
Mornington Battery Energy Storage System

Flora and Fauna Assessment

Prepared for Maoneng Australia Pty Limited
February 2021

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Mornington Battery Energy Storage System

Flora and Fauna Assessment

Report Number

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Client

Maoneng Australia Pty Limited

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16 February 2021

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16 February 2021

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Executive Summary

Maoneng Australia Pty Limited (Maoneng) is proposing to develop the Mornington battery energy storage system (BESS) (the project) at 17 Thornells Road, Tyabb, Victoria (the BESS site).

EMM Consulting Pty Limited (EMM) has been engaged by Maoneng to prepare a planning permit application for the project under the Victorian *Planning and Environment Act 1987* (P&E Act). This flora and fauna assessment has been prepared by EMM in support of the planning permit application. This report presents the findings of the assessment and discusses the potential biodiversity legislative and policy implications of the project.

The study area for the flora and fauna assessment comprises the BESS site, the adjoining road reserve and the land between the BESS site and the Tyabb substation (AusNet site).

ES1 Summary of biodiversity values

ES1.1 BESS Site

The site is approximately 6.6 hectares (ha) and has been largely cleared of native vegetation. It was formerly an orchard and more recently has been cut for hay. A shelter belt of mature pines forms the western boundary of the site. Planted trees, mostly eucalypts are located on the adjoining neighbouring property to the east, the canopy of which extends into site. Three dams are located in the south-east corner of the site. The proposed development area covers most of the site and this area is dominated by exotic grasses and herbs. The project has been designed to avoid the three dams and minimise impacts to native vegetation.

A total of 77 vascular plant taxa were recorded within the site, of these only 24% are indigenous. Most indigenous species were recorded within or adjoining the dams. No rare or threatened plant taxa were recorded during the survey. No patches of native vegetation or scattered trees, as defined in Victoria's native vegetation policy, the *Guidelines for the removal, destruction or lopping of native vegetation*, were recorded within the development footprint/works area. Scattered opportunistic native plants were recorded amongst this vegetation.

A small patch of modified Damp Sands Herb-rich Woodland Ecological Vegetation Class (EVC) was recorded on the eastern boundary, near the dams (and outside the proposed project disturbance area). Indigenous species comprised canopy and understorey trees, and the ground layer was dominated by exotic vegetation. Vegetation quality of this patch was 0.19 (/1). Vegetation within the dams also supported remnant vegetation. The EVC that species describes native vegetation within the artificial waterbodies (Wetland Formation) does not have benchmarks for assessing the quality of vegetation. Benchmarks for the Aquatic Herbland EVC were used instead; this EVC is the closest wetland EVC to the vegetation within the dams and for which benchmarks were available. Habitat (vegetation quality) scores for vegetation within the dams ranged from 0.24 to 0.50.

Three main fauna habitat types were identified onsite: planted trees, exotic pasture and artificial wetlands. Similar habitats are found in the surrounding landscape. The area proposed for the development supports exotic pasture and would largely be utilised by common native and exotic birds. The wetlands provide habitat for amphibians and water birds (mostly waterfowl). A total of 17 fauna species were recorded during the site assessment, comprising 14 birds (four introduced), two amphibians, and one mammal (introduced).

The highest biodiversity values onsite are associated with the dams and these are proposed to be retained. Some threatened fauna waterbirds may occasionally use these dams. Habitat within the dams is potentially suitable for the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) listed Growling Grass Frog and River Swamp Wallaby-grass. The Growling Grass Frog also uses terrestrial areas adjoining waterbodies and therefore a targeted survey for this species was undertaken during the breeding season. No Growling Grass Frogs were recorded.

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ES1.2 Road reserve adjoining the BESS site

The road reserve also supports a modified patch of Damp Sands Herb-rich Woodland (vegetation quality score 0.27). This patch supports understory trees and some plantings of native trees and shrubs. The ground layer is dominated by exotic species. The most notable feature of the road reserve is the large Coast Manna Gum (*Eucalyptus viminalis* ssp. *pontica*). Removal of some scattered native plants and a Coast Tee-tree will be required to accommodate the widening of the site access (which is required for traffic manoeuvrability). An emergency access (second) driveway may be required for Country Fire Authority (CFA) vehicles. The patch of native vegetative within the road reserve can be avoided to accommodate the two driveways.

ES1.3 AusNet site

Fifty-three (53) plant taxa were recorded within the study area of the AusNet site, of which 35 species are exotic and 18 indigenous. Three patches of modified Damp Sands Herb-rich Woodland and three Large Scattered Trees were recorded within this site. The largest patch (0.5 ha) is treeless and dominated by native and exotic grasses. It has a Habitat Score of 0.19. The two smaller patches (both around 0.02 ha) largely comprise remnant canopy and understory tree species and an understory dominated by exotic vegetation. The canopy trees are small and are relatively young. The power easement connecting the BESS site to the substation will be located within the areas supporting remnant vegetation; round half of the largest patch and one of the small patches will be impacted by the proposed works. The three large trees can be avoided.

Two habitat types are recognised within the AusNet site, remnant trees and grassland. The remnant trees support the most valuable fauna habitat within the Ausent site, particularly the large Eucalypts (Figure 3.1). These trees provide perching and nesting sites for a diversity of native birds, as well as food resources for insectivorous and nectar-feeding birds and the bats. The native and exotic grassy areas would be utilised by fauna species similar to those species utilising the pasture of the BESS site. The ephemeral artificial drain around the perimeter of the cyclone fence is likely to be occasionally utilised by locally abundant frogs.

ES2 Legislation implications

A number of species listed under the EPBC Act have previously been recorded within 5 kilometres (km) of the site. Most of these species are associated with Western Port Bay and are unlikely to occur within the study area or have a low likelihood of occurrence (ie habitat too modified). Based on the results of the targeted surveys, and other surveys in the greater area, the Growling Grass Frog is considered unlikely to occur within the BESS site. The dams within the BESS site will be retained, therefore no significant impact to habitat for the River Swamp Wallaby-grass is expected as a result of the proposed development.

Western Port Bay is an internationally significant wetland (Ramsar area) and protected under the EPBC Act. It is located approximately 1.7 km east of the site. Impacts to the Ramsar site are considered unlikely as Maoneng proposes to manage site run-off through a Construction Environmental Management Plan (CEMP) and operations-phase surface water/drainage controls will be implemented.

Victoria's *Flora and Fauna Guarantee Act 1998* (FFG Act) largely pertains to public land. A permit is required to remove protected flora from public land (eg Crown land or land owned by a public authority). It is understood that the site is privately owned, therefore a protected flora permit is not required for the removal of protected flora within this site.

Under the Victorian P&E Act a planning permit is required for the removal of native vegetation within the study area. Native vegetation removal in Victoria is currently regulated by the *Guidelines for the removal, destruction or lopping of native vegetation*. Removal of Patches has been avoided within the BESS and road reserve. Minimisation has been demonstrated within the AusNet site by avoiding the three large trees and associated Tree Protection

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Zones (TPZs). Offsets will be required for the potential removal of 0.279 ha of patch vegetation; this is considered a worst-case scenario. A summary of the loss and offset requirements is as follows:

Loss

Assessment Pathway: Basic

Location category: Location 1

Area of proposed removal: 0.279 ha

Large Tree Proposed for removal: 0

Strategic Biodiversity Value Score: 0.558 and 0.599

Offset requirements

General Offset amount: 0.062 General Habitat Units; 0 Large Trees

Vicinity: Port Phillip and Westernport Catchment Management Authority or Mornington Peninsula Council

Minimum Strategic Biodiversity Value score: 0.449

A copy of the DELWP generated Native Vegetation Removal Report is attached as Appendix F

Six weed species and one pest animal (European Rabbit) listed under the Victorian *Catchment and Land Protection Act 1994* (CaLP Act) were identified within the study area. Management of these species is required under the CaLP Act.

Recommendations to ensure the protection of biodiversity values onsite and within the adjoining road reserve are also presented in this report.

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1 Introduction

1.1 Background

Maoneng Australia Pty Limited (Maoneng) is proposing to develop the Mornington battery energy storage system (BESS) (the project) at 17 Thornells Road, Tyabb, Victoria (the BESS site) (Figure 1.1). The BESS site adjoins the Tyabb substation to the west (21 Thornells Road), and a new transmission line will connect the BESS to the substation. The Tyabb substation is owned and operated by AusNet.

EMM Consulting Pty Limited (EMM) has been engaged by Maoneng to prepare a planning permit application for the project under the Victorian *Planning and Environment Act 1987* (P&E Act). This flora and fauna assessment has been prepared by EMM in support of this application.

1.2 Report objectives

The key objectives of this report are to:

- describe the biodiversity values within the study area;
- assess the potential impacts of the project on the biodiversity values;
- describe the applicable statutory framework; and
- provide recommendations on minimising and managing potential impacts.

1.3 Project description

The project aims to improve electricity grid reliability and network stability by drawing energy from the electricity grid during off-peak periods for battery storage and dispatching energy to the grid during peak periods. The Mornington BESS would have capacity to store up to 240 megawatts (MW) of energy.

Australia's energy market is undergoing significant changes and utility scale batteries are pivotal to enabling the shift from a fossil fuel energy baseload to renewable energy. The Mornington BESS would connect into the electricity network via the existing AusNet Services Limited (AusNet) Tyabb substation.

The project comprises the following key components:

- batteries housed within fully enclosed battery containers, with associated inverters and transformers and an underground cable network;
- an onsite 220/33 kilovolt (kV) or 66/33 kV substation;
- a switchroom;
- a control room;
- an overhead transmission line connecting the onsite substation to the adjacent Tyabb substation;
- internal access roads;

- a temporary construction laydown area;

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- an operations and maintenance building; and
- security fencing and fire safety equipment.

For the purposes of this report, the boundary of the proposed works and associated disturbance areas include:

- BESS site – the laydown area, the outer edge of the access road/perimeter fencing.
- Road reserve – two site access points to the BESS site; the main site access to be widened and a potential upgrade (and widening) of the second site access for a fire access track.
- AusNet site – the two indicative power easement alignments, both assuming maximum easement width (40 m for 200 kV). Maximum area of works and native vegetation clearing is defined by the subject site boundary in Figure 3.1 which includes the two alignment options and excludes the three Large Trees and associated Tree Protection Zones (TPZs). This is considered a worst-case scenario. Only one easement is required, the alignment and cabling voltage (66 kV or 220 kV) is still being confirmed with AusNet.

1.4 Study area

The study area for the biodiversity assessment includes the BESS site, the adjoining road reserve immediately north of the BESS site and the AusNet land between the BESS site and the substation (hereafter referred to as the AusNet site; Figure 1.1). The study area is located within the Mornington Peninsula Shire Local Government Area (LGA) and is zoned as Special Use Zone (SUZ) 1 (Port Related Uses) under the Mornington Peninsula Planning Scheme (MPPS). No planning overlays affect any of the parcels.

The study area is approximately 2 kilometres (km) from the Tyabb town centre and 1.7 km from Westernport Bay and the Western Port Ramsar site. This Ramsar site is a designated wetland of international importance under the Convention on Wetlands of International Importance (Ramsar Convention), especially as waterbird habitat. It is valued for its terrestrial and marine flora and fauna, cultural heritage, recreational opportunities and its scenic values. Ramsar wetlands are protected in Australia under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

1.4.1 BESS site

The BESS site is approximately 6.6 hectares (ha) in size and was selected by Maoneng primarily due its proximity to the existing Tyabb substation. It generally comprises topographically flat land that has largely been cleared of remnant vegetation. The BESS site was previously used for horticultural activities (fruit orchard). With the exception of the Tyabb substation, the surrounding land use is a mixture of rural residential dwellings on large allotments, several of which operate as ‘hobby’ farms, smaller tracts of agricultural land and a variety of commercial/industrial activities.

Three dams are located in the south-eastern portion of the site (Figure 1.1). These dams are bunded with earth and are rain-filled (site runoff does not flow into the dams). Water from the dams was previously used for irrigating the orchard. More recently, bore water has also been pumped into the two large dams, and water from the dams has been used to water the gardens in the adjoining property. The dams are usually pumped dry each summer (landowner pers comm., November 2020). Bore water will no longer be pumped to the dams during operation of the project. Additional existing site infrastructure includes a pump shed, a farm shed and an access road. There is no dwelling on the site.

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Large Pine trees (*Pinus radiata*) line the western site boundary and screen the adjoining substation. Trees, mostly planted eucalypts, are located on the eastern site boundary, the majority of which are rooted in the adjoining property (15 Thornells Road). Plantings of native trees and shrubs (many are non-indigenous) are located along the northern and southern site boundaries and also in the mid-section of the site adjoining the access road. The remainder of site predominately supports pasture and has recently been cut for hay.

1.4.2 AusNet site

The AusNet property comprises a number of land parcels. The parcel (TP568319) that contains the substation and an existing power easement will support the power easement for the BESS project. This parcel is approximately 7.7 ha. The AusNet land included in the study area (the AusNet site) supports both remnant and exotic vegetation, including planted trees and shrubs.

A cyclone fence separates the substation from the surrounding land. The area inside the cyclone fence also includes an administration building, shed, telecommunications tower and water tank. A narrow drain (approx. 50 cm wide) is located around the external perimeter of the fence.

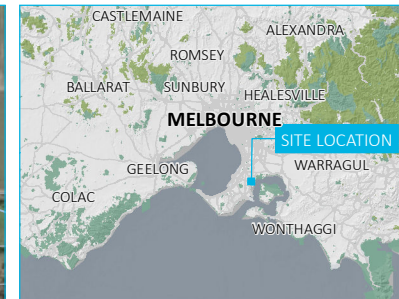
The land is relatively flat, with a drop in level on the western side of the cyclone fence.

1.4.3 Thornells Road

Thornells Road is an unsealed road off the Mornington Peninsula Highway. The road reserve adjoining the BESS and AusNet site supports exotic vegetation and degraded patches of Damp Sands Herb-rich Woodland. The most notable feature of this vegetation is the large Coast Manna Gum (*Eucalyptus viminalis* ssp. *pontica*) adjoining the BESS site.

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- KEY**
- Subject site
 - Ecology study area
 - Cadastral boundary
 - Rail line
 - Major road
 - Watercourse/drainage line
- INSET KEY**
- Major road
 - National park/reserve
 - State forest

Local context

Maoneng Australia Pty Limited
 Mornington BESS
 Flora and fauna assessment
 Figure 1.1



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Source: EMM (2021); Maoneng (2020); DELWP (2019); GA (2011); ASGC (2006)

2 Methodology

2.1 Preliminary assessment

A preliminary assessment (Stage 1) was undertaken for the site in the form of a desktop review (EMM 2020). This involved reviewing reports and databases relevant to the site, including:

- Mornington Peninsula Planning Scheme (DELWP 2020a);
- modelling of extant and pre-European Ecological Vegetation Classes (native vegetation communities) (DELWP 2020b);
- Victorian Biodiversity Atlas (DELWP 2020c) – records of rare and threatened species within the Data Review Area (ie within 5 km centred on the site);
- Planning Maps online (DELWP 2020e) – Mornington Peninsula Planning Scheme Maps of the site and surrounds;
- EPBC Act Protected Matters Search Tool – Matters of National Significance within the Data Review Area (DAWE 2020);
- aerial photography;
- information provided by Maoneng; and
- publicly available reports from the greater Tyabb – Hastings area (eg Biosis (2015) and Ecology Australia (2018)).

The findings of the preliminary assessment have been incorporated into this report.

2.2 Site surveys

An ecology survey of the BESS site was undertaken on 9 September 2020 by EMM Ecologist Lisa Jegathesan (nee Crowfoot). Lisa is a Department of Environment, Land, Water and Planning (DELWP) accredited Native Vegetation Assessor. The survey included an assessment of the ecological values of the site and the adjoining road reserve.

Access to the adjacent AusNet site was granted on 30 November 2020, and the ecological values of the area between the BESS site and substation was also assessed by Lisa Jegathesan.

Following the initial site survey of the BESS site, habitat within the dams and adjoining terrestrial areas was determined to be potentially suitable for the threatened Growling Grass Frog (*Litoria raniformis*). Targeted surveys for this species were undertaken during the breeding season (the recommended timing for targeted surveys) and were completed by John Harris of Wildlife and Ecology.

Detailed methodology of these assessments is presented below.

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2.2.1 Flora surveys

A species list of all indigenous and exotic plant species occurring onsite and the adjoining road reserve was compiled. Not all planted species were sampled.

Native vegetation was assigned to an Ecological Vegetation Class (EVC; vegetation community) by reference to the Department of Environment, Land, Water and Planning's (DELWP's) EVC modelling (DELWP 2020b) and EVC benchmarks (DELWP 2020d). A Vegetation Quality Assessment was completed for patches of native vegetation following the Department of Sustainability and Environment's (DSE's) *Vegetation Quality Assessment Manual* (DSE 2004) and the *Guidelines for the removal, destruction or lopping of native vegetation* (DELWP 2017a; the Guidelines).

As per the Guidelines, a patch is defined as:

- an area of vegetation where at least 25% of the total perennial understory plant cover is native;
- any area with three or more native canopy trees where the dripline of each tree touches the drip line of at least one other tree, forming a continuous canopy; and/or
- any mapped wetland included in the Current Wetlands map, available in DELWP's system and tools.

A Scattered Tree is a native canopy tree that does not form part of a patch (DELWP 2017a, pg.6).

The boundaries of each patch were mapped using Avenza Maps. Scattered Trees and large trees within a patch were also mapped and trunk diameter measured using a diameter to breast height (DBH) tape. A Large Tree is a (native) canopy tree with a diameter at breast height (DBH) greater than or equal to the large tree benchmark for the relevant bioregional. No Scattered Trees were recorded.

2.2.2 Fauna surveys

The study area was assessed for its fauna habitat value and potential to support threatened fauna species. The assessment involved a review of aerial photographs and maps (eg maps showing the location of threatened species) to gain an appreciation of the vegetation cover and broader landscape context. This was followed by a site inspection.

During the site inspection, the habitat assessment focused on the extent of native vegetation cover, composition and structure of the vegetation, as well as other features important in determining habitat quality (eg the presence or absence of nectar-producing and/or hollow-bearing trees, the level of disturbance, eg weed invasion). Other habitat attributes noted included:

- size and location of patches of native vegetation;
- presence of specific habitat features (eg water bodies, large trees);
- connectivity (habitat links); and
- structural heterogeneity of the vegetation.

All vertebrates either directly observed or heard calling (eg frogs) during the field assessment, were recorded to compile an inventory of fauna species utilising the study area. Searches for indirect evidence were also made to detect the presence of animals, including bird nests, possum dreys, scats and diggings.

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2.2.3 Growling Grass Frog Targeted Survey

The targeted survey consisted of three surveys following methods largely based on those outlined by Heard et al. (2010) and undertaken in accordance with the Significant Impact Guidelines for the Growling Grass Frog (DEWHA 2009). The surveys were conducted as per the guidelines and during the most suitable local conditions to establish presence/absence of the Growling Grass Frog near the study site. The three surveys were undertaken on 22 November, and 1 and 15 December 2020, when the night-time air temperature was >12°C and wind was minimal, as per the requirements for suitable survey conditions. Targeted spotlight (visual encounter) surveys and call-playback were undertaken along the banks of the three wetlands in the study site.

Spotlighting searches involved observers patrolling the perimeter of the wetlands, using a spotlight, while scanning for frogs in the water and the adjacent areas of mown grass. Opportunistic rock rolling or checking any artificial habitat (tin, wood, rubbish, etc.) was also conducted in the vicinity of the water bodies. Call playback was used intermittently along the edge of the wetlands, using a recording played from a smart phone attached to external speakers. Patches of emergent vegetation were particularly targeted for call-playback.

Temperature, wind speed and humidity data were recorded at the time of the survey using either a hand-held weather meter (Kestrel® k3500) and compared with the Bureau of Meteorology Weather app (BOM Weather) for Tyabb.

2.3 Limitations

Some flora species may have been overlooked because they were inconspicuous when the survey was conducted, or have been identified to genus level only, due to the absence of fertile material. This can be a result of the timing of the assessment (seasonality), as well as environmental conditions such as mowing and extended periods without rain. However, these limitations are unlikely to alter the major findings of the survey regarding overall quality and significance of the vegetation.

Due to the mobile nature of fauna species, some species that utilise the study area may not have been recorded during the surveys. This limitation was mostly overcome through the use of the databases, reviewing relevant reports and databases, and assessing habitat suitability for rare or threatened species. If habitat was considered potentially suitable for threatened species and the habitat may be affected by the proposed works, targeted surveys are carried out for these species, as has been undertaken for the Growling Grass Frog.

2.4 Conservation status and likelihood of occurrence

Species significance is based on the following:

- listings and conservation status under the EPBC Act;
- listing under the *Flora and Fauna Guarantee Act 1988* (FFG Act); and
- Victorian advisory list status – *Advisory List of Rare or Threatened Plants in Victoria* (DEPI 2014) and *Advisory List of Threatened Vertebrate Fauna in Victoria* (DSE 2013).

The likelihood of occurrence for rare or threatened species previously recorded within the data review area (ie within 5 km of the site) to occur within the project site was determined using the following categories:

- Unlikely – no suitable habitat onsite, outside of its natural range, or thought to be extinct locally.
- Low – within the natural range of the species but the site supports low quality habitat. In relation to highly mobile fauna, the site may occasionally be opportunistically used by the species (eg foraging) but the habitat is not considered important for the species.

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- Moderate – within the natural range, habitat is potentially suitable and of moderate quality.
- High – within the natural range and habitat within the site is of high quality for the species.

2.5 Taxonomy and nomenclature

Flora and fauna taxonomy and use of common names follows Victoria's Biodiversity Atlas (VBA; DELWP 2020c).

An asterisk (*) after a plant or animal name signifies exotic taxa; those species which have been introduced to Victoria or Australia. A hash (#) is used to denote Victorian native plants that are not indigenous to the relevant vegetation type.

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3 Flora results

The results of the flora and vegetation assessment are presented below for the study area - the BESS site, the adjoining road reserve and the AusNet site. Figure 3.1 shows the location of remnant patches, large trees and scattered understorey trees, and Figure 3.2 a constraints map based on the location of the different vegetation/habitat types.

3.1 BESS site

The BESS site is modelled to have once supported Damp Sands Herb-rich Woodland EVC. DELWP’s extant modelling indicates that a patch of Damp Sands Herb-rich Woodland may occur in the north-east portion of the site (DELWP 2020b). No patch was recorded in this area, it predominately supports exotic vegetation, including planted trees.

The land-use history of the site has resulted in little native flora remaining. A total of 77 vascular plant taxa were recorded during the site survey, of which only 21 (27%) are indigenous to the Tyabb area (Appendix A). The majority of the indigenous species recorded were located within or adjoining the dams.

Exotic vegetation dominates the site, including the development footprint (Photograph 3.1 and Photograph 3.2). No Patches or Scattered Trees were recorded in the development footprint (Figure 3.1). The dominant species recorded included: Sweet Vernal Grass* (*Anthoxanthum odoratum*), Rye Grasses* (*Lolium* spp.), Yorkshire Fog* (*Holcus lanatus*), Cape Weed* (*Arctotheca calendula*) and White Clover* (*Trifolium repens*). Scattered indigenous plants were recorded growing amongst this vegetation, and commonly comprised Rushes including *Juncus* spp., Blown Grass (*Lachnagrostis filiformis*), Small Loosestrife (*Lythrum hyssopifolia*) and Jersey Cudweed (*Laphangium luteoalbum*). Rows of plantings of native species (many non-indigenous species) occur on the northern, southern and north-eastern boundaries and across the middle of the site. These plantings appear to be relatively recent.



Photograph 3.1 - BESS site north-west (November 2020)

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Photograph 3.2 Site, view of the south western portion of the site (September 2020)

A small patch (approximately 0.03 ha) of modified Damp Sands Herb-rich Woodland (Habitat Zone 1) is located east of the dams along the fenceline with the neighbouring property (Figure 3.1, Photograph 3.3). The canopy, comprising Large-fruit Yellow Gums (*Eucalyptus leucoxylon* ssp. *megalocarpa*)¹ and a Swamp Gum (*Eucalyptus ovata*), are rooted in the neighbouring property (15 Thornells Road). The understory includes Black Wattles (*Acacia mearnsii*), Coast Tea-tree (*Leptospermum laevigatum*) and Swamp Gum saplings. The ground layer is mown and dominated by exotic herbs including Brown-top Bent* (*Agrostis capillaris*), Ribwort* (*Plantago lanceolata*), Onion Grass* (*Romulea rosea*) and Flatweed* (*Hypochaeris radicata*). The quality of the vegetation was assessed following DELWP's vegetation assessment guidelines; the Habitat Score was 0.19 (Table 3.1). This vegetation is not proposed to be affected by onsite works.

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The yellow gums are planted (non-indigenous to the area). The canopy of these trees extends to the subject site.

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Photograph 3.3 Small patch of Damp Sands Herb-rich Woodland (left) along the eastern boundary of site (September 2020)

The three dams support a diversity of indigenous species. Wetland Formation is a broad EVC that covers a range of freshwater wetland types and best fits artificial waterbodies such as those at the site. The two larger dams support a relatively high cover of the aquatic herb Blunt Pondweed (*Potamogeton ochreatus*), with scattered occurrences of Narrow-leaf Cumbungi (*Typha domingensis*) and Tall Spike-sedge (*Eleocharis sphacelata*). The upper margins of the dams supported a range of grasses, rushes and dicot herbs including Blown Grass, Small Loosestrife, Lesser Joyweed (*Alternanthera denticulata*), Smooth Willowherb (*Epilobium billardierianum* ssp. *billardierianum*), Tall Rush (*Juncus procerus*) and Broom Rush (*Juncus sarophorus*). This zone was relatively narrow. One Coast Tea-tree adjoined Dam 1 (Photograph 3.4) and a Blackwood (*Acacia melanoxylon*) adjoined Dam 2 (Figure 3.1).

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Photograph 3.4 Dam 1 with Coast Tea tree on the edge (September 2020)

The smaller dam (Dam 3) supported a higher cover of Narrow-leaf Cumbungi and Tall Spike-sedge and some open water. Two Black Wattles adjoin the dam on the south-east corner (Figure 3.1). The banks of this dam support three high-threat weed species: Blackberry* (*Rubus anglocandicans*), Gorse* (*Ulex europaeus*) and Boneseed* (*Chrysanthemoides monilifera*), which are spreading to adjoining areas (Photograph 3.5). Green waste and hard rubbish are also located adjoining this dam and require removal.

The vegetation quality of all three dams was also assessed (Habitat Zones 2-4). There are no benchmarks for Wetland Formation, so the vegetation within the dams have been assessed against the benchmarks for Aquatic Herbland (EVC 653); the closest wetland EVC with benchmarks for the Gippsland Plain Bioregion. Habitat scores ranged from 0.24 (Dam 3) to 0.5 (Dam 2) (Table 3.1). The three dams are proposed to be retained and will not be impacted by the works.

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Photograph 3.5 Dam 3 (September 2020)

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Table 3.1 Habitat condition scores for remnant patches within the BESS site and the adjoining road reserve

Habitat Zone		HZ 1	HZ 2	HZ 3	HZ 4	HZ 5
EVC		DSHRW	AH	AH	AH	DSHRW
Location		Onsite	Dam 1	Dam 2	Dam 3	Road reserve
Site condition	Max score	Score	Score	Score	Score	Score
Large trees	10	0	-	-	-	8
Canopy	5	3	-	-	-	3
Understorey	15	5	10	15	10	5
Lack of weeds	25	4	7	9	4	0
Recruitment	10	3	3	6	0	6
Organic litter	5	2	5	5	2	3
Logs	5	0	-	-	-	0
Total site score	75	17	25	35	16	25
EVC standardiser		1	1.36	1.36	1.36	1
Adjusted site score		17	34	47.6	21.8	25
Landscape value	Patch size	10	1	1	1	1
	Neighbourhood	10	0	0	0	0
	Distance to core	5	1	1	1	1
	Total landscape value	/25	2	2	2	2
	Score (/100)		19	36	49.6	23.8
	Score (/1)		0.19	0.36	0.50	0.24
	Large Trees		0	-	-	1

Key:
 HZ - Habitat Zone
 EVC - Ecological Vegetation Class
 DSHRW - Damp Sands Herb-rich Woodland
 AH - Aquatic Herbland

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3.2 Thornells Road reserve adjoining BESS site

A total of 29 vascular plant taxa were recorded within the road reserve during the site survey, of which only 12 (41%) are indigenous to the Tyabb area (Appendix B). Native plantings have been undertaken in treeless sections of the road reserve, and include indigenous and non-indigenous species (eg Callistemons).

The road reserve supports a patch of modified Damp Sands Herb-rich Woodland 0.09 ha in size (Habitat Zone 5, Figure 3.1). Native species recorded include: Coast Teatree, Blackwoods, Black Wattle, Silver Wattle (planted), Coast Banksia (planted), Spiny-headed Mat-rush (*Lomandra longifolia*; planted), and Thatched Saw-sedge (*Gahnia radula*; potentially planted). The canopy is predominately absent with the exception of a large Manna Gum (81 cm DBH). The ground layer is dominated by exotic herbs including Panic Veldt* (*Ehrharta erecta*), Sweet Vernal Grass*, Squirrel-tail Fescue*, *Vulpia bromoides** and Cape Weed* (Photograph 3.6). Two mature Blackwoods are in poor condition, with one senescing (Photograph 3.7). This vegetation has a Habitat Score of 0.27 (Table 3.1).

Areas east and west of the patch support predominately exotic vegetation, a Coast Teatree and scattered plantings of native trees and shrubs (Photograph 3.8 and Photograph 3.9).



Photograph 3.6 Vegetation within the adjoining road reserve of Thornells Road (September 2020)

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Photograph 3.7 Blackwoods within the road reserve (September 2020)



Photograph 3.8 Entrances to 17 Thornells Road and adjoining road reserve (September 2020)

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Photograph 3.9 Second site access to 17 Thornells Road and adjoining road reserve (November 2020)

3.3 AusNet site

Fifty-three (53) plant taxa were recorded within the study area of the AusNet site, of which 35 species are exotic and 18 indigenous (Appendix C). Pre-1750 native vegetation modelling indicates that the site once supported Damp Sands herb-rich Woodland (DELWP 2020b). During the site survey, three patches of Damp Sands Herb-rich Woodland (Habitat Zones 6, 7 and 8) and three large Scattered Trees were recorded (Figure 3.2).

The largest patch, Habitat Zone 6, is 0.5 ha and spans most of the length of a power easement between the BESS site and the substation. This patch is highly modified and is treeless. It is dominated by exotic and native grasses, largely Weeping Grass (*Microleana stipoides* subsp. *stipoides*), Wallaby-grasses (*Rytidosperma* spp.), Sweet Vernal-grass*, Brown-top Bent* and Panic Veldt-grass* (Photograph 3.10). Kangaroo Grass (*Themeda triandra*) dominates the patch in the southern portion; this area is ecotonal with Grassy Woodland (Photograph 3.11). Other scattered indigenous species recorded within the patch include Broom Rush (*Juncus pallidus*), Wattle Mat-rush (*Lomandra filiformis*), Spiny-headed Mat-rush, and a recruit of Prickly Teatree (*Leptospermum continentale*) which has likely established from soil stored seed. High threat woody weeds are notable in the southern section and include Gorse* and Blackberry*. The quality of the vegetation was assessed following the Guidelines (DELWP 2017a) and Vegetation Quality Assessment manual (DSE 2004); the Habitat Score was 0.19 (Table 3.2).

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Photograph 3.10 Habitat Zone 6 is treeless and largely supports native and exotic grasses, AusNet Site (November 2020)



Photograph 3.11 Habitat Zone 6 southern portion with Grassy Woodland in the background, AusNet property (November 2020)

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Habitat Zone 7 is located in the southern section of the site, adjoining the cyclone fence (Figure 3.2, Photograph 3.12). This small patch is approximately 0.02 ha and largely comprises canopy and understorey trees, including Swamp Gum, Cherry Ballart (*Exocarpos cupressiformis*) and Black Sheoak (*Allocasuarina littoralis*). All the trees are relatively young; the trees become visible on aerial photography around 2012 (Google Earth 2021). The ground layer is dominated by exotic species, predominately Sweet Vernal-grass*, Gorse* and Blackberry*. Scattered Weeping Grass and Wallaby Grasses are also present. The Habitat Score of this patch was 0.22 (Table 3.2).



Photograph 3.12 Habitat Zone 7 largely comprising canopy and understorey trees (November 2020)

A small patch (Habitat Zone 8; 0.02 ha) occurs adjacent to cyclone boundary fence, east of the substation (Figure 3.2, Photograph 3.13). This patch includes a small Swamp Gum, a small Cherry Ballart, Black Wattle and an understorey dominated by exotic grasses. Similar to Habitat Zone 7, the trees in this patch are visible on aerial photography around 2012. The Habitat Score of this patch was 0.18 (Table 3.1).

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Photograph 3.13 Habitat Zone 8 supports a small Swamp Gum (middle left) and Black Wattle (middle right), November 2020

A more intact patch Grassy Woodland occurs within the AusNet property further south (outside of the study area) and is fenced from the remainder of the site (Figure 3.2).

The two large trees are located in the mid-section of the AusNet site adjoining the cyclone fence (Figure 3.2). The Narrow-leaf Peppermint (*Eucalyptus radiata* ssp. *radiata*) has a DBH of 82 cm and the Swamp Gum a DBH of 112 cm (Photograph 3.14 and Photograph 3.15). A Manna Gum adjoins the substation and has a DBH of 83 cm (Figure 3.2).

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Photograph 3.14 Large Narrow-leaf Peppermint (Large Tree 4), November 2020



Photograph 3.15 Large Swamp Gum (Large Tree 5) with Large Manna Gum in background (Large Tree 6), November 2020

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The remainder of the area between the BESS site and the power terminal is dominated by exotic grasses and herbs (eg Sweet Vernal-grass*, Yorkshire Fog*, Cat's Ear* and Ribwort*), including areas inside the cyclone fence. Planted Cypress pines are located in the northern portion and adjoin the Pine Trees within the BESS site (Figure 3.2, Photograph 3.16).



Photograph 3.16 Exotic grassland and Cypress Trees in the northern section of the AusNet site

Table 3.2 Habitat condition scores for remnant patches within the AusNet site

Habitat Zone		HZ 6	HZ 7	HZ 8
EVC		DSHRW	DSHRW	DSHRW
Site condition	Max score	Score	Score	Score
Large trees	10	0	0	0
Canopy	5	0	5	5
Understorey	15	5	5	5
Lack of weeds	25	4	4	0
Recruitment	10	5	3	3
Organic litter	5	3	3	3
Logs	5	0	0	0
Total site score	75	17	20	16
EVC standardiser		1	1	1
Adjusted site score		17	20	16
Landscape value	Patch size	10	1	1
	Neighbourhood	10	0	0
	Distance to core	5	1	1

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Table 3.2 Habitat condition scores for remnant patches within the AusNet site

Habitat Zone		HZ 6	HZ 7	HZ 8
EVC		DSHRW	DSHRW	DSHRW
Site condition	Max score	Score	Score	Score
Large trees	10	0	0	0
Canopy	5	0	5	5
Understorey	15	5	5	5
Lack of weeds	25	4	4	0
Recruitment	10	5	3	3
Organic litter	5	3	3	3
Logs	5	0	0	0
Total landscape value	/25	2	2	2
Score (/100)		19	22	18
Score (/1)		0.19	0.22	0.18
Large Trees		0	0	0

Key:

HZ - Habitat Zone

EVC - Ecological Vegetation Class

DSHRW - Damp Sands Herb-rich Woodland

3.4 Significant flora species

No flora taxa recorded during the site surveys are listed as threatened under the EPBC or FFG Acts, nor are classified as rare or threatened in Victoria. A total of 13 rare or threatened vascular plant taxa have been recorded within 5 km of the study area. Of these, one is listed under the EPBC Act, one is listed under the FFG Act and an additional 11 are otherwise considered rare or threatened in Victoria (Table 3.3). Eight of these species are associated with coastal vegetation (ie saltmarsh, scrub and mangrove shrubland) and habitat for these species has never been present within the study area. Three species are associated with woodlands and forest, and given the extensive clearing of this vegetation onsite, they are considered to have a low likelihood of occurrence. One species, Perfoliate Pondweed (*Potamogeton perfoliatus*), is known from fresh and brackish waterways, and could also occur within onstream freshwater or brackish wetlands; such habitats are not present within the site. The species with the highest potential to occur within the study area is River Swamp Wallaby-grass (*Amphibromus fluitans*) (Table 3.3).

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River Swamp Wallaby-grass is listed as Vulnerable under the EPBC Act. It is not listed under Victoria's FFG Act or on DELWP's advisory list. This species is associated with freshwater permanent and ephemeral wetlands and waterways, including artificial wetlands and channels, and can be tolerant of grazing by stock and native herbivores. It is typically dispersed by waterfowl. The strong hold of River Swamp Wallaby-grass is in northern Victoria, associated with floodplain of the Murray River. Populations around Melbourne have significantly declined as a result of anthropogenic changes to the landscape (eg draining of swamps and wetlands). It often occurs in association with Common Swamp Wallaby-grass (*Amphibromus nervosus*). River Swamp Wallaby-grass has recently been recorded on the Mornington Peninsula within the Bluescope Steel Limited (BlueScope) property where it was identified in a number of natural and artificial wetlands (Biosis 2015). The dams within the BESS site, particularly the two large dams, support suitable habitat for River Swamp Wallaby-grass along the upper margins of the dam. River Swamp Wallaby-grass does not compete well with tall robust plants such as Narrow-leaf Cumbungi, Common Reed (*Phragmites australis*) and exotic grasses (eg Phalaris* *Phalaris aquatica*), and therefore is less likely to occur within the smaller dam (Dam 3). Suitable habitat for River Swamp Wallaby-grass would occur in a number of artificial wetlands in the wider landscape; any plants in these waterbodies, or waterbodies on adjoining properties, would be considered part of a metapopulation associated with those plants recorded at the BlueScope property. The dams onsite will be retained and therefore significant impacts to habitat for the River Swamp Wallaby-grass are not anticipated.

Habitat for an additional nine EPBC Act-listed species have been identified as potentially occurring within 5 km of the site on the Protected Matters Search Tool (Appendix D). None of these species are considered likely to occur as the habitat within the study area is either too modified or never supported suitable habitat for these species.

Table 3.3 Rare or threatened flora species previously recorded within 5 km of the site

Scientific name	Common name	EPBC	FFG	Advisory list	No. of records	Last record	Likelihood of occurrence		Habitat
							BESS	AusNet	
<i>Amphibromus fluitans</i>	River Swamp Wallaby-grass	VU			2	2014	Moderate	Low	Freshwater waterbodies
<i>Atriplex paludosa subsp. paludosa</i>	Marsh Saltbush			r	20	2018	Unlikely	Unlikely	Coastal Saltmarsh
<i>Avicennia marina subsp. australasica</i>	Grey Mangrove			r	13	2014	Unlikely	Unlikely	Mangrove Shrubland
<i>Dianella longifolia var. grandis</i>	Flax-lily			vu	1	2008	Low	Low	Grassy Woodlands
<i>Diuris punctata</i>	Purple Diuris		L	vu	1	1989	Low	Low	Grassy and Heathy Woodlands
<i>Juncus revolutus</i>	Creeping Rush			r	2	2008	Unlikely	Unlikely	Coastal Saltmarsh
<i>Lachnagrostis robusta</i>	Salt Blown-grass			r	1	2008	Unlikely	Unlikely	Coastal Saltmarsh and brackish soils
<i>Lawrencia spicata</i>	Salt Lawrencia				1	2002	Unlikely	Unlikely	Coastal Saltmarsh
<i>Limonium australe var. australe</i>	Yellow Sea-lavender			r	13	2008	Unlikely	Unlikely	Coastal Saltmarsh

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Table 3.3 Rare or threatened flora species previously recorded within 5 km of the site

Scientific name	Common name	EPBC	FFG	Advisory list	No. of records	Last record	Likelihood of occurrence		Habitat
							BESS	AusNet	
<i>Potamogeton perfoliatus</i>	Perfoliate Pondweed			k	1	2014	Low	Unlikely	Freshwater creeks and rivers
<i>Pterostylis X toveyana</i>	Mentone Greenhood			vu	1	1969	Low	Low	Moist open forest and coastal scrub
<i>Triglochin minutissima</i>	Tiny Arrowgrass			r	1	1991	Unlikely	Unlikely	Coastal Saltmarsh
<i>Xanthosia tasmanica</i>	Southern Xanthosia			r	1	2014	Unlikely	Unlikely	Coastal heath or scrub

Key:

LO – Likelihood of Occurrence

EPBC Act:

Vu - vulnerable

En - endangered

Cr - critically endangered

FFG Act:

L - listed as threatened under the FFG Act

Victorian advisory list:

e - endangered

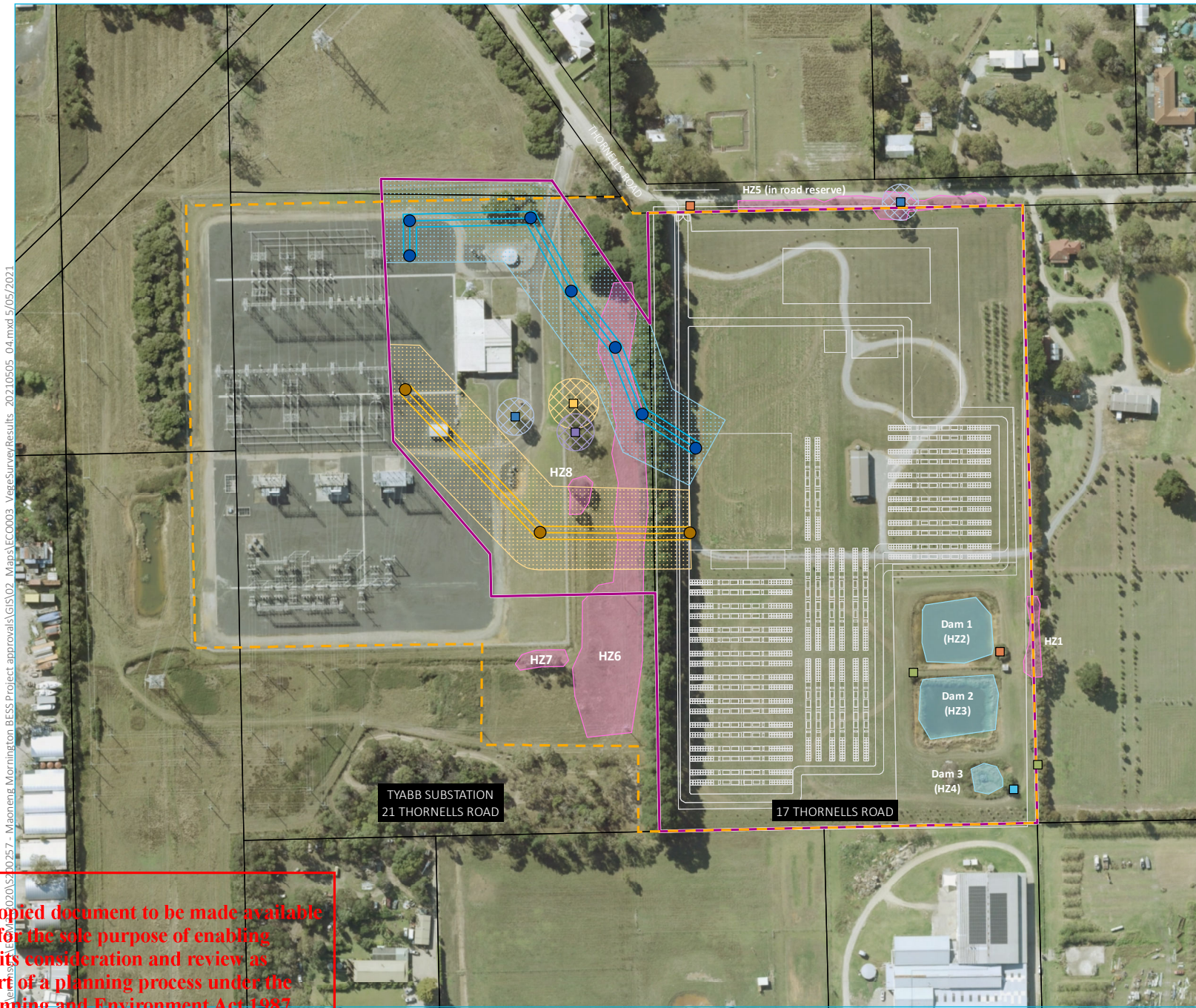
vu - vulnerable

r - rare

k - unknown but thought to be rare or threatened

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- KEY**
- Subject site
 - Ecology study area
 - Proposed transmission pole
 - Proposed transmission tower
 - Site layout
 - Cadastral boundary
 - Damp Sands Herb-rich Woodland
 - Dam
- Canopy trees with associated TPZ**
- Manna gum
 - Narrow-leaf peppermint
 - Swamp gum
- Tree Protection Zone (TPZ)**
- Manna gum
 - Narrow-leaf peppermint
 - Swamp gum
- Understorey trees**
- Blackwood
 - Coast tea-tree
 - Black wattle
- Transmission line**
- Option 1 - 66 kV transmission line
 - Option 2 - 220 kV transmission line
 - Option 1 - 66 kV transmission line easement
 - Option 2 - 220 kV transmission line easement

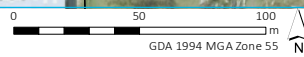
Vegetation survey results

Maoneng Australia Pty Limited
 Mornington BESS
 Flora and fauna assessment
 Figure 3.1



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(e:\analysis\2020\5230257 - Maoneng Mornington BESS project approvals\GIS\02_Maps\EC0003_VegetationSurveyResults_20210505_04.mxd 5/05/2021)

Source: EMM (2021); Metromap (2021); LCrowfoot (2020); Maoneng (2020); DELWP (2019)

4 Fauna results

Twenty-seven fauna species were recorded during the site assessments across the BESS and AusNet sites. This comprised 21 bird species (four introduced), five amphibians and one introduced mammal (Appendix E).

4.1 BESS site - habitat types

Three habitat types are recognised for the BESS site – pasture (exotic grassland areas), wetlands and trees. These are discussed further below.

4.1.1 Pasture

The majority of the site is covered in pasture. Most of this area had been cut for hay prior to the site visit and the vegetation was relatively low to the ground. The remaining areas of pasture was rank; overgrown with exotic grasses and herbs. Some areas were quite wet and support grasses and dicot herbs more tolerant to wetter conditions (eg Drain Flat-sedge**Cyperus eragrostis*).

The pasture provides foraging habitat for a suite of ground foraging bird species that commonly occur in rural and peri-urban areas, such as the Australian Magpie (*Gymnorhina tibicen*), Magpie Lark (*Grallina cyanoleuca*), Willie Wagtail (*Rhipidura leucophrys*) and the introduced Common Starling* (*Sturnus vulgaris*). Correllas and Cockatoos are also likely to feed on the corms of the exotic Onion Grass* (*Romulea rosea*) which is in plentiful supply at the site. Birds of prey, such as the Black-shouldered Kite (*Elanus axillaris*), will also regularly forage over the pasture.

The European Rabbit* (*Oryctolagus cuniculus*) was recorded foraging within the pasture. Rabbit diggings were noted throughout the site and the road reserve.

4.1.2 Wetlands

Three dams are located in the south-east corner of the site. Dams 1 and 2 are approximately 1400 m² and 3 m deep and support submerged vegetation and variable cover of emergent and semi-aquatic vegetation on the upper margins. Dam 3 which is around 250 m² supports a high cover of emergent vegetation. A total of five amphibians were recorded within the dams during the initial site assessment and targeted Growling Grass Frog surveys (Table E.1).

These dams provide habitat for a number of common waterbird species, particularly waterfowl (eg ducks) and grebes. Australian Grebes (*Tachybaptus novaehollandiae*) and Pacific Black Duck (*Anas superciliosa*) were recorded during the site assessments in the large dams. Habitat is more limited for large wading birds (eg egrets and Ibis) and crakes and rails due to the lack of fringing vegetation and foraging habitat. The smaller dam (Dam 3) offers lower quality habitat (compared to the larger dams) for water birds due to the limited area of open water.

It is understood that the landowner at 15 Thornells Road uses water from these dams during the summer months to water the garden at 15 Thornells Road, and that the dams are typically pumped dry. The dams are not connected to any waterways and are predominately rain-filled (except when used to store bore water from 15 Thornells Road). Maoneng will not use the dams or any bore water.

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4.1.3 Trees

A shelter belt of mature pine trees is located along the western boundary of the site. Eucalypts, which are mostly planted, overhang from the neighbouring property along the eastern boundary. The trees within and adjoining the site provide a range of resources for a suite of locally common bird species. The eucalypt and pine trees provide perching and roosting habitat for native birds such as the Australian Magpie, Little Raven (*Corvus mellori*) and Magpie-lark, as well as introduced species such as the *Spotted Turtle-dove (*Streptopelia chinensis*) and Common Starling. They also provide foraging habitat for insectivorous and nectar-feeding birds such as the Noisy Miner (*Manorina melanocephala*) and Little Wattlebird (*Anthochaera chrysoptera*). The eucalypt trees and Coast Teatree also provide suitable foraging and nesting habitat for arboreal mammals such as the Common Brushtail Possum (*Trichosurus vulpecula*) and Common Ringtail Possum (*Pseudocheirus peregrinus*).

4.2 AusNet site - habitat types

Two habitat types are recognised within the study area of the AusNet site: grassland and remnant trees.

4.2.1 Remnant trees

The remnant trees support the most valuable fauna habitat within the AusNet site, particularly the large Eucalypts (Figure 3.2). These trees provide perching and nesting sites for a diversity of native birds, as well as food resources for insectivorous and nectar-feeding birds, such as the Little Wattlebird, Rainbow Lorikeet (*Trichoglossus haematodus*) and Musk Lorikeet (*Glossopsitta concinna*), which forage in eucalypt canopies, and on trunks with decorticated bark. Eucalypts also provide food resources for the Grey-headed Flying-fox (*Pteropus poliocephalus*), while small spouts and provide create roost sites for microbats. Leaf litter and fallen bark that has accumulated beneath some trees, provides shelter for small common reptiles, such as the Garden Skink (*Lampropholis guichenoti*).

4.2.2 Grassland

Grassy areas inside the cyclone fence are maintained close to the ground, where the area between the BESS site and the fence are mown less frequently. The native and exotic grassy areas would be utilised by fauna species similar to those species utilising the pasture of the BESS site. The ephemeral artificial drain around the perimeter of the cyclone fence is likely to be occasionally utilised by locally abundant frogs such as Common Froglet and Eastern Banjo Frog (*Limnodynastes dumerilii*).

4.3 Landscape context

The study area is located approximately 2 km from the Tyabb township (Figure 1.1) and 1.7 km from the Westernport Bay Ramsar Site. The surrounding area is similar to the site – relatively small rural properties used for orchards, market gardens and plant nurseries. The landscape is fragmented and largely cleared. Large dams are a notable feature in the landscape, but most are not connected to a natural waterbody unless located on a waterway (eg an unnamed tributary north of Thornells Road). Small plantations and remnant patches are predominately located north of Thornells Road.

The large BlueScope property is approximately 1,200 ha and is located south and south-east of the site and is connected to Western Port Bay. The BlueScope site is known to support significant biodiversity values (Biosis 2015). Outside of these areas, native vegetation appears largely confined to the road reserves.

The landscape immediately surrounding the study area is largely cleared, with the exception of the Grassy Woodland within the southern portion of the AusNet property and adjoining private property.

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4.4 Significant species

No fauna species recorded during the site surveys are listed as threatened under the EPBC or FFG Acts or are classified as threatened in Victoria. A total of 55 threatened fauna species have been recorded within 5 km of the site (Table 4.1). Of these:

- 15 are listed under the EPBC Act;
- an additional 20 are listed under the FFG Act; and
- the remaining 20 species are otherwise classified as threatened or near threatened in Victoria (DSE 2013).

Forty-four bird species have been recorded within 5 km of the site. Of these species, five species are considered extinct on the Mornington Peninsula (Ecology Australia 2018). A number of threatened waterbird and shorebird species have been recorded within the locality for which the tidal flats and wetlands of the adjoining Western Port Bay Ramsar site provide important habitat. These species have an 'unlikely' likelihood of occurrence at the site due to a lack of suitable habitats. Most threatened freshwater waterbirds have a low likelihood of occurrence as habitat with the BESS site is less than optimal, with steep dam banks and no adjoining remnant vegetation.

Three mammal species have previously been recorded within 5 km of the site. One of these species, the New Holland Mouse (*Pseudomys novaehollandiae*) is considered locally extinct (Ecology Australia 2018). The Humpback Whale is restricted to oceans. The Southern Brown Bandicoot is known to occur in roadside vegetation where there is a dense cover of vegetation to provide refuge from foxes; suitable habitat does not exist within the site or in the Thornells Road road reserve.

Two threatened amphibians have been previously recorded within 5 km of the study area. Habitat is not suitable for the Southern Toadlet; this species requires moist depressions in forests and woodlands to breed. Habitat within the dams, particularly the large dams, was considered potentially suitable for the Growling Grass Frog during a habitat assessment and targeted surveys were undertaken. The results of the targeted survey are discussed in Section 4.4.1.

None of threatened reptiles, fish or invertebrates previously recorded within 5 km of the site are considered likely to occur onsite as habitat is either not suitable or too modified.

Three species are rated a low-moderate or moderate likelihood of occurrence within the BESS site:

- Nankeen Night Heron (*Nycticorax caledonicus*);
- Royal Spoonbill (*Platalea regia*); and
- Eastern Snake-necked Turtle (*Chelodina longicollis*)

The Nankeen Night Heron and the Royal Spoonbill are considered a low to moderate likelihood of occurrence and may forage along the margins of the dams within the BESS site and in the adjoining pasture when it is wet; though this habitat is not limited in the surrounding landscape.

The Eastern Snake-necked Turtle is considered a moderate likelihood of occurrence in habitats associated with the dams on the BESS site. It should be noted that this species is considered an introduced species to the Peninsula (Ecology Australia 2018).

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The EPBC Act Protected Matters Search Tool also identified 33 additional species of fauna species listed as threatened under the EPBC Act, which may occur, or for which suitable habitat may occur, within a 5 km radius of the study area (Appendix D). With the exception of the Grey Headed Flying-fox, none of these additional species are considered likely to occur at the site. The database predicts these species to occur on the basis of broad drainage basins and Bioclim modelling. Therefore, the predicted occurrences of some species sometimes extend well beyond their actual range, or the species are now considered extinct in southern Victoria, eg Regent Honeyeater (*Xanthomyza phrygia*). A number of pelagic seabirds (ie birds that spend most of their life on the open ocean) have also been identified, which may opportunistically enter offshore waters to feed. The Grey-headed Flying fox may occasionally feed on apples from the remaining apple trees within the BESS site and also nectar from eucalypt trees within the AusNet site and adjoining properties.

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Table 4.1 Threatened fauna species previously recorded within 5 km of the site

Scientific name	Common name	EPBC Act	FFG Act	Advisory list	Number of records	Last record	Likelihood of occurrence		Primary habitat on the peninsula
							BESS	AusNet	
Birds									
<i>Actitis hypoleucos</i>	Common Sandpiper			vu	7	2019	Unlikely	Unlikely	Coastal and freshwater waterbodies
<i>Ardea alba</i>	Great Egret		L	vu	64	2018	Low	Unlikely	Freshwater waterbodies and coastal habitats
<i>Ardea intermedia plumifera</i>	Plumed Egret		L	en	17	2019	Low	Unlikely	Freshwater waterbodies
<i>Arenaria interpres</i>	Ruddy Turnstone			vu	2	1979	Unlikely	Unlikely	Coastal habitats
<i>Aythya australis</i>	Hardhead			vu	14	2000	Low	Unlikely	Freshwater waterbodies
<i>Biziura lobata</i>	Musk Duck			vu	7	2007	Low	Unlikely	Freshwater waterbodies
<i>Botaurus poiciloptilus</i>	Australasian Bittern	EN	L	en	2	1988	Low	Unlikely	Freshwater waterbodies
<i>Calamanthus pyrrhopygius</i>	Chestnut-rumped Heathwren		L	vu	3	2008	Low	Low	Dense shubland/ woodlands
<i>Calidris canutus</i>	Red Knot	EN		en	3	1979	Unlikely	Unlikely	Coastal habitats
<i>Calidris ferruginea</i>	Curlew Sandpiper	CR	L	en	18	1993	Unlikely	Unlikely	Coastal habitats
<i>Ceyx azureus</i>	Azure Kingfisher			nt	1	2008	Low	Unlikely	Freshwater waterbodies
<i>Charadrius mongolus</i>	Lesser Sand Plover	EN		cr	1	1977	Unlikely	Unlikely	Coastal habitats
<i>Egretta garzetta</i>	Little Egret		L	en	6	1983	Low	Unlikely	Freshwater waterbodies and coastal habitats
<i>Gallinago hardwickii</i>	Latham's Snipe			nt	34	2018	Low	Unlikely	Freshwater waterbodies
<i>Haematopus fuliginosus</i>	Sooty Oystercatcher			nt	3	1989	Unlikely	Unlikely	Coastal habitats
<i>Haliaeetus leucogaster</i>	White-bellied Sea-Eagle		L	vu	8	2011	Low	Low	Coastal and freshwater waterbodies
<i>Hirundapus caudacutus</i>	White-throated Needletail	VU	L	vu	14	2006	Low	Low	Largely aerial species
<i>Hydroprogne caspia</i>	Caspian Tern		L	nt	28	2019	Low	Low	Coastal and freshwater waterbodies

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Table 4.1 Threatened fauna species previously recorded within 5 km of the site

Scientific name	Common name	EPBC Act	FFG Act	Advisory list	Number of records	Last record	Likelihood of occurrence		Primary habitat on the peninsula
							BESS	AusNet	
<i>Larus pacificus</i>	Pacific Gull			nt	172	2019	Unlikely	Unlikely	Coastal habitats
<i>Lathamus discolor</i>	Swift Parrot	CR	L	en	3	1979	Unlikely	Low	Dry forests and scattered eucalypts
<i>Lewinia pectoralis</i>	Lewin's Rail		L	vu	8	2018	Low	Unlikely	Freshwater waterbodies
<i>Limosa lapponica</i>	Bar-tailed Godwit	VU			2	1979	Unlikely	Unlikely	Coastal habitats
<i>Melanodryas cucullata</i>	Hooded Robin		L	nt	1	1897	Unlikely	Unlikely	Locally extinct
<i>Neophema chrysogaster</i>	Orange-bellied Parrot	CR	L	cr	2	1987	Unlikely	Unlikely	Locally extinct
<i>Ninox connivens</i>	Barking Owl		L	en	2	1978	Unlikely	Unlikely	Locally extinct
<i>Ninox strenua</i>	Powerful Owl		L	vu	1	2013	Low	Low	Open forests and woodlands; sometimes farmland
<i>Numenius madagascariensis</i>	Eastern Curlew	CR	L	vu	27	2014	Unlikely	Unlikely	Coastal habitats
<i>Numenius phaeopus</i>	Whimbrel			vu	3	1983	Unlikely	Unlikely	Coastal habitats
<i>Nycticorax caledonicus</i>	Nankeen Night-Heron			nt	13	2000	Low - moderate	Low	Freshwater waterbodies and wet pastures/wetlands
<i>Oxyura australis</i>	Blue-billed Duck		L	en	2	2007	Low	Unlikely	Freshwater waterbodies
<i>Phalacrocorax varius</i>	Pied Cormorant			nt	43	2019	Low	Low	Largely coastal, but sometime large inland waterbodies
<i>Platalea regia</i>	Royal Spoonbill			nt	96	2019	Low - moderate	Low	Freshwater and coastal waterbodies and wet pastures/grasslands
<i>Pluvialis fulva</i>	Pacific Golden Plover			vu	2	1979	Unlikely	Unlikely	Coastal habitats
<i>Pluvialis squatarola</i>	Grey Plover			en	1	1977	Unlikely	Unlikely	Coastal habitats

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Table 4.1 Threatened fauna species previously recorded within 5 km of the site

Scientific name	Common name	EPBC Act	FFG Act	Advisory list	Number of records	Last record	Likelihood of occurrence		Primary habitat on the peninsula
							BESS	AusNet	
<i>Pomatostomus temporalis</i>	Grey-crowned Babbler		L	en	3	1978	Low	Low	Locally extinct
<i>Porzana pusilla</i>	Baillon's Crake		L	vu	1	1980	Low	Unlikely	Freshwater waterbodies
<i>Spatula rhynchotis</i>	Australasian Shoveler			vu	6	2007	Low	Unlikely	Freshwater waterbodies
<i>Stagonopleura guttata</i>	Diamond Firetail		L	nt	1	2008	Low	Low	Grassy woodlands, health and grasslands/pasture
<i>Sterna striata</i>	White-fronted Tern			nt	1	1959	Unlikely	Unlikely	Coastal habitats
<i>Sternula nereis</i>	Fairy Tern	VU	L	en	3	1979	Unlikely	Unlikely	Coastal habitats
<i>Synoicus chinensis</i>	King Quail		L	en	1	1977	Unlikely	Unlikely	Locally extinct
<i>Tringa brevipes</i>	Grey-tailed Tattler		L	cr	3	1981	Unlikely	Unlikely	Coastal habitats
<i>Tringa nebularia</i>	Common Greenshank			vu	8	1987	Unlikely	Unlikely	Coastal habitats
<i>Xenus cinereus</i>	Terek Sandpiper		L	en	1	1977	Unlikely	Unlikely	Coastal habitats
Mammals									
<i>Pseudomys novaehollandiae</i>	New Holland Mouse	VU	L	vu	20	1972	Unlikely	Unlikely	Locally extinct
<i>Isodon obesulus obesulus</i>	Southern Brown Bandicoot	EN	L	nt	18	2011	Low	Low	Scrublands, heathlands, woodlands and dense exotic vegetation
<i>Megaptera novaeangliae australis</i>	Southern Humpback Whale	VU	L	vu	2	2013	Unlikely	Unlikely	Ocean
Reptiles									
<i>Chelodina longicollis</i>	Eastern Snake-necked Turtle			dd	3	2014	Moderate	Unlikely	Freshwater waterbodies

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Table 4.1 Threatened fauna species previously recorded within 5 km of the site

Scientific name	Common name	EPBC Act	FFG Act	Advisory list	Number of records	Last record	Likelihood of occurrence		Primary habitat on the peninsula
							BESS	AusNet	
<i>Lissolepis coventryi</i>	Swamp Skink		L	vu	17	2011	Unlikely	Unlikely	Vegetation adjoining wetlands and wet heath and scrub
<i>Pseudemoia rawlinsoni</i>	Glossy Grass Skink			vu	2	2006	Low	Low	Dense vegetation of grasslands, saltmarshes, shrubs and heath
Amphibians									
<i>Litoria raniformis</i>	Growing Grass Frog	VU	L	en	2	1999	Low	Unlikely	Freshwater waterbodies
<i>Pseudophryne semimarmorata</i>	Southern Toadlet			vu	12	1980	Low	Low	Moist depressions in forests and woodlands
Fish									
<i>Galaxiella pusilla</i>	Dwarf Galaxias	Vu	L	en	1	2006	Low	Low	Freshwater waterways and onstream wetlands
<i>Mugilogobius platynotus</i>	Flatback Mangrovegoby		L	vu	1	2009	Unlikely	Unlikely	Coastal habitats
Invertebrates									
<i>Pseudocalliax tooradin</i>	Ghost shrimp		L	vu	2	1965	Unlikely	Unlikely	Coastal habitats

Key:
 EPBC Act:
 Vu - vulnerable
 En - endangered
 Cr - critically endangered
 FFG Act:
 L - listed as threatened under the FFG Act
 Victorian advisory list:
 e - endangered
 vu - vulnerable

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4.4.1 Growling Grass Frog targeted survey – BESS site

i Background

The Growling Grass Frog is a relatively large ground dwelling frog that is typically most active at night. Due to significant reduction in habitat and populations this species is listed as Endangered under the EPBC Act. In greater Melbourne this species is known from freshwater wetlands, including artificial and ephemeral waterbodies and waterways. Although the Growling Grass Frog is largely aquatic and dependent on water bodies for breeding and typically overwinters in adjoining terrestrial habitat (hibernating), individuals may occasionally forage, shelter and overwinter at considerable distances from water (Clemann and Gillespie 2012). Breeding activity commences in September and usually continues until about January or February, although if environmental conditions are suitable, males can sometimes be heard calling from August to about April (Wildlife and Ecology 2021).

The initial site assessment of the BESS site determined that habitat within and adjoining the dams was potentially suitable for the Growling Grass Frog. Habitat is most suitable in the larger dams onsite, which support a good cover of submergent and floating aquatic vegetation. The limited fringing and terrestrial vegetation, and lack of basking habitat (eg rocks and logs), make the site less optimal for the Growling Grass Frog. The dams are also not well connected to other waterbodies.

Targeted surveys for the Growling Grass Frog have been previously undertaken across the Bluescope Steel site (c. 400 m south of the site) in wetlands supporting suitable habitat as part of the Port of Hastings expansion background studies. No Growling Grass Frogs were recorded during these surveys (Biosis 2015). The closest record is from Gordon Rolfe Reserve, 3 km north-west from the site, and dates to 1999. Due to the presence of suitable habitat within the large dams, a conservative moderate likelihood of occurrence was initially given for this species at the BESS site prior to undertaking targeted surveys. While the dams will be retained onsite, further surveys were needed to confirm their presence/absence because the Growling Grass Frog utilises terrestrial habitat.

ii Results

No Growling Grass Frogs were detected during the targeted visual and call play-back surveys undertaken over the three nights in November and December. Table 4.2 presents the survey results, including weather conditions and other species recorded, and Table 4.3 the assessment of habitat. Given that no populations of Growling Grass Frogs were identified during the current targeted surveys or other recent surveys (Biosis 2015), it is considered unlikely that this species occurs within the study area.

Five frog species were recorded during the surveys: Common Eastern Froglet, Striped Marsh Frog (*Limnodynastes peronii*), Eastern Banjo Frog, Whistling Tree Frog (*Litoria verreauxii*) and Peron's Tree Frog (*Litoria peroni*). All species except the Common Eastern Froglet were recorded during each survey. All five species are considered relatively common in the greater Melbourne area.

Table 4.2 Growling Grass Frog targeted survey results, BESS site

Survey	1	2	3
Date	22 November 20	1 December 2020	15 December 2020
Assessors	John Harris Bruce Edley	John Harris Suzie Webster	John Harris Suzie Webster
Time start	20:45	21:15	20:45
Time end	22:15	22:45	22:15

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Table 4.2 **Growling Grass Frog targeted survey results, BESS site**

Survey	1	2	3	
Weather conditions	Air temperature (start)	19.5	17	16.9
	Air temperature (end)	20.6	15	14
	Relative humidity (%)	87.6	60	85
	Wind speed (km/hr)	5	3.3	6
	Cloud cover (approx. %)	90	5	10
	Rainfall on day of survey (ml)	0	0	0
No. of Growling Grass Frogs detected	0	0	0	
Other frogs recorded	Common Eastern Froglet <i>Crinia signifera</i> (S/H) Striped Marsh Frog <i>Limnodynastes peronii</i> (S/H) Eastern Banjo Frog <i>Limnodynastes dumerilli</i> (H) Whistling Tree Frog <i>Litoria verreauxii</i> (S/H) Peron’s Tree Frog <i>Litoria peroni</i> (S/H)	Common Eastern Froglet <i>Crinia signifera</i> (S/H) Striped Marsh Frog <i>Limnodynastes peronii</i> including tadpoles (S/H) Eastern Banjo Frog <i>Limnodynastes dumerilli</i> including tadpoles (S/H) Whistling Tree Frog <i>Litoria verreauxii</i> including tadpoles (S/H) Peron’s Tree Frog <i>Litoria peroni</i> (S/H)	Striped Marsh Frog <i>Limnodynastes peronii</i> (S/H) Eastern Banjo Frog <i>Limnodynastes dumerilli</i> (H) Whistling Tree Frog <i>Litoria verreauxii</i> (S/H) Peron’s Tree Frog <i>Litoria peroni</i> (S/H)	

Table 4.3 **Growling Grass Frog habitat assessment, BESS site**

Habitat		Dam 1 (cover %)	Dam 2 (cover %)	Dam 3 (cover %)
Aquatic habitat				
Aquatic lifeform	Emergent vegetation	5	10	70
	Floating vegetation	20	25	10
	Submergent	40	30	32
Average cover		22	22	32
Terrestrial habitat				
		Cover %		
Terrestrial lifeform	Grass cover	95		
	Shrub cover	≤ 1		
	Rock/log	0		

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5 Potential biodiversity impacts

Presented below are the potential impacts of the project on biodiversity values. Assessment of impacts to patches and scattered trees as per the Victoria's *Guidelines for the removal, destruction or lopping of native vegetation* (the Guidelines, DELWP 2017a) as also addressed.

5.1 Summary of potential impacts

Potential impacts to native vegetation and fauna habitat include:

- BESS site:
 - BESS construction footprint and access track - removal of scattered herbaceous native plants growing amongst exotic vegetation. No patches or scattered trees as defined in the Guidelines will be impacted by these works. The few remaining apple trees (in the north-east section of the site) may need to be removed to allow for the site access track.
 - Power easement – some pine trees located on the western site boundary will require removal for the overhead powerline cables connecting the BESS site to the Tyabb substation. These trees provide some habitat value to common native fauna.
- Road reserve:
 - Site entrance widening - A Coast Teatree located at the entrance of the site will require removal as part of the widening of the site entrance to improve truck manoeuvrability (Photograph 3.8). Depending on the final footprint, the widening of the site access may require the removal of some native vegetation within the road reserve including the Coast Teatree that is already earmarked for pruning/removal for traffic safety purposes as well as some of the recent plantings of Coast Banksia. This area also supports a high cover of weed species (eg exotic grasses and Desert Ash* *Fraxinus angustifolia* recruits) and a few recent plantings of Coast Banksia. The widening is not proposed to impact the patch of Damp Sands Herb-rich Woodland further east.
 - Second site access - to comply with CFA Guidelines (CFA 2019), a second access to the property is likely to be required for firefighting purposes (ie fire access track). An existing second access on the eastern boundary. This area is dominated by exotic vegetation but removal of some (recent) scattered plantings (Photograph 3.9) maybe required if the access needs to be widened.
- AusNet site:
 - Power easement – two alignment options for the overhead cabling are being investigated, indicative alignments are shown in Figure 3.2. Removal of patch vegetation will be required for each of the alignment options. A worst-case scenario of native vegetation removal is presented below which includes all native vegetation within the subject site shown in Figure 3.2, with the exception of the three large trees, which will be retained. Scattered native (herbaceous) plants will also be removed in areas dominated by exotic vegetation. Depending on the which alignment option is used, removal of some Cypress Pines may also be required (Figure 3.2).

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5.2 Vegetation removal under the Guidelines

Native vegetation removal in Victoria is currently regulated by the *Guidelines for the removal, destruction or lopping of native vegetation* (the Guidelines) (DELWP 2017a); as specified by the purpose of Clause 52.17 (Native Vegetation) of the Mornington Peninsula planning scheme. The purpose of this Clause is to ensure that there is no net loss of biodiversity within Victoria. This is to be achieved by applying the three-step approach:

1. Avoiding the removal, destruction or lopping of native vegetation.
2. Minimise impacts from the removal, destruction or lopping of native vegetation that cannot be avoided.
3. Provide an offset to compensate for the biodiversity impact if a permit is granted to remove, destroy or lop native vegetation (DELWP 2017a).

The Guidelines further classify native vegetation as a Patch or a Scattered Tree; this classification assists in measuring the value and quantifying losses of native vegetation (DELWP 2017b, pg. 6).

No Scattered Trees are proposed for to be removed. Removal of patch vegetation within the AusNet site will be required for the new power easement. The three-step approach is addressed below, as well as the additional application requirements presented in Table 4 of the Guidelines. The DELWP generated Native Vegetation Removal report is attached as Appendix F.

5.2.1 Assessment pathway

The clearing proposal meets the requirement of the Basic Assessment pathway, based on the following attributes:

- **Location category:** Location 1. Removal of the native vegetation is not determined to have a significant impact on habitat for a rare or threatened species.
- **Extent of proposed removal:** 0.279 ha
- **Extent of past removal:** 0 ha
- **Large trees proposed to be removed:** 0

Dated photographs of the native vegetation proposed for removal as provided in Section 3.3.

5.2.2 Description of native vegetation proposed for removal

Removal of native vegetation is restricted to scattered native herbaceous plants in the BESS site and one Coast Teatree within the road reserve (Photograph 3.8). Scattered plantings of native species within the BESS site and the adjoining road reserve have recently been undertaken. Some of these species are not indigenous to the area. These plantings appear to serve as an amenity (*cf* a biodiversity) function.

Within the AusNet site, removal of patch vegetation will be required for the power easement (Photograph 3.10 and Photograph 3.13). The patches being considered for removal (Habitat Zones 6 and 8) are modified, which is reflected in their low Habitat Scores (Table 5.1). The modelled Strategic Biodiversity Value score is 0.558 for Habitat Zone 6 and 0.559 for Habitat Zone 8.

Table 5.1 Habitat hectare assessment of native vegetation proposed for removal, AusNet site

Habitat Zone		HZ 6	HZ 8
EVC		DSHRW	DSHRW
Site condition	Max score	Score	Score
Large trees	10	0	0
Canopy	5	0	5
Understorey	15	5	5
Lack of weeds	25	4	0
Recruitment	10	5	3
Organic litter	5	3	3
Logs	5	0	0
Total site score	75	17	16
Landscape value			
Patch size	10	1	1
Neighbourhood	10	0	0
Distance to core	5	1	1
Total landscape value	25	2	2
Habitat score (/100)		19	18
Habitat Score (/1)		0.19	0.18
Hectares (ha)		0.259	0.020
Habitat hectares (hha)		0.049	0.0036
Large Trees		0	0

Key:
 HZ - Habitat Zone
 EVC - Ecological Vegetation Class
 DSHRW - Damp Sands Herb-rich Woodland

5.2.3 Avoid and minimise statement

The study area has not been subject to any strategic level planning process.

The removal of Patches and Scattered Trees has been avoided on the BESS site and adjoining road reserve. Measures will be put in place to ensure the Damp Sands Herb-rich Woodland remnant within the road reserve is adequately protected, including the large Coast Manna Gum and associated Tree Protection Zone (refer Section 6).

Minimisation is being achieved within the AusNet site by ensuring protection of the three large trees (and associated Tree Protection Zones), which support the highest biodiversity values within the site. Further opportunities to minimise vegetation removal will be investigated once the alignment of the power easement has been finalised.

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5.2.4 Offset requirements

The removal of native vegetation presented in the DELWP generated Native Vegetation Removal Report (Appendix F) is considered worst-case scenario. This includes the use of 220 kV overhead cables with an easement width of 40 m (the maximum voltage and easement width being investigated), with all vegetation within the easements and between the easements assumed lost except for the Large Trees. Removal of native vegetation will ultimately only be required for one alignment.

If the native vegetation is approved for removal, a total of 0.062 General Habitat Units will required to be secured prior to the removal of the vegetation. This offset site must be located within the Port Phillip and Westernport Catchment Management Authority or the Mornington Peninsula Shire municipality and have a minimum modelled Strategic Biodiversity Value score of 0.449 (Table 5.2). No large tree offsets will be required.

Table 5.2 Offset requirements for the AusNet site

General offset amount	0.062 General Habitat Units
Vicinity	Port Phillip and Westernport Catchment Management Authority or Mornington Peninsula Shire Council
Minimum Strategic Biodiversity Value score	0.449
Large trees	0

5.2.5 Offset strategy

The offset strategy for the Mornington BESS project is to secure offsets from the Native Vegetation Credit Register via an accredited offset broker. A search of the Native Vegetation Credit Register online search tool has shown there are 35 existing offset sites that could potentially satisfy the offset requirements presented in Table 5.2. The report generated from this tool is attached as Appendix G.

If the removal of native vegetation is approved and a planning permit is issued, DELWP must be provided with an allocated credit extract that demonstrates that the offset has been secured prior to native vegetation being removed. This requirement will be included within the planning permit. Once secured, the proponent will be issued with an official credit extract from the Native Vegetation Credit Register, which will include: the allocated credits, the offset requirements of the planning permit, and the project the credits are allocated to (and associated planning permit). This extract is provided by DELWP.

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6 Policy and legislation

6.1 Environment Protection and Biodiversity Conservation Act 1999

The EPBC Act pertains to Matters of National Environmental Significance (MNES). MNES include nationally and internationally significant flora, fauna, ecological communities, heritage places and water resources. It applies to public and private land, and referral to the Commonwealth Department of Agriculture, Water and Environment (DAWE) is necessary when a proposed action is considered likely to have a significant impact on any matter of national environmental significance listed under the EPBC Act.

Two ecological communities have previously been recorded in the Tyabb area (eg Subtropical and Temperate Coastal Saltmarsh and Herbaceous Wetland (Freshwater) of the Temperate Lowland Plains). No ecological communities listed under the EPBC Act were recorded within the study area.

The majority of the EPBC Act-listed fauna species previously recorded within the greater Tyabb area are associated with Western Port Bay and unlikely to regularly utilise the study area. The Southern Brown Bandicoot, Growling Grass Frog and Grey-headed Flying Fox have been previously recorded or may potentially occur within the wider Tyabb area. No significant impacts these species are anticipated, because:

- the proposed works areas do not support suitable habitat for the Southern Brown Bandicoot;
- no Growling Grass Frogs were recorded during the targeted surveys and are unlikely to occur within the study area; and
- the Grey-headed Flying Fox may occasionally forage within the apple trees and eucalypts in the study area. Removal of the few remaining apple trees within the BESS site and the small Swamp Gum within the AusNet site are not expected to have significant impacts to this species.

There is also little habitat for EPBC Act-listed flora species onsite, with the exception of River Swamp Wallaby-grass. This species is known to occur in the Tyabb area (Biosis 2015). The upper margins of the dams, particularly the large dams within the BESS site, support potentially suitable habitat for this species. These dams will be retained, therefore, no significant impact to this species is expected.

The Westernport Ramsar site is located 1.7 km east of the site. Adverse impacts from the proposed development are considered unlikely if the requirements of Clause 37.01 (SUZ1) of the Mornington Peninsula Planning Scheme are met, and any site run-off is adequately managed through the Construction Environmental Management Plan (CEMP) and implementation of operations-phase surface water/drainage controls.

The Mornington BESS project is therefore considered unlikely to result in a significant impact to any MNES.

6.2 Flora and Fauna Guarantee Act 1988

The FFG Act lists flora and fauna species and ecological communities that are recognised as threatened in Victoria. The FFG Act also identifies threatening processes and flora that require protection. Protected flora includes those species listed as rare or threatened under the Act, plant taxa that belong to listed communities and plant taxa that are not threatened but require protection for other reasons (eg over-collection).

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The FFG Act largely pertains to public land. A permit is required to remove protected flora from public land (eg crown land or land owned by a public authority). It is understood that the BESS site and AusNet site are privately owned and no protected flora are proposed for removal from the road reserve, therefore a protected flora permit is not required.

No flora or fauna species listed as threatened under the FFG Act are considered to have a moderate or higher likelihood of occurrence within the study area (refer Table 3.3 and Table 4.1).

6.3 Planning and Environment Act 1987

The *Planning and Environment Act 1987* establishes a framework for planning the use, development and protection of land, including native vegetation clearing controls. The Act allows for the development of planning schemes in Victoria.

Within the Mornington Peninsula Planning Scheme (MPPS), Clause 52.17 (Native Vegetation) and Clause 37.01 (Special Use Zone – Schedule 1) identifies circumstances where a planning permit is required for native vegetation removal and to undertake works. Clause 37.01 also requires consideration of fauna values.

Clause 52.17 requires a planning permit if native vegetation is proposed to be removed, destroyed or lopped (unless an exemption applies). Native vegetation is defined in the planning scheme as “*plants that are indigenous to Victoria, including trees, shrubs, herbs and grasses*”. The Guidelines sets out the planning permit application requirements for works requiring the removal of native vegetation. The removal of native vegetation for the Mornington BESS project is addressed in Section 5.2 and would include: the removal of scattered native plants within areas dominated by exotic vegetation across the study area including the Coast Teatree within the road reserve, and 0.279 ha of modified Damp Sands Herb-rich Woodland within the AusNet site. No Scattered Trees are proposed for removal.

Removal of scattered native vegetation in the road reserve and changes to site access will require written approval from the relevant road authority.

The following exemptions under Clause 52.17 may apply to the Mornington BESS project:

- Fire protection – clearing to establish a firebreak or firefighting access track where there is a clear need for a fuel break and/or firefighting access track to protect life and property (DELWP 2017c).
- Fences – native vegetation that is to be removed, destroyed or lopped to the minimum extent necessary to enable the operation or maintenance of an existing fence or the construction of a boundary fence between properties of different ownerships. Clearing along both sides of the fence when combined must not exceed 4 m in width except where land has already been cleared 4 m or more along one side of the fence, then up to 1 m can be cleared along the other side of the fence (DELWP 2017c).

DELWP (Native Vegetation Regulation Division) has advised the interpretation of the firefighting access track exemption in relation to removal of scattered native plants within the road reserve is up to the discretion of Council. The plantings of native vegetation within the road appear to serve an amenity function. Whether these plantings are exempt from a planning permit will also need to be discussed with Council. Native vegetation planted or grown with public funding for the primary purposes of enhancing biodiversity or protection of land is not exempt from a permit, unless the funding agency (or its successor) provides written agreement to the landholder to remove the native vegetation (DELWP 2017c). Examples of plantings for biodiversity and land protection purposes are provided in DELWP’s Guidance for native vegetation planning permit exemptions (DELWP 2017c).

Any use of the exemptions under 52.17 must be for the purpose of that particular exemption only and should demonstrate that removal of native vegetation was unavoidable. Any native vegetation removed must be to the minimum extent necessary (DELWP 2017c).

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Under Clause 37.01, the approval authority will also consider in their assessment of any required vegetation clearance:

- the value of the native vegetation to be removed in terms of its physical condition, rarity or variety;
- options to avoid vegetation clearing through re-location or re-design of proposed buildings or works;
- impacts to soil stability arising from the clearance (erosion hazard);
- the effect on fauna arising from the clearance (ie loss of habitat); and
- implications to the ecological balance of the broader area.

A breakdown of potential impacts to biodiversity is provided in Section 5.1. The areas proposed for development do not support significant biodiversity values. The BESS site has largely been cleared and the land use history has resulted in little biodiversity values remaining in the designated development footprint. The removal of patch vegetation for the construction of the power easement in the AusNet site is not expected to have significant impacts to fauna within the site.

The CEMP will address measures to protect the biodiversity values outside of the development footprint and should include: the provision of temporary exclusion fencing around the perimeter of the dams and the TPZ of all large trees during construction to ensure these values are protected, and controls required for managing sediment and site run-off. Long-term run off and surface water control during the operational phase of the project will also be addressed as part of the operational procedures.

6.4 Mornington Green Wedge Management Plan

The Mornington Peninsula Green Wedge Management Plan (MPS 2019) was developed to highlight the particular values of the Mornington Peninsula Green Wedge, outline key issues, opportunities and likely future pressures and provide a set of actions in response, forming part an overall planning and policy framework.

The Green Wedge Plan highlights the importance of a reliable electricity supply network, with associated maintenance and fire hazard reduction requirements. It also recognises that the Council supports investigation of alternative and renewable energy technologies that are consistent with achieving carbon neutrality goals.

The plan recognises that the design, siting and maintenance of all infrastructure should have regard to the landscape and biodiversity of the Mornington Peninsula Green Wedge. This may include:

- the need for site and location specific solutions to protect important values, such as locating infrastructure to avoid impact on view lines and landscape character;
- selecting locations to avoid or minimise the need for vegetation removal; and
- selective management of vegetation as part of maintenance programs.

Moaneng has designed the project to be consistent with the above goals.

The Green Wedge Management Plan also states that “it is critical that service authorities, supply companies and their contractors engage with Council at an early stage in project planning to support appropriate outcomes” (MPS 2019).

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Maoneng first engaged Mornington Peninsula Shire on the 12 March 2020. Council attendees included Council Officers from the Planning Services and Climate and Energy Teams. Maoneng introduced the project to Council at this meeting. A formal pre-planning application meeting was held on the 25 June 2020, attended by Council’s Planning Services Team, Maoneng and EMM. Council outlined its requirements for the assessment. Maoneng has maintained regular contact with Council since these formal meetings.

6.5 Catchment and Land Protection Act 1994

The *Catchment and Land Protection Act 1994* (CaLP Act) provides a legislative framework for the management of land, including the control of declared noxious weeds and pest animals. Each Catchment Management Authority (CMA) region within Victoria has a designated list of declared noxious weeds. Under the CaLP Act, all landowners are legally required to manage declared noxious weeds and pest animals on their land.

Six weed species recorded within the study area are listed as noxious weeds within the Port Phillip and Westernport CMA (Table 6.1); two species are classified as restricted weeds (ie trade in these weeds and their propagules is prohibited) and four species are classified as Regionally Controlled Weed (land owners have the responsibility to take all reasonable steps to prevent the growth and spread of regionally controlled weeds on their land). Boneseed, Blackberry and Gorse were all recorded in the BESS site adjoining the dams and will require ongoing control.

European Rabbits are classified as an ‘established pest animal’ in Victoria. Under the CaLP Act there is an expectation that measures will be taken by a landowner to manage and reduce the spread of these pest animals. Rabbits and diggings by rabbits were recorded within the study area and within the Thornells Road reserve between the site and Dandenong Hastings Road. Unless a coordinated approach is undertaken with adjoining landowners, the eradication of rabbits will be unachievable. Control measures that could be undertaken within the study area include the removal of hard rubbish, green waste and Blackberry thickets around the dams. This will reduce harbor (shelter) for rabbits. If any warrens are found onsite in the future, these should be backfilled.

Table 6.1 Weed species listed under the CaLP Act recorded within the study area

Species	Common name	CaLP status
<i>Chrysanthemoides monilifera</i>	Boneseed	Control
<i>Cirsium vulgare</i>	Spear Thistle	Control
<i>Rubus anglocandicans</i>	Common Blackberry	Control
<i>Ulex europaeus</i>	Gorse	Control
<i>Opuntia</i> sp.	Prickly Pear	Restricted
<i>Oxalis pes-caprae</i>	Soursob	Restricted

6.6 National Trust

The National Trust is a community-based, non-government organisation, and as such it has no statutory power. However, if a place becomes threatened, the Trust may campaign and advocate for its protection (National Trust Victoria website, November 2020).

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The site is located within the Tyabb Coastline and Hinterland National Trust site (site no. 70353). The National Trust site area extends from Bungower Road to the north, Tyabb-Tooradin and Dandenong-Hastings Roads to the west, to Denham Road to the south and the low water mark of Westernport to the east. It is considered of regional landscape significance as it:

- contains a large area of relatively intact saltmarsh and mangrove inter-tidal zone and associated hinterland;
- is a wildlife area and an integral part of the shoreline of Westernport where the lack of public access has limited the disturbance of plant and animal communities; and
- illustrates how ecosystems change as land is built up from the sea, and in the portion subject to marina development, the capacity for vegetation in such areas to regenerate following disturbance (Heritage Council Victoria website, November 2020).

The site does not support habitat for the vegetation communities and fauna species identified in this National Trust listing, and the project would therefore have not impact on the values identified in the listing.

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7 Summary and recommendations

7.1 Summary

The study area has been largely cleared of remnant vegetation. The highest biodiversity values for the site are associated with the dams and the large trees, all of which will be retained. Removal of Patches and Scattered Trees can be avoided within the BESS site and road reserve. Removal of modified patches of Damp Sands Herb-rich Woodland will be required for the power easement; the largest patch is treeless. The extent of patch vegetation mapped within the DELWP generated Native Vegetation Removal report (Appendix F) is considered to be a worst-case scenario and includes both alignment options for the power easement; only one easement is required to connect the BESS to the substation.

7.2 Recommendations

The following recommendations are made to protect the biodiversity values of the study area:

- To avoid impacts to the large trees, erect temporary exclusion fencing around Tree Protection Zone of all large trees within the BESS and Aunet sites. Table 7.1 provides the size of the TPZs for each large tree. The TPZ will need to be measured onsite (from the trunk of the trees) and suitable fencing set up to ensure the TPZ is avoided.
- To avoid impacts to the dams, erect temporary exclusion fencing around the dams during construction.
- To reduce harbour for rabbits, remove green and hard waste from around the dams before construction works commence. Ensure any rabbit warrens onsite are backfilled.
- Ensure weeds are adequately managed during construction works and ongoing during operations, particularly woody weeds. Management of noxious weeds is required under the *Catchment and Land Protection Act 1994*.
- If approved, native vegetation offsets will need to be secured after the planning permit is issued and before clearing of the native vegetation (refer Section 5.2).

All temporary fencing will need to be in place prior to any works commencing onsite and not be removed until works are completed.

Table 7.1 Large Trees within the study area

Tree Number	Location	Species	Common Name	DBH	TPZ
1	Road Reserve	<i>Eucalyptus viminalis</i> ssp. <i>pryoriana</i>	Coast Manna Gum	81 cm	9.7 m
2	AusNet site	<i>Eucalyptus radiata</i> susp. <i>radiata</i>	Narrow-leaf Peppermint	82 cm	9.9 m
3	AusNet site	<i>Eucalyptus ovata</i> var. <i>ovata</i>	Swamp Gum	112 cm	13.4 m
4	Ausent site	<i>Eucalyptus viminalis</i> ssp. <i>pryoriana</i>	Coast Manna Gum	83 cm	10 m

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Appendix A

Plant taxa recorded within the BESS site

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Table A.1 Plant taxa recorded within the BESS site

	Scientific name	Common name	Location
	<i>Acacia dealbata</i> subsp. <i>dealbata</i>	Silver Wattle	P
#	<i>Acacia howittii</i>	Sticky Wattle	P
#	<i>Acacia longifolia</i> subsp. <i>longifolia</i>	Sallow Wattle	P
	<i>Acacia mearnsii</i>	Black Wattle	D
	<i>Acacia melanoxylon</i>	Blackwood	D
*	<i>Acetosella vulgaris</i>	Sheep Sorrel	
*	<i>Agrostis capillaris</i> var. <i>capillaris</i>	Brown-top Bent	
	<i>Alternanthera denticulata</i> s.l.	Lesser Joyweed	D
	<i>Amphibromus</i> sp.	Swamp Wallaby-grass	D
*	<i>Anthoxanthum odoratum</i>	Sweet Vernal-grass	
*	<i>Arctotheca calendula</i>	Cape weed	
*	<i>Avena barbata</i>	Bearded Oat	
	<i>Banksia integrifolia</i> subsp. <i>integrifolia</i>	Coast Banksia	P
*	<i>Bromus catharticus</i>	Prairie Grass	
*	<i>Cenchrus clandestinus</i>	Kikuyu	
	<i>Centella cordifolia</i>	Centella	D
*	<i>Cerastium glomeratum</i>	Common Mouse-ear Chickweed	
*	<i>Chrysanthemoides monilifera</i>	Boneseed	D
*	<i>Cirsium vulgare</i>	Spear Thistle	
#	<i>Corymbia maculata</i>	Spotted Gum	P
*	<i>Cyperus eragrostis</i>	Drain Flat-sedge	
*	<i>Dactylis glomerata</i>	Cocksfoot	
	<i>Epilobium billardierianum</i> subsp. <i>billardierianum</i>	Smooth Willow-herb	D
*	<i>Ehrharta erecta</i> var. <i>erecta</i>	Panic Veldt-grass	
*	<i>Ehrharta longiflora</i>	Annual Veldt-grass	
	<i>Eleocharis acuta</i>	Common Spike-sedge	D
	<i>Eleocharis sphacelata</i>	Tall Spike-sedge	D
*	<i>Erigeron sumatrensis</i>	Tall Fleabane	
#	<i>Eucalyptus leucoxylon</i> subsp. <i>megalocarpa</i>	Large-fruit Yellow-gum	N, P
	<i>Eucalyptus ovata</i> var. <i>ovata</i>	Swamp Gum	N, P?
*	<i>Fumaria capreolata</i>	White Fumitory	
*	<i>Gamochaeta purpurea</i> s.l.	Purple Cudweed	

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Table A.1 Plant taxa recorded within the BESS site

Scientific name	Common name	Location
* <i>Glyceria declinata</i>	Manna Grass	
* <i>Holcus lanatus</i>	Yorkshire Fog	
* <i>Hypochaeris radicata</i>	Flatweed	
<i>Juncus procerus</i>	Tall Rush	D
<i>Juncus sarophorus</i>	Broom Rush	D
<i>Juncus</i> sp.	Rush	
<i>Lachnagrostis filiformis</i>	Common Blown-grass	
* <i>Lactuca serriola</i>	Prickly Lettuce	
<i>Laphangium luteoalbum</i>	Jersey Cudweed	
* <i>Leontodon saxatilis</i> subsp. <i>saxatilis</i>	Hairy Hawkbit	
<i>Leptospermum laevigatum</i>	Coast Tea-tree	D
* <i>Lolium multiflorum</i>	Italian Rye-grass	
* <i>Lolium perenne</i>	Perennial Rye-grass	
* <i>Lolium rigidum</i>	Wimmera Rye-grass	
* <i>Lotus corniculatus</i>	Bird's-foot Trefoil	
* <i>Lotus</i> sp. (naturalised)	Trefoil	
* <i>Lotus subbiflorus</i>	Hairy Bird's-foot Trefoil	
* <i>Lysimachia arvensis</i> (Red-flowered variant)	Scarlet Pimpernel	
<i>Lythrum hyssopifolia</i>	Small Loosestrife	
* <i>Malus pumila</i>	Apple	
* <i>Malva parviflora</i>	Small-flower Mallow	
* <i>Medicago polymorpha</i>	Burr Medic	
* <i>Oputnia</i> sp.	Prickly Pear	
* <i>Oxalis pes-caprae</i>	Soursob	
* <i>Paspalum dilatatum</i>	Paspalum	
* <i>Phalaris aquatica</i>	Toowoomba Canary-grass	
* <i>Pinus radiata</i>	Radiata Pine	
* <i>Plantago lanceolata</i>	Ribwort	
* <i>Poa annua</i>	Annual Meadow-grass	
<i>Potamogeton ochreatus</i>	Blunt Pondweed	D
* <i>Raphanus raphanistrum</i>	Wild Radish	
* <i>Romulea rosea</i> var. <i>australis</i>	Common Onion-grass	

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Table A.1 Plant taxa recorded within the BESS site

Scientific name	Common name	Location
* <i>Rubus anglocandicans</i>	Common Blackberry	D
* <i>Rumex conglomeratus</i>	Clustered Dock	
* <i>Rumex crispus</i>	Curled Dock	
* <i>Salvia verbenaca</i>	Wild Sage	
<i>Schoenus apogon</i>	Common Bog-sedge	
* <i>Sonchus oleraceus</i>	Common Sow-thistle	
* <i>Sporobolus africanus</i>	Rat-tail Grass	
* <i>Trifolium repens</i> var. <i>repens</i>	White Clover	
* <i>Trifolium subterraneum</i>	Subterranean Clover	
<i>Typha domingensis</i>	Narrow-leaf Cumbungi	D
* <i>Ulex europaeus</i>	Gorse	D
* <i>Vicia sativa</i>	Common Vetch	D
* <i>Vulpia bromoides</i>	Squirrel-tail Fescue	

Key:

P - planted

D - only recorded within or adjoining the dams

N - neighbouring property

* - exotic

- native to Victoria but not indigenous to the site

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Appendix B

Plant taxa recorded within the adjoining road reserve

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Table B.1 Plant taxa recorded within adjoining road reserve

Scientific name	Common name	Planted
<i>Acacia dealbata</i> subsp. <i>dealbata</i>	Silver Wattle	P
<i>Acacia mearnsii</i>	Black Wattle	P
<i>Acacia melanoxylon</i>	Blackwood	
* <i>Acetosella vulgaris</i>	Sheep Sorrel	
* <i>Anthoxanthum odoratum</i>	Sweet Vernal-grass	
* <i>Arctotheca calendula</i>	Cape weed	
<i>Banksia integrifolia</i> subsp. <i>integrifolia</i>	Coast Banksia	P
<i>Callistemon</i> sp.	Bottlebrush	P
* <i>Delairea odorata</i>	Cape Ivy	
* <i>Ehrharta erecta</i> var. <i>erecta</i>	Panic Veldt-grass	
<i>Eucalyptus viminalis</i> subsp. <i>pyoriana</i>	Coast Manna-gum	
<i>Exocarpos cupressiformis</i>	Cherry Ballart	
* <i>Fraxinus angustifolia</i>	Desert Ash	
<i>Gahnia radula</i>	Thatch Saw-sedge	P?
* <i>Hesperocyparis macrocarpa</i>	Monterey Cypress	P
* <i>Holcus lanatus</i>	Yorkshire Fog	
<i>Juncus</i> sp.	Rush	
<i>Laphangium luteoalbum</i>	Jersey Cudweed	
* <i>Leontodon saxatilis</i> subsp. <i>saxatilis</i>	Hairy Hawkbit	
<i>Leptospermum laevigatum</i>	Coast Tea-tree	
<i>Lomandra longifolia</i>	Spiny-headed Mat-rush	P
* <i>Oxalis incarnata</i>	Pale Wood-sorrel	
* <i>Oxalis purpurea</i>	Large-flower Wood-sorrel	
* <i>Phalaris aquatica</i>	Toowoomba Canary-grass	
* <i>Pittosporum undulatum</i>	Sweet Pittosporum	
* <i>Rubus anglocandicans</i>	Common Blackberry	
* <i>Sonchus oleraceus</i>	Common Sow-thistle	
* <i>Vulpia bromoides</i>	Squirrel-tail Fescue	
* <i>Watsonia meriana</i> var. <i>bulbillifera</i>	Bulbil Watsonia	

Key:
P - planted
* - exotic

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Appendix C

Plant taxa recorded within the AusNet site

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Table C.1 Plant taxa recorded within the AusNet site

Species	Common Name
<i>Acacia mearnsii</i>	Black Wattle
* <i>Agrostis capillaris</i> var. <i>capillaris</i>	Brown-top Bent
* <i>Aira elegantissima</i>	Delicate Hair-grass
<i>Allocasuarina littoralis</i>	Black Sheoak
* <i>Anthoxanthum odoratum</i>	Sweet Vernal-grass
* <i>Arctotheca calendula</i>	Cape weed
* <i>Briza maxima</i>	Large Quaking-grass
* <i>Briza minor</i>	Lesser Quaking-grass
* <i>Bromus catharticus</i>	Prairie Grass
* <i>Bromus diandrus</i>	Great Brome
* <i>Bromus hordeaceus</i> subsp. <i>hordeaceus</i>	Soft Brome
* <i>Cenchrus clandestinus</i>	Kikuyu
* <i>Centaurium erythraea</i>	Common Centaury
* <i>Cerastium glomeratum</i>	Common Mouse-ear Chickweed
* <i>Chenopodium album</i>	Fat Hen
* <i>Cirsium vulgare</i>	Spear Thistle
* <i>Cupressus macrocarpa</i>	Monterey Cypress
* <i>Dactylis glomerata</i>	Cocksfoot
* <i>Ehrharta erecta</i> var. <i>erecta</i>	Panic Veldt-grass
* <i>Ehrharta longiflora</i>	Annual Veldt-grass
<i>Eucalyptus ovata</i> var. <i>ovata</i>	Swamp Gum
<i>Eucalyptus radiata</i> subsp. <i>radiata</i>	Narrow-leaf Peppermint
<i>Eucalyptus viminalis</i> subsp. <i>pryoriana</i>	Coast Manna-gum
<i>Exocarpos cupressiformis</i>	Cherry Ballart
* <i>Holcus lanatus</i>	Yorkshire Fog
* <i>Hypochoeris radicata</i>	Flatweed
* <i>Juncus microcephalus</i>	Tiny-headed Rush
<i>Juncus pallidus</i>	Pale Rush
<i>Juncus sarophorus</i>	Broom Rush
<i>Laphangium luteoalbum</i>	Jersey Cudweed
* <i>Leontodon saxatilis</i> subsp. <i>saxatilis</i>	Hairy Hawkbit
<i>Lentospermum continentale</i>	Prickly Tea-tree
<i>Lolium rigidum</i>	Wimmera Rye-grass

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Table C.1 Plant taxa recorded within the AusNet site

Species	Common Name
<i>Lomandra filiformis</i>	Wattle Mat-rush
<i>Lomandra longifolia</i>	Spiny-headed Mat-rush
* <i>Lotus corniculatus</i>	Bird's-foot Trefoil
* <i>Lotus subbiflorus</i>	Hairy Bird's-foot Trefoil
* <i>Lysimachia arvensis</i> (Red-flowered variant)	Scarlet Pimpernel
<i>Melaleuca armillaris</i> subsp. <i>armillaris</i>	Giant Honey-myrtle P
<i>Microlaena stipoides</i> var. <i>stipoides</i>	Weeping Grass
* <i>Paspalum dilatatum</i>	Paspalum
* <i>Phalaris aquatica</i>	Toowoomba Canary-grass
* <i>Plantago lanceolata</i>	Ribwort
* <i>Romulea rosea</i> var. <i>australis</i>	Common Onion-grass
<i>Rytidosperma laeve</i>	Smooth Wallaby-grass
<i>Rytidosperma racemosum</i> var. <i>racemosum</i>	Slender Wallaby-grass
<i>Rytidosperma setaceum</i>	Bristly Wallaby-grass
* <i>Sonchus oleraceus</i>	Common Sow-thistle
* <i>Sporobolus africanus</i>	Rat-tail Grass
<i>Themeda triandra</i>	Kangaroo Grass
* <i>Ulex europaeus</i>	Gorse
* <i>Vicia sativa</i>	Common Vetch
* <i>Vulpia bromoides</i>	Squirrel-tail Fescue

Key:

P - planted

* - exotic

- native to Victoria but not indigenous to the site

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Appendix D

Protected Matters Search Tool results

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Table C.1 and C.2 show the threatened species identified from the Protected Matters Search Tool but not previously recorded within the data review area.

Table D.1 Protected Matters Search Tool - threatened fauna species

Scientific name	Common name	EPBC	FFG	Advisory list
<i>Anthochaera phrygia</i>	Regent Honeyeater	Cr	L	ce
<i>Antechinus minimus maritimus</i>	Swamp Antechinus	Vu	L	nt
<i>Calidris tenuirostris</i>	Great Knot	Cr	L	en
<i>Caretta caretta</i>	Loggerhead Turtle	En		
<i>Charadrius leschenaultii</i>	Greater Sand Plover	Vu		
<i>Chelonia mydas</i>	Green Turtle	Vu		
<i>Dermochelys coriacea</i>	Leatherback Turtle	En	cr	L
<i>Diomedea antipodensis</i>	Antipodean Albatross	Vu		
<i>Diomedea antipodensis gibsoni</i>	Gison's Albatross	Vu		
<i>Diomedea epomophora</i>	Southern Royal Albatross	Vu	L	vu
<i>Diomedea exulans</i>	Wandering Albatross	Vu	L	en
<i>Diomedea sanfordi</i>	Northern Royal Albatross	En		
<i>Fregetta grallaria grallaria</i>	White-bellied Storm-Petrel	Vu		
<i>Grantiella picta</i>	Painted Honeyeater	Vu		
<i>Macronectes giganteus</i>	Southern Giant Petrel	En	L	vu
<i>Macronectes halli</i>	Northern Giant Petrel	Vu	L	nt
<i>Pachyptila turtur subantarctica</i>	Fairy Prion	Vu		vu
<i>Petauroides volans</i>	Greater Glider	Vu		vu
<i>Phoebastria fusca</i>	Sooty Albatross	Vu		
<i>Potorous tridactylus tridactylus</i>	Long-nosed Potoroo	Vu	L	nt
<i>Prototroctes maraena</i>	Australian Grayling	Vu	L	vu
<i>Pterodroma leucoptera leucoptera</i>	Gould's Petrel	En		
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	Vu	L	vu
<i>Rostratula australis</i>	Australian Painted Snipe	En	L	ce
<i>Synemon plana</i>	Golden Sun Moth	Ce	L	ce
<i>Thalassarche bulleri</i>	Buller's Albatross	Vu		
<i>Thalassarche cauta cauta</i>	Shy Albatross	Vu		
<i>Thalassarche cauta steadi</i>	White-capped Albatross	Vu		
<i>Thalassarche chrysostoma</i>	Grey-headed Albatross	En	L	vu
<i>Thalassarche impavida</i>	Campbell Albatross	Vu		
<i>Thalassarche melanoleuca</i>	Black-browed Albatross	Vu		vu

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Table D.1 Protected Matters Search Tool - threatened fauna species

Scientific name	Common name	EPBC	FFG	Advisory list
<i>Thalassarche salvini</i>	Salvin's Albatross	Vu		
<i>Thalassarche rubricollis rubricollis</i>	Hooded Plover (eastern)	Vu	L	vu

Key:

EPBC Act:

VU – vulnerable

EN – endangered

CR – critically endangered

FFG Act:

L - Listed as threatened under the FFG Act

Victorian advisory list:

ce – critically endangered

en – endangered

vu – vulnerable

nt – near threatened

Table D.2 Protected Matters Search Tool – threatened flora species

Scientific name	Common name	EPBC	FFG	Advisory list
<i>Caladenia orientlis</i>	Eastern Spider-orchid	En	L	e
<i>Dianella amoena</i>	Matted Flax-lily	En	L	e
<i>Glycine latrobeana</i>	Purple Clover	Vu	L	vu
<i>Prasophyllum frenchii</i>	Maroon Leek-orchid	En	L	e
<i>Prasophyllum spicatum</i>	Dense Leek-orchid	Vu		e
<i>Pterostylis chlorogramma</i>	Green-stiped Greenhood	Vu	L	vu
<i>Pterostylis cucullata</i>	Leafy Greenhood	Vu	L	e
<i>Senecio psilocarpus</i>	Swamp Fireweed	Vu		vu
<i>Xerochrysum palustre</i>	Swamp Everlasting	Vu	L	vu

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Appendix E

Fauna species recorded within the study area

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E.1 Fauna species recorded within the study area

Table E.1 Fauna species recorded within the Mornington BESS and AusNet sites

Scientific name	Common name	BESS	AusNet
Birds			
<i>Anas superciliosa</i>	Pacific Black Duck	✓(D)	
<i>Tachybaptus novaehollandiae</i>	Australasian Grebe	✓(D)	
<i>Threskiornis spinicollis</i>	Straw-necked Ibis	✓	
<i>Circus assimilis</i>	Swamp Harrier	✓(D)	
<i>Eolophus roseicapilla</i>	Galah	✓	✓
<i>Platycercus elegans</i>	Crimson Rosella	✓	✓
<i>Grallina cyanoleuca</i>	Magpie-lark	✓	✓
<i>Gymnorhina tibicen</i>	Australian Magpie	✓	✓
<i>Corvus coronoides</i>	Australian Raven	✓	✓
<i>Manorina melanocephala</i>	Noisy Minor	✓	✓
<i>Vanellus miles</i>	Masked Lapwing	✓	
<i>Hirundo neoxena</i>	Welcome Swallow	✓	✓
<i>Malurus cyaneus</i>	Superb Fairywren	✓(D)	
<i>Rhipidura leucophrys</i>	Willie Wagtail	✓	✓
* <i>Acridotheres tristis</i>	Common Myna	✓	✓
* <i>Sturnus vulgaris</i>	Common Starling	✓	✓
* <i>Turdus merula</i>	Common Blackbird	✓	✓
* <i>Spilopelia chinensis</i>	Spotted Dove	✓	
<i>Cacomantis flabelliformis</i>	Fan-tailed Cuckoo	✓	
<i>Cisticola exilis</i>	Golden-headed Cisticola	✓	
<i>Anthochaera chrysoptera</i>	Little Wattlebird	✓	✓
Mammals			
* <i>Oryctolagus cuniculus</i>	European Rabbit	✓	✓
Amphibians			
<i>Crinia signifera</i>	Common Froglet	✓(D)	
<i>Limnodynastes dumerilii</i>	Eastern Banjo Frog	✓(D)	
<i>Limnodynastes peronii</i>	Striped Marsh Frog	✓(D)	
<i>Litoria peronii</i>	Perons' Tree Frog	✓(D)	
<i>Litoria verreauxii</i>	Whistling Tree Frog	✓(D)	

Key:
 (D) – dams
 ✓ – recorded onsite

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Appendix F

Native vegetation removal report (DELWP)

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This report provides information to support an application to remove, destroy or lop native vegetation in accordance with the *Guidelines for the removal, destruction or lopping of native vegetation*. The report **is not an assessment by DELWP** of the proposed native vegetation removal. Native vegetation information and offset requirements have been determined using spatial data provided by the applicant or their consultant.

Date of issue: 08/02/2021

Report ID: EMM_2021_001

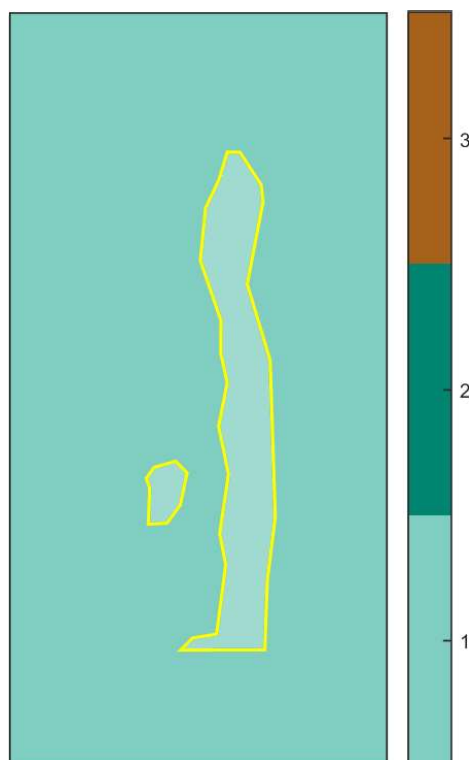
Time of issue: 3:50 pm

Project ID	EnSymVegetation_01pg_EMM_20210128_Sc01
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Assessment pathway

Assessment pathway	Basic Assessment Pathway
Extent including past and proposed	0.279 ha
Extent of past removal	0.000 ha
Extent of proposed removal	0.279 ha
No. Large trees proposed to be removed	0
Location category of proposed removal	Location 1 The native vegetation is not in an area mapped as an endangered Ecological Vegetation Class (as per the statewide EVC map), sensitive wetland or coastal area. Removal of less than 0.5 hectares in this location will not have a significant impact on any habitat for a rare or threatened species

1. Location map



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Offset requirements if a permit is granted

Any approval granted will include a condition to obtain an offset that meets the following requirements:

General offset amount¹	0.062 general habitat units
Vicinity	Port Phillip and Westernport Catchment Management Authority (CMA) or Mornington Peninsula Shire Council
Minimum strategic biodiversity value score ²	0.449
Large trees	0 large trees

NB: values within tables in this document may not add to the totals shown above due to rounding

Appendix 1 includes information about the native vegetation to be removed

Appendix 2 includes information about the rare or threatened species mapped at the site.

Appendix 3 includes maps showing native vegetation to be removed and extracts of relevant species habitat importance maps

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Next steps

Any proposal to remove native vegetation must meet the application requirements of the Basic Assessment Pathway and it will be assessed under the Basic Assessment Pathway.

If you wish to remove the mapped native vegetation you are required to apply for a permit from your local council. Council will refer your application to DELWP for assessment, as required. **This report is not a referral assessment by DELWP.**

This *Native vegetation removal report* must be submitted with your application for a permit to remove, destroy or lop native vegetation.

Refer to the *Guidelines for the removal, destruction or lopping of native vegetation* (the Guidelines) for a full list of application requirements. This report provides information that meets the following application requirements:

- The assessment pathway and reason for the assessment pathway
- A description of the native vegetation to be removed (met unless you wish to include a site assessment)
- Maps showing the native vegetation and property
- The offset requirements determined in accordance with section 5 of the Guidelines that apply if approval is granted to remove native vegetation.

Additional application requirements must be met including:

- Topographical and land information
- Recent dated photographs
- Details of past native vegetation removal
- An avoid and minimise statement
- A copy of any Property Vegetation Plan that applies
- A defensible space statement as applicable
- A statement about the Native Vegetation Precinct Plan as applicable
- An offset statement that explains that an offset has been identified and how it will be secured.

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Authorised by the Victorian Government, 8 Nicholson Street, East Melbourne.

For more information contact the DELWP Customer Service Centre 136 186

www.delwp.vic.gov.au

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This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication.

Obtaining this publication does not guarantee that an application will meet the requirements of Clauses 52.16 or 52.17 of the Victoria Planning Provisions and Victorian planning schemes or that a permit to remove native vegetation will be granted.

Notwithstanding anything else contained in this publication, you must ensure that you comply with all relevant laws, legislation, awards or orders and that you obtain and comply with all permits, approvals and the like that affect, are applicable or are necessary to undertake any action to remove, lop or destroy or otherwise deal with any native vegetation or that apply to matters within the scope of Clauses 52.16 or 52.17 of the Victoria Planning Provisions and Victorian planning schemes.

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Appendix 1: Description of native vegetation to be removed

All zones require a general offset, the general habitat units each zone is calculated by the following equation in accordance with the Guidelines:

$$\text{General habitat units} = \text{extent} \times \text{condition} \times \text{general landscape factor} \times 1.5, \text{ where the general landscape factor} = 0.5 + (\text{strategic biodiversity value score}/2)$$

The general offset amount required is the sum of all general habitat units per zone.

Native vegetation to be removed

Information provided by or on behalf of the applicant in a GIS file							Information calculated by EnSym					
Zone	Type	BioEVC	BioEVC conservation status	Large tree(s)	Partial removal	Condition score	Polygon Extent	Extent without overlap	SBV score	HI score	Habitat units	Offset type
1-HZ006	Patch	gipp0003	Vulnerable	0	no	0.190	0.259	0.259	0.558		0.057	General
1-HZ008	Patch	gipp0003	Vulnerable	0	no	0.180	0.020	0.020	0.599		0.004	General

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Appendix 2: Information about impacts to rare or threatened species' habitats on site

This is not applicable in the Basic Assessment Pathway.

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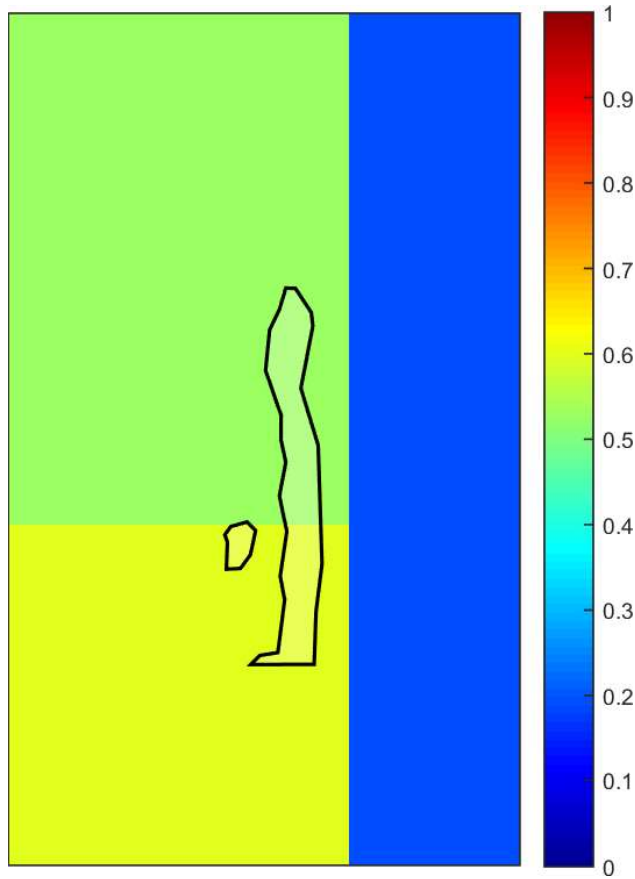
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Appendix 3 – Images of mapped native vegetation

2. Strategic biodiversity values map



3. Aerial photograph showing mapped native vegetation



↑ North 0 1 2
x10 metres

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4. Map of the property in context



Yellow boundaries denote areas of proposed native vegetation removal.

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Appendix G

Report of Available Native Vegetation Credits

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Report of available native vegetation credits

This report lists native vegetation credits available to purchase through the Native Vegetation Credit Register.

This report is **not evidence** that an offset has been secured. An offset is only secured when the units have been purchased and allocated to a permit or other approval and an allocated credit extract is provided by the Native Vegetation Credit Register.

Date and time: 05/02/2021 10:50

Report ID: 7695

What was searched for?

General offset

General habitat units	Strategic biodiversity value	Large trees	Vicinity (Catchment Management Authority or Municipal district)	
0.062	0.449	0	CMA	Port Phillip and Westernport
			or LGA	Mornington Peninsula Shire

Details of available native vegetation credits on 05 February 2021 10:50

These sites meet your requirements for general offsets.

Credit Site ID	GHU	LT	CMA	LGA	Land owner	Trader	Fixed price	Broker(s)
BBA-0277	8.820	466	Port Phillip and Westernport	Mornington Peninsula Shire	No	Yes	No	Abezco, Ethos, VegLink
BBA-0670	18.774	167	Port Phillip and Westernport	Cardinia Shire	No	Yes	No	Abezco, VegLink
BBA-0677	20.754	1529	Port Phillip and Westernport	Whittlesea City	No	Yes	No	Abezco, VegLink
BBA-0678	49.472	2666	Port Phillip and Westernport	Nillumbik Shire	No	Yes	No	Contact NVOR
BBA-0678_2	0.388	59	Port Phillip and Westernport	Nillumbik Shire	No	Yes	No	Contact NVOR
BBA-0931	0.073	0	Port Phillip and Westernport	Moorabool Shire	Yes	Yes	No	Bio Offsets
BBA-2789	1.317	14	Port Phillip and Westernport	Baw Baw Shire	Yes	Yes	No	Contact NVOR
BBA-2790	2.911	116	Port Phillip and Westernport	Baw Baw Shire	Yes	Yes	No	Contact NVOR
BBA-2832	0.781	1	Port Phillip and Westernport	Nillumbik Shire	Yes	Yes	Yes	Nillumbik SC
BBA-2870	2.544	431	Port Phillip and Westernport	Yarra Ranges Shire	Yes	Yes	No	Contact NVOR
BBA-2871	16.335	1668	Port Phillip and Westernport	Yarra Ranges Shire	Yes	Yes	No	Contact NVOR
BBA-3013	0.117	141	Port Phillip and Westernport	Moorabool Shire	Yes	Yes	No	VegLink
BBA-3090	11.854	14	Port Phillip and Westernport	Moorabool Shire	Yes	Yes	No	VegLink

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BBA-3030	0.221	0	Port Phillip and Westernport	Moorabool Shire	Yes	Yes	No	VegLink
BBA-3045	0.133	8	Port Phillip and Westernport	Melton City	Yes	Yes	No	Bio Offsets
TFN-C0287	0.158	0	Port Phillip and Westernport	Cardinia Shire	Yes	Yes	No	TFN
TFN-C1636	1.689	154	Port Phillip and Westernport	Yarra Ranges Shire	Yes	Yes	Yes	Yarra Ranges SC
TFN-C1650	0.975	27	Port Phillip and Westernport	Yarra Ranges Shire	Yes	Yes	Yes	Yarra Ranges SC
TFN-C1663	0.127	28	Port Phillip and Westernport	Yarra Ranges Shire	Yes	Yes	Yes	Yarra Ranges SC
TFN-C1664	3.623	96	Port Phillip and Westernport	Yarra Ranges Shire	Yes	Yes	Yes	Yarra Ranges SC
TFN-C1667	0.320	5	Port Phillip and Westernport	Yarra Ranges Shire	Yes	Yes	Yes	Yarra Ranges SC
TFN-C1750	2.271	8	Port Phillip and Westernport	Cardinia Shire	Yes	Yes	No	Bio Offsets
TFN-C1763_3	11.231	0	Port Phillip and Westernport	Mornington Peninsula Shire	Yes	Yes	No	Ecocentric
TFN-C1962	0.850	19	Goulburn Broken, Port Phillip and Westernport	Macedon Ranges Shire	No	Yes	No	Contact NVOR
VC_CFL-0838_01	1.312	768	Port Phillip And Westernport	Yarra Ranges Shire	Yes	Yes	No	VegLink
VC_CFL-0838_01	0.470	0	Port Phillip And Westernport	Yarra Ranges Shire	Yes	Yes	Yes	Contact NVOR
VC_CFL-0838_01	0.436	4	Port Phillip And Westernport	Yarra Ranges Shire	No	Yes	No	Contact NVOR
VC_CFL-3016_01	0.213	36	Port Phillip And Westernport	Yarra Ranges Shire	Yes	Yes	No	VegLink
VC_CFL-3054_01	2.252	12	Port Phillip and Westernport	Moorabool Shire	Yes	Yes	No	Ethos
VC_CFL-3084_01	0.983	645	Port Phillip And Westernport	Cardinia Shire	Yes	Yes	No	VegLink
VC_CFL-3687_01	1.774	128	Port Phillip And Westernport	Baw Baw Shire	Yes	Yes	No	Baw Baw SC
VC_CFL-3700_01	4.314	3	Port Phillip And Westernport	French-Elizabeth-Sandstone Islands (Uninc)	Yes	Yes	No	Contact NVOR
VC_CFL-3705_01	0.167	19	Port Phillip And Westernport	Melton City	Yes	Yes	No	VegLink
VC_CFL-3708_01	6.515	735	Port Phillip And Westernport	Yarra Ranges Shire	Yes	Yes	No	VegLink
VC_CFL-3709_01	4.588	532	Port Phillip And Westernport	Yarra Ranges Shire	Yes	Yes	No	VegLink

These sites meet your requirements using alternative arrangements for general offsets.

Credit Site ID	GHU	LT	CMA	LGA	Land owner	Trader	Fixed price	Broker(s)
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There are no sites listed in the Native Vegetation Credit Register that meet your offset requirements when applying the alternative arrangements as listed in section 11.2 of the Guidelines for the removal, destruction or lopping of native vegetation.

These potential sites are not yet available, land owners may finalise them once a buyer is confirmed.

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Credit Site ID	GHU	LT	CMA	LGA	Land owner	Trader	Fixed price	Broker(s)
VC_CFL-3729_01	8.422	17	Port Phillip And Westernport	Melton City	Yes	Yes	No	VegLink

LT - Large Trees

CMA - Catchment Management Authority

LGA - Municipal District or Local Government Authority

Next steps

If applying for approval to remove native vegetation

Attach this report to an application to remove native vegetation as evidence that your offset requirement is currently available.

If you have approval to remove native vegetation

Below are the contact details for all brokers. Contact the broker(s) listed for the credit site(s) that meet your offset requirements. These are shown in the above tables. If more than one broker or site is listed, you should get more than one quote before deciding which offset to secure.

Broker contact details

Broker Abbreviation	Broker Name	Phone	Email	Website
Abezco	Abzeco Pty. Ltd.	(03) 9431 5444	offsets@abzeco.com.au	www.abzeco.com.au
Baw Baw SC	Baw Baw Shire Council	(03) 5624 2411	bawbaw@bawbawshire.vic.gov.au	www.bawbawshire.vic.gov.au
Bio Offsets	Biodiversity Offsets Victoria	0452 161 013	info@offsetsvictoria.com.au	www.offsetsvictoria.com.au
Contact NVOR	Native Vegetation Offset Register	136 186	nativevegetation.offsetregister@delwp.vic.gov.au	www.environment.vic.gov.au/native-vegetation
Ecocentric	Ecocentric Environmental Consulting	0410 564 139	ecocentric@me.com	Not available
Ethos	Ethos NRM Pty Ltd	(03) 5153 0037	offsets@ethosnrm.com.au	www.ethosnrm.com.au
Nillumbik SC	Nillumbik Shire Council	(03) 9433 3316	offsets@nillumbik.vic.gov.au	www.nillumbik.vic.gov.au
TFN	Trust for Nature	8631 5888	offsets@tfn.org.au	www.trustfornature.org.au
VegLink	Vegetation Link Pty Ltd	(03) 8578 4250 or 1300 834 546	offsets@vegetationlink.com.au	www.vegetationlink.com.au
Yarra Ranges SC	Yarra Ranges Shire Council	1300 368 333	biodiversityoffsets@yarraranges.vic.gov.au	www.yarraranges.vic.gov.au

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For more information contact the DELWP Customer Service Centre 136 186 or the Native Vegetation Credit Register at nativevegetation.offsetregister@delwp.vic.gov.au

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Obtaining this publication does not guarantee that the credits shown will be available in the Native Vegetation Credit Register either now or at a later time when a purchase of native vegetation credits is planned.

Notwithstanding anything else contained in this publication, you must ensure that you comply with all relevant laws, legislation, awards or orders and that you obtain and comply with all permits, approvals and the like that affect, are applicable or are necessary to undertake any action to remove, lop or destroy or otherwise deal with any native vegetation or that apply to matters within the scope of Clauses 52.16 or 52.17 of the Victoria Planning Provisions and Victorian planning schemes

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