-	Permanent lakes, swamps, dams and lagoons.	NPR	No	Unlikely
Growling Grass Frog	*Litoria raniformis*	Vulnerable	Vulnerable	Permanent lakes, swamps, dams and lagoons.	1900 (1)	No	Unlikely
Reptiles							

Common Name	Species Name	EPBC Act Status	FFG Act Status	Habitat Preferences	Most Recent Record	Habitat Present on Site	Likelihood of Presence*
Striped Legless Lizard	*Delma impar*	Vulnerable	Endangered	Lowland native grasslands, typically dominated by native tussock forming grasses. Typically occurs on deep cracking clay soils.	NPR	No	Unlikely
Swamp Skink	*Lissolepis coventryi*	-	Endangered	Low lying wetlands including swamp margins, tea tree thickets.	NPR	No	Unlikely
Fish							
Australian Grayling	*Prototroctes maraena*	Vulnerable	Endangered	Clear gravelly streams; deep slow flowing pools.	NPR	No	Unlikely
Dwarf Galaxias	*Galaxiella pusilla*	Vulnerable	Endangered	Slow moving waters, including ephemeral drains.	NPR	No	Unlikely

Table Notes:

This table excludes species listed exclusively as 'migratory' or 'marine' under the EPBC Protected Matters Search results.

NPR – Not previously recorded

*** Likelihood of Presence Definitions:**

Unlikely – Site does not contain habitat and/or it is outside the species' known, current distribution. Birds and bats may fly over.

Low –Site contains some marginal habitat, but the species was not observed and has not been recorded in previous recent surveys in the area. Birds and bats may fly over.

Moderate – Site contains preferred habitat that may support a population of the species. Birds and bats may opportunistically or seasonally forage at the site.

High – Site contains preferred habitat which is likely to support the species. Birds and bats are likely to regularly (at least seasonally) forage or roost at the site.

Present – Preferred habitat is present on the site, and the species was observed on the site, or recently recorded on the site.

NPR– No previous record, modelled presence only under the EPBC Protected Matters Search results.

Appendix 2. Legislation

Commonwealth Legislation

***Environment Protection and Biodiversity Conservation Act 1999* (Cth)**

The *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) is to provide for the conservation of 'Matters of National Environmental Significance'. The Act defines eight Matters of National Environmental Significance:

- World Heritage properties;
- National Heritage Places;
- Ramsar wetlands of international significance;
- Nationally listed threatened species and ecological communities;
- Listed migratory species;
- Commonwealth marine areas;
- The Great Barrier Reef Marine Park; and,
- Nuclear actions.

Under the Act, actions that are likely to have a significant impact upon Matters of National Environmental Significance require approval from the Federal Environment Minister. This approval is sought through a referral process for a particular action. An action includes any project, development, undertaking, activity or series of activities. Consideration of the requirement for an 'EPBC Referral' to the Minister has been made within this report.

State Legislation

Environmental Effects Act

The *Environment Effects Act 1978* (Vic) provides for assessment of proposed projects (works) that are capable of having a significant effect on the environment. The Act does this by enabling the Minister administering the Environment Effects Act to decide that an Environment Effects Statement (EES) should be prepared.

The Minister might typically require a proponent to prepare an EES when:

- There is a likelihood of regionally or State significant adverse effects on the environment;
- There is a need for integrated assessment of potential environmental effects (including economic and social effects) of a project and relevant alternatives; and,
- Normal statutory processes would not provide a sufficiently comprehensive, integrated and transparent assessment (Department of Sustainability and Environment 2007).

Referral criteria: individual potential environmental effects

- Individual types of potential effects on the environment that might be of regional or State significance, and therefore warrant referral of a project, are:
- Potential clearing of 10 ha or more of native vegetation from an area that:
    - is of an Ecological Vegetation Class identified endangered by the Department of Sustainability and Environment (in accordance with Appendix 2 of Victoria's Native Vegetation Management Framework); or

  - is, or is likely to be, of very high conservation significance (as defined in accordance with Appendix 3 of Victoria's Native Vegetation Management Framework); and
  - is not authorised under an approved Forest Management Plan or Fire Protection Plan
- Potential long-term loss of a significant proportion (e.g. 1 to 5 percent depending on the conservation status of the species) of known remaining habitat or population of a threatened species within Victoria;
- Potential long-term change to the ecological character of a wetland listed under the Ramsar Convention or in 'A Directory of Important Wetlands in Australia';
- Potential extensive or major effects on the health or biodiversity of aquatic, estuarine or marine ecosystems, over the long term;
- Potential extensive or major effects on the health, safety or well-being of a human community, due to emissions to air or water or chemical hazards or displacement of residences; and,
- Potential greenhouse gas emissions exceeding 200,000 tonnes of carbon dioxide equivalent per annum, directly attributable to the operation of the facility (Department of Sustainability and Environment 2007).

***Flora and Fauna Guarantee Act 1988* (Vic)**

The *Flora and Fauna Guarantee Act 1998* (Vic) (FFG Act) provides a legal framework for enabling and promoting the conservation of all Victoria's native flora and fauna, and to enable management of potentially threatening processes on public land. The Act lists native species, communities, and processes that threaten native flora and fauna, under Schedules of the Act. This enables the assessor and regulators to establish management measures to mitigate impacts on listed values within Victoria.

The FFG Act was amended in 2021 and now contains an obligation or duty on public authorities and ministers to consider potential biodiversity impacts when exercising their functions. The FFG Act requires ministers and public authorities (including Councils) reasonably consider the objectives of the Act where projects may impact upon biodiversity, so far as is consistent with the proper exercising of their functions.

The types of potential impacts on biodiversity that should be considered include:

- Long and short term impacts;
- Detrimental and beneficial impacts;
- Direct and indirect impacts;
- Cumulative impacts; and,
- Potentially threatening processes (Department of Environment Land Water and Planning 2021).

It is therefore anticipated that regulators will give due consideration to the FFG Act when considering the approval for the project.

In additional, a 'Permit to Take Protected Flora' is required to 'take' listed flora species that are members of listed communities or protected flora from public land. 'Taking' flora is defined as any action which results in the removal or death of a native plant. A permit is not required under the FFG

Act for private land, unless listed species are present and the land is declared 'critical habitat' for the species. On public land the permit is issued by DELWP.

An evaluation of the likelihood of the presence of significant flora and fauna species on the subject site, including those listed under the FFG Act that have previously been recorded in the vicinity of the site, has been undertaken.

***Planning and Environment Act 1987* (Vic)**

The *Planning and Environment Act 1987* (Vic) (P&E Act), later amended by the *Planning and Environment (Planning Schemes) Act 1996* (Vic) provides the foundation of planning schemes in Victoria. Planning schemes set out policies and provisions for the development and protection of land within each municipality in Victoria.

The *Planning and Environment (Planning Schemes) Act 1996* provides for the Minister for Planning to prepare a set of standard provisions for planning schemes called the Victoria Planning Provisions (VPP). The VPP is a state-wide reference document or template from which planning schemes are sourced and constructed. Incorporation of references such as the *Guidelines for the Removal Destruction or Lopping of Native Vegetation* into Section 12 of the VPP ensures that all municipalities must consider this policy. Local zones and overlays, such as Environmental Significance Overlays, may be incorporated into Section 30 and 40 of the planning provisions by each Council, but only remain relevant within that municipality.

The objectives of the P&E Act are to integrate local land use, development planning and development policy with environmental, social, economic, conservation and resource management policies at State, regional and municipal levels through a set of planning schemes. The Act also establishes a clear procedure for public participation in decision making in amending planning schemes.

Some important sections of the planning scheme, in relation to the ecological values of a site, include:

- Section 12 of the State Planning Policy Framework, which identifies, and aims to protect, key biodiversity assets from inappropriate development;
- Clause 52.17 which identifies where native vegetation removal is exempt from requiring a planning permit; and
- Clause 66 which identifies all of the mandatory referral authorities. In particular, the Victorian Department of Energy, Environment and Climate Action is identified as the recommending referral authority if a proponent proposes:
    - *'To remove, destroy or lop native vegetation in the Detailed Assessment Pathway as defined in the Guidelines for the removal, destruction or lopping of native vegetation;*
    - *To remove, destroy or lop native vegetation if a property vegetation plan applies to the site; and*
    - *To remove, destroy or lop native vegetation on Crown land which is occupied or managed by the responsible authority' (Department of Transport and Planning 2023).*

***Catchment and Land Protection Act 1994* (Vic)**

The *Catchment and Land Protection Act 1994* (Vic) (CALP Act) is the principle legislation relating to the management of pest plants and animals in Victoria. Under this Act, landowners have a responsibility to avoid causing or contributing to land degradation. Where possible, landowners are required to conserve soil, protect water resources, eradicate 'regionally prohibited' weeds, prevent the growth and spread of 'regionally controlled' weeds and control pest animals. The CALP Act lists the species that are considered weeds and pest animals.

***Wildlife Act 1975* (Vic)**

Victoria's *Wildlife Act 1975* (Vic) and the *Wildlife Regulations 2002* (Vic) protect all indigenous vertebrate fauna, some non-indigenous vertebrate fauna, and some invertebrate fauna listed as 'threatened' under the FFG Act. The *Wildlife Act 1975* (Vic) prevents intentional injury to wildlife and stipulates that a licence should be granted where there is a possibility that wildlife are injured, or where wildlife is to be kept, relocated or traded.

In most cases, where the proponent is planning to develop a site, a planning permit approval provides this licencing approval, however, this report advises if an additional permit is required. Circumstances where this legislation may not be relevant is where fish are involved, on public land where additional regulatory approval is required, or where other permits are required (such as where fauna are required to undergo invasive procedures or installation of telemetry systems).

***Fisheries Act 1995* (Vic)**

The *Fisheries Act 1995* (Vic) provides the legislative framework for the regulation, management conservation of Victorian fish species and their habitats. As with the Victorian *Wildlife Act 1975* described above, the key method to ensure compliance is through licencing. Where fish, or their habitats, are likely to be impacted, this report will identify additional requirements.

Other relevant policy

***Guidelines for the Removal, Destruction or Lopping of Native Vegetation* (Department of Environment Land Water and Planning 2017c)**

The *Guidelines for the Removal, Destruction or Lopping of Native Vegetation* (Department of Environment Land Water and Planning 2017) were released by DELWP in December 2017. A permit to remove native vegetation under clause 52.16 and 52.17 of the Victoria Planning Provisions is required unless:

- The table of exemptions to this clause specifically states that a permit is not required;
- It is native vegetation or an area specified in the schedule to the clause;
- A Native Vegetation Precinct Plan corresponding to the land is incorporated into the relevant planning scheme; or
- Bushfire exemptions apply in bushfire prone areas (Department of Environment Land Water and Planning 2017).

The Guidelines describe the permitting process for applications to remove native vegetation on private and public property within Victoria. A key strategy of the State Planning Policy Framework,

relating to biodiversity, is to ensure that there is no net loss to biodiversity as a result of the removal, destruction or lopping of native vegetation. This is achieved through iteratively applying the three-step approach:

1. Avoiding the removal, destruction or lopping of native vegetation.
2. Minimising impacts from the removal, destruction or lopping of native vegetation that cannot be avoided.
3. Providing an offset to compensate for the biodiversity impact from the removal, destruction or lopping of native vegetation (Department of Environment Land Water and Planning 2017; p. 4).

Native vegetation is defined in the Victoria Planning Provisions as 'plants that are indigenous to Victoria, including trees, shrubs, herbs and grasses' (Department of Environment Land Water and Planning 2017).

Native vegetation is further classified into two categories (Department of Environment Land Water and Planning 2017):

- A remnant patch of native vegetation (measured in hectares) is either:
  - An area of vegetation where at least 25 per cent of the total perennial understorey plant cover is native, or
  - Any area with three or more native canopy trees where the drip line of each tree touches the drip line of at least one other tree, forming a continuous canopy, or
  - Any mapped wetland included in the *Current Wetlands Map*, available in DELWP systems and tools.

OR

- A scattered tree (measured in number of trees), is a native canopy tree that does not form a patch (Department of Environment Land Water and Planning 2017).

In addition, a canopy tree with a Diameter at Breast Height (DBH) greater than or equal to the large tree benchmark for the relevant bioregional EVC is defined as a large tree. Large trees can be either a large scattered tree or a large tree within a patch.

The contribution that is made by native vegetation to the biodiversity values of Victoria is determined through an assessment of both site-based information and landscape scale information.

At a site-based level, the contribution is determined through an assessment of:

- The extent of native vegetation;
- The number of large trees (either within a patch or scattered trees), relative to the appropriate EVC benchmark;
- The native vegetation condition, which is determined through a Habitat Hectare assessment
- The conservation status of the Ecological Vegetation Class (EVC) to which the vegetation can be classified; and,
- The presence of sensitive wetlands and coastal areas.

At a landscape scale, the value of the vegetation is determined with reference to its strategic context in the Victorian landscape. This is determined by the vegetation's 'Strategic Biodiversity Score' (SBS) and its 'Habitat Importance Score' (HIS) for its value to rare and threatened species (Department of Environment Land Water and Planning 2017).

All native vegetation within Victoria has a SBS that has been determined through spatial modelling, based on its rarity, level of depletion, species habitats, and condition and connectivity (Department of Environment Land Water and Planning 2017). SBS scores are between 0 and 1 and are used to determine the offset required for the loss of that vegetation. Native vegetation only has a HIS score if it is habitat for a particular rare or threatened species (Department of Environment Land Water and Planning 2017). There are two types of rare or threatened species habitats that may be provided by native vegetation:

- **Highly localised habitats for rare or threatened species** – where impact to this particular patch of native vegetation could result in a significant biodiversity impact, such as a breeding colony or species with a limited geographic extent.

- **Dispersed rare or threatened species habitats** – where habitat for the threatened species has become depleted or fragmented over time (Department of Environment Land Water and Planning 2017).

The HIS is used to apply the decision guidelines in relation to the removal of a patch of native vegetation and to determine offset requirements (Department of Environment Land Water and Planning 2017).

Applications to remove native vegetation are categorised against one of three assessment pathways. These pathways are categorised as:

- Basic – limited impacts on biodiversity.
- Intermediate – could impact on large trees, endangered EVCs, and sensitive wetlands and coastal areas.
- Detailed – could impact on large trees, endangered EVCs, sensitive wetlands and coastal areas, and could significantly impact on habitat for rare or threatened species (Department of Environment Land Water and Planning 2017).

This is initially determined in two ways, based on the 'location map' and the extent risk of the vegetation proposed to be removed. The location risk is determined with reference to the *Native Vegetation Location Risk* map available on DEECA's website. This map shows whether native vegetation is classified as Location 1, 2 or 3.

The extent risk is determined based on the amount of native vegetation that is proposed for removal and includes the area (in hectares) of impact to native vegetation, the number of scattered trees, and the number of large trees (Table A5).

Table A5. Assessment pathways for removal of remnant patches of native vegetation (Department of Environment Land Water and Planning 2017).

Extent	Location		
	Location 1	Location 2	Location 3
Less than 0.5 hectares and not including any large trees	Basic	Intermediate	Detailed
Less than 0.5 hectares and including one or more large trees	Intermediate	Intermediate	Detailed
0.5 hectares or more	Detailed	Detailed	Detailed

All applications to remove native vegetation must include the following information:

1. Information about the native vegetation to be removed, including:
    a. The assessment pathway and reason for the assessment pathway;
    b. A description of the native vegetation to be removed;
    c. Maps showing the native vegetation and property in context;
    d. The offset requirement, determined in accordance with section 5 of the Guidelines that will apply if the native vegetation is approved to be removed.
2. Topographic and land information relating to the native vegetation to be removed;
3. Recent, dated photographs of the native vegetation to be removed;
4. Details of any other native vegetation approved to be removed, or that was removed without the required approvals, on the same property or on contiguous land and in the same ownership as the applicant, in the five year period before the application for a permit is lodged;
5. An 'Avoid and Minimise' statement;
6. A copy of any Property Vegetation Plan contained within an agreement made pursuant to section 69 of the *Conservation, Forests and Lands Act 1987* (Vic) that applies to the native vegetation to be removed;
7. Where the removal of native vegetation is to create defendable space, a written statement explaining why the removal of native vegetation is necessary;
8. If the application is under Clause 52.16, a statement that explains how the proposal responds to the Native Vegetation Precinct Plan considerations at decision guideline 8, and
9. An offset statement providing evidence that an offset that meets the offset requirements for the native vegetation to be removed has been identified, and can be secured in accordance with the Guidelines (Department of Environment Land Water and Planning 2017; p. 20-21).

If the application will be assessed under the Detailed Assessment Methodology, the following additional requirements apply:

10. A site assessment report of the native vegetation to be removed, including:
    a. A habitat hectare assessment of any patches of native vegetation, including the condition, extent (in hectares), Ecological Vegetation Class and bioregional conservation status.
    b. The location, number, circumference (in centimetres measured at 1.3 metres above ground level) and species of any large trees within patches.

c. The location, number, circumference (in centimetres measured at 1.3 metres above ground level) and species of any scattered trees, and whether each tree is small or large.

11. Information about impacts on rare or threatened species habitat, including:
    a. The relevant section of the Habitat importance map for each rare or threatened species requiring a species offset.
    b. For each rare or threatened species that the native vegetation to be removed is habitat for, according to the Habitat importance maps: - the species' conservation status - the proportional impact of the removal of native vegetation on the total habitat for that species - whether their habitats are highly localised habitats, dispersed habitats, or important areas of habitat within a dispersed species habitat (Department of Environment Land Water and Planning 2017; p. 22).

Ten decisions guidelines are identified within the Guidelines that the responsible or referral authority must consider when deciding on an application to remove native vegetation. These are summarised as follows:

1. The degree to which the application avoids and minimises impacts to native vegetation, and where vegetation is proposed to be removed, the highest quality vegetation is avoided;
2. The role that the vegetation to be removed has in relation to landscape services such as erosion control, ground water quality, waterway quality;
3. The role of the vegetation in the preservation of landscape features;
4. Whether any part of the native vegetation to be removed, destroyed or lopped is protected under the *Aboriginal Heritage Act 2006* (Vic);
5. The need to remove, destroy or lop native vegetation to create defendable space to reduce the risk of bushfire to life and property, having regard to other available bushfire risk mitigation measures;
6. Whether the native vegetation to be removed is in accordance with any Property Vegetation Plan that applies to the site;
7. Whether an offset that meets the offset requirements for the native vegetation to be removed has been identified and can be secured in accordance with the Guidelines;
8. Whether the application is consistent with a Native Vegetation Precinct Plan (where relevant);
9. For applications in both the Intermediate and Detailed Assessment Pathway only, the impacts on biodiversity values that would occur as a result of vegetation removal; and,
10. For applications in the Detailed Assessment Pathway only, the impacts on habitat for rare or threatened species (Department of Environment Land Water and Planning 2017).

Offset requirements

In all cases where native vegetation is approved for removal, the proponent is liable for the security of an offset site that meets the requirements under the Guidelines. An offset can be either a:

- First party offset – on the same property as the proposed removal of native vegetation, or on another property owned or managed (in the case of Crown land) by the party requiring the offset, or
- Third party offset – on another party's property. Third party offsets are traded as native vegetation credits.

In most cases a third party offset is the simplest and most cost effective means of securing the required offset.

There are three components to offset requirements:

1. Offset type (general or species).
2. Offset amount (measured in general or species habitat units).
3. Offset attributes.

Two types of offset are identified: General Offsets and Specifies Offsets. Specific Offsets may only be required if the native vegetation to be removed is habitat for rare or threatened species that are identified in an Intermediate or Detailed Assessment Pathway application (Department of Environment Land Water and Planning 2017). To determine this, a 'Specific Biodiversity Equivalence Score' is calculated by multiplying the habitat hectares with the HIS for each species that may be impacted. For each of the species, this figure is divided by the sum of all the Specific Biodiversity Value Scores calculated for the remaining vegetation under investigation to give a specific offset threshold for each species. If the amount of vegetation removed exceeds this threshold, then a Specific Offset is required. If it does not exceed the threshold, then only a General Habitat Offset is required (Table A6)(Department of Environment Land Water and Planning 2017).

Table A6 summarises the offset requirements for each of the Assessment Pathways and offset types.

Table A6. Offset requirements for the removal of native vegetation

Assessment Pathway	Offset Type	Offset amount		Offset attributes	
		Risk Adjusted Biodiversity Equivalence	Species Habitat Requirement	Vicinity	Strategic Biodiversity Score
Basic Assessment Pathway	General offset	1.5 times the general biodiversity equivalence score[1] of the native vegetation to be removed.	No restrictions.	In the same Catchment Management Authority boundary as the native vegetation to be removed.	At least 80 per cent of the SBS of the native vegetation to be removed.
Intermediate or Detailed Assessment Pathway	General offset	1.5 times the general biodiversity equivalence score of the native vegetation to be removed.	No restrictions.	In the same Catchment Management Authority boundary as the native vegetation to be removed.	At least 80 per cent of the SBS of the native vegetation to be removed.
	Specific offset	For each species impacted, 2 times the specific biodiversity equivalence score of the native vegetation to be removed.	Likely habitat for each rare or threatened species that a specific offset is required for, according to the specific-general offset test.	No restrictions.	No restrictions.

[1] The general biodiversity equivalence score is determined by multiplying the vegetation's habitat hectare score by its SBS.