

VEGETATION ASSESSMENT

DEEP CREEK RIPARIAN CORRIDOR, TORQUAY

PREPARED FOR: SUMMERSET GROUP HOLDINGS LIMITED



ÖKOLOGIE CONSULTING



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Document Information


Vegetation assessment of the Deep Creek riparian corridor, Torquay

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Summary

Okologie Consulting Pty Ltd was engaged by Summerset Group Holdings Limited to prepare a prepare a vegetation assessment of the Deep Creek riparian corridor, Torquay.

The vegetation assessment was undertaken to determine the extent of native vegetation and ascertain the presence of any threatened flora or fauna species or associated habitats within the project area. The outcome of the assessment will assist in informing a geomorphological review being undertaken on a section of Deep Creek.

The project area was characterised by a modified cover of Grassy Woodland, interspersed with and exotic dominated grassland. Sections of the project area supports a modified landform and substrate from previous infrastructure works and grassy areas are slashed for maintenance.

One state listed threatened flora species, Bellarine Yellow-gum *Eucalyptus leucoxylon* subsp. *bellarinensis*, was recorded in the project area. No listed threatened fauna species or associated habitats were recorded the field assessment, and none are considered likely to occur due to the absence of suitable habitat.

An *Environment Protection Biodiversity Conservation Act 1999* referral will not be required as no Matters of National Environmental Significance are present or likely to be significantly impacted by future works in the project area.

One *Flora and Fauna Guarantee Act 1988* listed threatened species (Bellarine Yellow-gum) and four listed protected species (Golden Wattle, Prickly Moses, Tree Everlasting and Black Wattle) were recorded in the project area. A permit will be required from the Department of Energy, Environment and Climate Action to remove any individual threatened or protected species from public land.

The proposed removal of any native vegetation will require a permit under Clause 52.17 of the Surf Coast Planning Scheme. A basic, intermediate or detailed assessment pathway application will also be required in accordance with the *Guidelines for the removal, destruction or lopping of native vegetation*, depending on the location and extent of vegetation removal. The removal of native vegetation will also trigger a permit under Significant Landscape Overlay – Schedule 6 and Environmental Significance Overlay – Schedule 4.

It is recommended that the proponent applies the principles of avoid and minimise during the design process to ensure the final detailed design avoids impacts to existing biodiversity values as much as practicable. Efforts to avoid the removal and minimise the impacts on native vegetation should focus on areas of native vegetation/habitat that have the most value.



1 Introduction

1.1 Project Background

Okologie Consulting Pty Ltd was engaged by Summerset Group Holdings Limited to prepare a vegetation assessment of the Deep Creek riparian corridor, Torquay.

The vegetation assessment was undertaken to determine the extent of native vegetation and ascertain the presence of any threatened flora or fauna species or associated habitats within the project area. The outcome of the assessment will assist in informing a geomorphological review being undertaken on a section of Deep Creek (Streamology 2023).

The assessment includes a review of the permit requirements for removal of native vegetation under Clause 52.17 (Native Vegetation) under the Surf Coast Planning Scheme (DTP 2023) and the *Guidelines for the removal, destruction or lopping of native vegetation* (the Guidelines) (DELWP 2017).

This report details the findings of the assessment and discusses environmental legislation and policy implications associated with the proposed development.

1.2 Objectives

The objectives of the assessment were to:

- Assess terrestrial ecological values (extent of native vegetation, threatened flora or fauna species) within the project area.
- Ensure ecological values are identified in the early planning phase.
- Identify environmental legislation and policy requirements.

1.3 Site Description

The project area comprises a section of the Deep Creek riparian corridor, north of Briody Drive, Torquay (Figure 1).

The topography comprises low undulating slopes towards the south. Deep Creek intersects the project area and is an ephemeral waterway. The Deep Creek riparian corridor comprises a modified cover of native vegetation, with cleared areas along adjacent access trails that are slashed for maintenance. The surrounding land use is predominantly residential development.

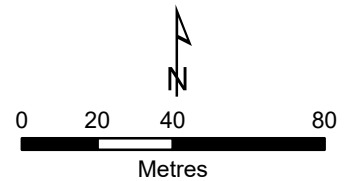
The project area occurs within the Otway Plain bioregion, the Corangamite Catchment Management Authority boundary and the Surf Coast Shire municipality (DEECA 2023a). The Native Vegetation Location mapping shows the project area



occurs within Location 1 and 2 (DEECA 2023b). The project area is zoned Public Park and Recreation Zone (PPRZ) and Low Density Residential Zone (LDRZ). It is subject to Environmental Significance Overlay – Schedule 1 (ESO1) and Environmental Significance Overlay – Schedule 4 (ESO4) under the Surf Coast Planning Scheme (DTP 2023).

Figure 1
Site Location
Deep Creek, Torquay

Legend
[Red outline] Subject Site



Coordinate System: GDA 1994 MGA Zone 55
Map Scale when printed @ A4 1:2,000



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2 Methodology

2.1 Species Information

Scientific and common names of flora species and terrestrial vertebrate fauna follow the Victorian Biodiversity Atlas (VBA) (DEECA 2023c). Vegetation communities follow the Ecological Vegetation Class (EVC) bioregion benchmarks (DEECA 2023a).

Native (terrestrial) flora and fauna species and vegetation communities referred to as 'threatened' include:

- Listed as critically endangered, endangered or vulnerable under the *Environment Protection Biodiversity Conservation Act 1999* (EPBC Act) (DCCEEW 2023).
- Listed as Threatened with a threat category of critically endangered; endangered or vulnerable under the *Flora and Fauna Guarantee Act 1988 – Threatened List* (FFG Act) (DELWP 2022).

2.2 Desktop Assessment

A desktop assessment was undertaken of relevant databases and other resources:

- NatureKit for modelled biodiversity data (DEECA 2023a).
- Native Vegetation Information Management system tool for native vegetation information (DEECA 2023b).
- The VBA for threatened flora and fauna species records (DEECA 2023c).
- Planning Schemes Online for planning information (DTP 2023).
- The Protected Matters Search Tool (PMST) for Matters of National Environmental Significance (MNES) under the EPBC Act (DCCEEW 2023).
- Relevant environmental legislation, policies and strategies.

2.3 Field Assessment

The vegetation assessment was undertaken on 22 November 2023. The project area was traversed on foot to determine the extent of native vegetation and ascertain the presence of any listed threatened flora or fauna species or associated habitats. The extent of native vegetation was mapped using a Trimble Catalyst DA1 differential GPS (sub-metre accuracy post-processing) and recorded to MGA 94, Zone 55 coordinate system. EVCs were determined by reference to the relevant bioregion mapping and benchmarks descriptions, and review of remnant vegetation in the local area.



2.4 Assessment Guidelines

The Guidelines (DELWP 2017) has been incorporated into the Victoria Planning Provisions and all planning schemes in Victoria. The purpose of the Guidelines is to set out and describe the application of Victoria's state-wide policy in relation to assessing and compensating for the removal of native vegetation in response to permit applications under Clause 52.17.

Native vegetation is defined in Clause 72 of the Victoria Planning Provisions as *plants that are indigenous to Victoria, including trees, shrubs, herbs and grasses*. Plants from other states or overseas are not native and the permitted clearing regulations do not apply if they are being removed (DELWP 2017).

The Guidelines considers the biodiversity value of native vegetation by measuring the following two components:

- Site-based information that can be measured or observed at a site.
- Landscape scale information that cannot be measured or observed at the site and is included in maps and models (DELWP 2017).

Under the Guidelines native vegetation is classified as a *patch* or *scattered tree*.

A patch of native vegetation is:

- An area of vegetation where at least 25 per cent of the total perennial understorey plant cover is native¹; or
- Any area with three or more native canopy trees² where the drip line³ of each tree touches the drip line of at least one other tree, forming a continuous canopy; or
- Any mapped wetland included in the Current wetlands map.

A scattered tree is:

- A native canopy tree that does not form part of a patch:
- Scattered trees have two sizes, small and large:
 - a small-scattered tree is less than the large tree species EVC benchmark.
 - a large tree is equal to or greater than the large tree species EVC benchmark.

¹ Plant cover is the proportion of the ground that is shaded by vegetation foliage when lit from directly above. Areas that include non-vascular vegetation (such as mosses and lichens) but otherwise support no native vascular vegetation are not considered to be a patch for the purposes of the Guidelines. However, when non-vascular vegetation is present with vascular vegetation, it does contribute to cover when determining the percentage of perennial understorey plant cover. The 25% perennial understorey cover is the relative cover of native species vs exotic species.

² A native canopy tree is a mature tree (i.e. it is able to flower) that is greater than 3 metres in height and is normally found in the upper layer of the relevant vegetation type.

³ The drip line is the outermost boundary of a tree canopy (leaves and/or branches) where the water drips on to the ground (DELWP 2017).



The assessment pathway for an application to remove native vegetation reflects its potential impact on biodiversity and is determined from the location and extent of the native vegetation to be removed.

The three assessment pathways are:

- Basic – limited impacts on biodiversity.
- Intermediate – could impact on large trees, endangered EVCs, and sensitive wetlands and coastal areas.
- Detailed – could impact on large trees, endangered EVCs, sensitive wetlands and coastal areas, and could significantly impact on habitat for rare or threatened species.

The assessment pathway of an application is determined in accordance with the requirements in Table 1.

Table 1: Assessment pathways

| Extent of native vegetation | Location Category | | |
|--------------------------------------------------------------|-------------------|--------------|------------|
| | Location 1 | Location 2 | Location 3 |
| Less than 0.5 hectares and not including any large trees | Basic | Intermediate | Detailed |
| Less than 0.5 hectares and including one or more large trees | Intermediate | Intermediate | Detailed |
| 0.5 hectares or more | Detailed | Detailed | Detailed |

Source: DELWP (2017).

2.5 Limitations

The preferred survey period for undertaking vegetation assessments in Victoria is spring, which maximises the likelihood of detecting all flora species within a site. Flora surveys provide a valuable ‘snapshot’ of vegetation at a point in time; however, the limitations of seasonal influence on the presence/absence of flora species (particularly annuals or cryptic species) must be considered. The short duration of the assessment limited the opportunity to observe migratory, transitory or uncommon fauna species. The assessment did not include an aquatic fauna survey of Deep Creek.

The information outlined in this report relies on the accuracy of ecological database information, GIS layers and spatial imagery. To minimise potential errors, the most current available data was obtained from relevant sources.

The Department of Energy, Environment and Climate Action (DEECA) bioregion and EVC mapping are subject to inherently broad environmental and ecological parameters used in the mapping process. Where the observed EVC was not reflective of what would be expected from EVC mapping and classification, it was attributed to the most appropriate EVC based on combination of its floristic, life form and ecological characteristics, and particular environmental conditions.



3 Results

3.1 Ecological Vegetation Classes

NatureKit modelling identifies the pre-1750 EVC mapping for the project area predominantly comprised of Grassy Woodland (EVC 175) and Heathy Woodland (EVC 48). Extant (2005) EVC mapping shows a modified cover of Grassy Woodland and Heathy Woodland. No Current Wetlands are mapped in the project area (DEECA 2023a). Remnant native vegetation was attributed to Grassy Woodland based on floristic, life form, ecological characteristics and soil type (Figure 2).

3.2 Vegetation Condition

The project area was characterised by a modified cover of Grassy Woodland interspersed with and exotic dominated grassland. Sections of the project area supports a modified landform and substrate from previous infrastructure works and grassy areas are slashed for maintenance. A description of vegetation within the project area is outlined below.

Grassy Woodland

Grassy Woodland is described as *a variable open eucalypt woodland to 15 metres tall or occasionally Sheoak woodland to 10 metres tall over a diverse ground layer of grasses and herbs. The shrub component is usually sparse. It occurs on gentle slopes or undulating hills on a range of geologies* (DEECA 2023a).

Grassy Woodland comprised a canopy of Messmate Stringybark *Eucalyptus obliqua*, Manna Gum *Eucalyptus viminalis*, Bellarine Yellow-gum *Eucalyptus leucoxydon* subsp. *bellarinensis* and Swamp Gum *Eucalyptus ovata* to 15 metres tall. The shrub layer consisted of Black Wattle *Acacia mearnsii*, Golden Wattle *Acacia pycnantha*, Prickly Moses *Acacia verticillata*, Hedge Wattle *Acacia paradoxa*, Burgan *Kunzea ericoides* and Tree Everlasting *Ozothamnus ferrugineus*, Coast Pomaderris *Pomaderris paniculosa* subsp. *paralia*, with non-native Sallow Wattle *Acacia longifolia* and Coastal Wattle *Acacia sophorea* and Sweet Pittosporum *Pittosporum undulatum*, with exotic Small-leaved Cotoneaster *Cotoneaster microphyllus*, Boneseed *Chrysanthemoides monilifera* subsp. *monilifera*, and Italian Buckthorn *Rhamnus alaternus*.

The ground layer consisted of Thatch Saw-sedge *Gahnia radula*, Variable Sword-sedge *Lepidosperma laterale*, Common Rapier-sedge *Lepidosperma filiforme*, Supple Spear-grass *Austrostipa mollis*, Common Wallaby-grass *Rytidosperma caespitosum*, Grey Tussock-grass *Poa sieberiana*, Kangaroo Grass *Themeda triandra*, Weeping Grass *Microlaena stipoides*, Bristly Wallaby-grass *Rytidosperma setaceum*, Wattle Mat-rush *Lomandra filiformis*, Black-anther Flax-lily *Dianella admixta*, Common Raspwort *Gonocarpus tetragynus*, Common Apple-berry *Billardiera scandens*, Yellow Rush-lily *Tricoryne elatior* and Austral Bracken *Pteridium esculentum*, interspersed with exotic



Bluebell Creeper *Billardiera heterophylla*, Panic Veldt-grass *Ehrharta erecta*, Large Quaking-grass *Briza major*, Sweet Vernal-grass *Anthoxanthum odoratum*, Yorkshire Fog-grass *Holcus lanatus*, Perennial Veldt-grass *Ehrharta calycina*, Flat Weed *Hypochoeris radicata* and Ribwort *Plantago lanceolata* (Plates 1 to 8).

Predominantly Introduced Vegetation

Exotic dominated vegetation (mapped as predominantly introduced vegetation) in cleared (slashed) areas consisted of Kikuyu *Cenchrus clandestinus*, Couch Grass *Cynodon dactylon*, Small Quaking-grass *Briza minor*, Onion Grass *Romulea rosea*, Perennial Ryegrass *Lolium perenne*, Rat-tail Grass *Sporobolus africanus*, Toowoomba Canary-grass *Phalaris aquatica*, Paspalum *Paspalum dilatatum*, Rat's-tail Fescue *Vulpia myuros*, Cocksfoot, Yorkshire Fog-grass, Panic Veldt-grass, Large Quaking-grass, Perennial Veldt-grass, Strawberry Clover *Trifolium fragiferum*, Hare's-foot Clover *Trifolium arvense*, Cape Weed *Arctotheca calendula*, Ribwort and Flat Weed. Native vegetation was limited to a scattered cover (~5% overall perennial cover) of Thatch Saw-sedge, Common Wallaby-grass and Bristly Wallaby-grass (Plates 9 to 12).

3.3 Threatened Flora Species

The VBA (DEECA 2023c) contains records of nine listed threatened flora species in local area (within a five-kilometre radius of the project area). The PMST (DCCEEW 2023) identified 17 EPBC Act listed flora species or species habitats as likely to occur within the local area (Appendix 3).

One listed threatened flora species, Bellarine Yellow-gum, was recorded within the project area (11 individual trees – Figure 2). Bellarine Yellow-gum has a threat category of critically endangered in Victoria (DELWP 2023). The VBA (DEECA 2023c) contains 275 records of Bellarine Yellow-gum in the local area, with several trees previously recorded in the immediate surrounds. There is a low likelihood of occurrence for any additional listed threatened flora due to the absence of or modified condition of habitat.

3.4 Threatened Fauna Species

The VBA (DEECA 2023c) contains records of 34 listed threatened fauna species in the local area. The PMST (DCCEEW 2023) identified 59 EPBC Act listed fauna species or species habitats (terrestrial) as likely to occur within the local area (Appendix 4).

No listed threatened fauna species were recorded during the field assessment. There is a low likelihood of occurrence for any listed threatened fauna species due to the absence of suitable habitat.

3.5 Threatened Ecological Communities



Review of the PMST (DCCEEW 2023) identified six EPBC Act listed ecological communities may or are known to occur within the local area:

- *Grassy Eucalypt Woodland of the Victorian Volcanic Plain* (Critically Endangered).
- *Natural Temperate Grassland of the Victorian Volcanic Plain* (Critically Endangered).
- *Natural Damp Grassland of the Victorian Coastal Plains* (Critically Endangered).
- *White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland* (Critically Endangered).
- Assemblages of species associated with open-coast salt-wedge estuaries of western and central Victoria ecological community (Endangered).
- *Giant Kelp Marine Forests of South East Australia* (Endangered).

Native vegetation within the project area does not meet the criteria or condition thresholds for any EPBC Act listed ecological communities.

3.6 Summary of Biodiversity Values

The project area supports the following biodiversity values:

- The project area supports a modified cover of Grassy Woodland and scattered native trees, and one listed threatened flora species (Bellarine Yellow-gum).
- Grassy Woodland has a conservation status of Endangered in the Otway Plain bioregion.
- Bellarine Yellow-gum (11 trees) has a threat category of critically endangered in Victoria.
- Large trees in the project area are of high landscape value.
- Native vegetation condition modelling indicates the project area supports areas of moderate to high value vegetation with condition scores of between 0.41-0.60 and 0.61-0.80.
- Strategic biodiversity value modelling indicates the project area supports very high value vegetation/habitat with a score of 0.81-1.00 (DEECA 2023a).

The criteria (DELWP 2018) for determining native vegetation indicates Grassy Woodland within the project area, meets the criteria for moderate to very high value vegetation/habitat due to the strategic biodiversity value, habitat for rare or threatened species, strategic biodiversity value, EVC conservation status and landscape value (Appendix 2).



Plate 1: Grassy Woodland - northern section of the project area



Plate 2: Grassy Woodland on the Deep Creek riparian corridor



Plate 3: Grassy Woodland on the Deep Creek riparian corridor



Plate 4: Grassy Woodland on the Deep Creek riparian corridor



Plate 5: Grassy Woodland - northern section of the project area



Plate 6: Grassy Woodland - northern section of the project area



Plate 7: Bellarine Yellow-gum in Grassy Woodland



Plate 8: Bellarine Yellow-gum in Grassy Woodland



Plate 9: Exotic dominated vegetation in cleared area



Plate 10: Exotic dominated vegetation in cleared area



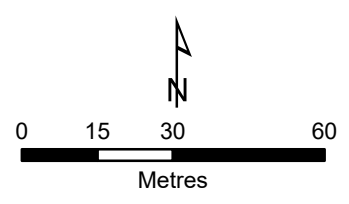
Plate 11: Exotic dominated vegetation in cleared area



Plate 12: Exotic dominated vegetation in cleared area

Figure 2
Ecological Features
Deep Creek, Torquay

- Legend**
- Subject Site
 - Grassy Woodland
 - Predominantly Introduced Vegetation
 - Bellarine Yellow Gum
 - Scattered Tree



Coordinate System: GDA 1994 MGA Zone 55
Map Scale when printed @ A4 1:1,500



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4 Environmental Legislation and Policy Implications

4.1 Environment Protection and Biodiversity Conservation Act 1999

The EPBC Act provides a process for assessment of proposed actions that may have a significant impact on a MNES, which includes EPBC Act listed flora, fauna and ecological communities (DoE 2013).

The EPBC Act affects any group or individual (including companies) whose actions (i.e. proposal or project) are assessed for environmental impacts under the EPBC Act. An action requires approval from the Commonwealth Environment Minister if it is considered likely to have a significant impact on a MNES (DoE 2013).

No EPBC Act listed threatened ecological communities or flora, or fauna species were recorded within the project area, and none are considered likely to occur due to the absence of suitable habitat. An EPBC Act referral to the Commonwealth Environment Minister will not be required as no MNES are present or likely to be significantly impacted by future works in the project area.

4.2 Flora and Fauna Guarantee Act 1988

The FFG Act is the key Victorian legislation for the conservation of threatened species and communities and for the management of potentially threatening processes.

A permit is required from DEECA to 'take' (kill, injure, disturb or collect) listed flora species, flora species that are members of listed threatened communities or protected flora from public land. Protected flora species includes all members of the following plant families Asteraceae (Daisies), Epacridaceae (Heaths) and Orchidaceae (Orchids), all clubmosses, ferns and fern allies (excluding *Pteridium esculentum*). All species of the following genera are also protected: *Acacia* (excluding *Acacia dealbata*, *Acacia decurrens*, *Acacia implexa*, *Acacia melanoxylon* and *Acacia paradoxa*), *Baeckea*, *Calytrix*, *Correa*, *Darwinia*, *Eremophila*, *Eriostemon*, *Gompholobium*, *Grevillea*, *Prostanthera*, *Sphagnum*, *Thryptomene*, *Thysanotus* and *Xanthorrhoea* (DELWP 2022).

One FFG Act listed threatened flora species (Bellarine Yellow-gum) and four listed protected flora species (Golden Wattle, Prickly Moses, Tree Everlasting and Black Wattle) occurs within the project area.

An FFG Act permit will be required from DEECA to remove any individual Bellarine Yellow-gum trees, or Golden Wattle, Prickly Moses, Tree Everlasting and Black Wattle shrubs as Deep Creek occurs on public land.



4.3 Planning and Environment Act 1987

The purpose of the *Planning and Environment Act 1987* is to establish a framework for planning the use, development and protection of land in Victoria. Native vegetation clearance is managed under the Act and through municipal planning schemes (DTP 2023).

A permit is required under Clause 52.17 (Native Vegetation) to remove, destroy or lop native vegetation, including dead vegetation, unless the action is exempt. To ensure that there is no net loss to biodiversity as a result of the removal, destruction or lopping of native vegetation, the following three step approach is applied in accordance with the Guidelines:

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

If native vegetation removal is required, a permit application must be categorised as a basic, intermediate or detailed assessment pathway as specified in the Guidelines (DELWP 2017). Each assessment pathway has specific application requirements and decision guidelines that must be considered by the responsible authority.

Clause 66 (Referral and Notice Provisions) requires that the following applications to remove native vegetation be referred to the Secretary to DEECA:

- To remove, destroy or lop native vegetation in the Detailed Assessment Pathway
- To remove, destroy or lop native vegetation if a Property Vegetation Plan applies to the site.
- To remove, destroy or lop native vegetation on Crown land, which is occupied or managed by the responsible authority (DTP 2023).

Clause 52.17 – Native Vegetation

The project area was characterised by a modified cover of Grassy Woodland interspersed with exotic dominated grassland in cleared areas. Native vegetation in the project area meets the criteria for moderate to very high value vegetation/habitat due to the strategic biodiversity value, habitat for rare or threatened species, strategic biodiversity value, EVC conservation status and landscape value (Appendix 2).

The proposed removal of any native vegetation within the project area will require a permit under Clause 52.17 (Native Vegetation) of the Surf Coast Planning Scheme (DTP 2023). A basic, intermediate or detailed assessment pathway application will also be required in accordance with the Guidelines (DELWP 2017), depending on the extent and location of native vegetation removal (if required).



The vegetation assessment was undertaken to inform the stormwater management strategy (Streamology 2023). It is recommended that the proponent applies the principles of avoid and minimise during the design process to ensure the final project design avoids impacts to existing biodiversity values as much as practicable. Efforts to avoid the removal and minimise the impacts on native vegetation should focus on areas of native vegetation/habitat that have the most value.

If the final project design requires a detailed pathway application for removal of >0.5 hectares of native vegetation, the application will be referred to the Secretary to DEECA for assessment under Clause 66 (Referral and Notice Provisions). The required offset will need to be sourced as an allocated credit extract through the Native Vegetation Credit Register.

Environmental Significance Overlay – Schedule 1

The project area is partially subject to ESO1 (Aquatic Systems - Significant Wetlands and Waterways) under the Surf Coast Planning Scheme (DTP 2023). The provision to ESO1 specifies that *a permit is not required to remove, destroy or lop any vegetation that:*

- *Is within 3 metres of a building used for accommodation (or overhangs this area).*
- *Is listed as an environmental weed in the Incorporated document, Weeds of the Surf Coast Shire (2013).*
- *Is not native to Victoria.*
- *Has been planted or is being managed for the purposes of agroforestry.*
- *Is dead, other than a standing dead tree with a trunk diameter of 40 centimetres or more at a height of 1.3 metres above ground level.*
- *Is the minimum amount necessary to;*
 - *Maintain a minor utility installation.*
 - *Maintain a utility installation in accordance with a code(s) of practice approved by the Secretary of the Department of Environment, Land, Water and Planning.*

It is recommended the proponent review the requirement for a permit under ESO1 following completion of the final alignment design.

Environmental Significance Overlay – Schedule 4

The project area is subject to ESO4 (Habitat Protection and Significant Remnant Vegetation Within the Coastal Settlements of Lorne, Moggs Creek, Fairhaven, Aireys Inlet, Anglesea, Torquay and Jan Juc) under the Surf Coast Planning Scheme (DTP 2023).

The provision to ESO4 specifies that *a permit is not required to remove, destroy or lop any vegetation that is:*

- *Within 3 metres of a building used for accommodation (or overhangs this area).*



- Listed as an environmental weed in the incorporated document, Weeds of the Surf Coast Shire (2013).
- Not native to Victoria.
- Dead.
- The minimum amount necessary to:
 - maintain a minor utility installation.
 - maintain a utility installation in accordance with a code(s) of practice approved by the Secretary of the Department of Environment, Land, Water and Planning.
- within the designated 'habitation envelope' area, shown in map 2 to this schedule, or is the minimum extent necessary for:
 - the construction of a vehicle access from the street to the 'habitation envelope' or
 - the construction and maintenance of reticulated services.

It is recommended the proponent review the requirement for a permit under ESO4 following completion of the final alignment design.



5 Conclusion

The project area was characterised by a modified cover of Grassy Woodland, interspersed with exotic dominated grassland. One listed threatened flora species (Bellarine Yellow-gum) was recorded in the project area. No listed threatened fauna species or associated habitats were recorded the field assessment, and none are considered likely to occur due to the absence of suitable habitat.

An EPBC Act referral will not be required, as no MNES are present, or likely to be significantly impacted by future works within the project area. One FFG Act listed threatened species (Bellarine Yellow-gum) and four listed protected flora species (Golden Wattle, Prickly Moses, Tree Everlasting and Black Wattle) occur within the project area. A permit will be required from DEECA to remove any threatened or protected flora species from public land.

The proposed removal of any native vegetation will require a permit under Clause 52.17 of the Surf Coast Planning Scheme. A basic, intermediate or detailed assessment pathway application will also be required in accordance with the Guidelines, depending on the extent and location of vegetation removal.

It is recommended that the proponent review the provisions to ESO1 and ESO4 to determine the requirement for a permit based on the final alignment design.

It is recommended that the principles of avoid and minimise are applied during the design process to ensure the final project design avoids adverse impacts on existing biodiversity values as much as practicable. Efforts to avoid the removal and minimise the impacts on native vegetation should focus on areas of native vegetation that have the most value.



6 References

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Appendices

Appendix 1 – Likelihood of Occurrence

One or more of the following criteria was used to establish the likelihood of occurrence for threatened flora and fauna species within the project area. The likelihood of occurrence indicates the potential for a species to occur within the project area. This assessment includes review of habitat presence or suitability, species records within the local area, and the level of site disturbance or presence of threatening processes that may preclude the occurrence of a species.

Present: Recorded during the field survey.

High likelihood:

- Previously recorded within the site.
- Likely to visit the site during seasonal movements.
- Frequently recorded within the local area.
- Known or likely to maintain resident populations in the local area.
- Presence of preferred habitat within the site.

Moderate likelihood:

- May regularly move through or visit the site as a seasonal visitor.
- Previous records within the local area.
- Some characteristics of a species preferred habitat is present although in a modified condition.
- Unlikely to maintain a population within the site.

Low Likelihood:

- Species likely to occur as a rare or opportunistic visitor.
- Few previous records within the local area.
- Habitat within the site is highly modified and does not represent the species preferred habitat.

Unlikely:

- No suitable habitat present on the site or in the surrounding area.
- No species records in the local area.
- Beyond the species natural distribution or considered locally extinct.

The outcome of the assessment of likelihood of occurrence for threatened flora is Appendix 4 and Appendix 5 for threatened fauna.



Appendix 2 – Native Vegetation Value Criteria

Table 2. Values of Native Vegetation

| Value | Lower value | Higher value |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Extent | | |
| The amount of native vegetation to be removed and the context it is being removed from | <ul style="list-style-type: none"> • Small extent (less than 0.5 hectares) with no long- term viability (it may be isolated or degraded by surrounding land uses). | <ul style="list-style-type: none"> • Larger extent (more than 1 hectare). |
| | <ul style="list-style-type: none"> • Removal does not impact on viability of remaining vegetation (it does not result in fragmentation). | <ul style="list-style-type: none"> • Smaller extent (less than 1 hectare) but with good viability in an otherwise cleared landscape. |
| | <ul style="list-style-type: none"> • Removal does not include large trees. | <ul style="list-style-type: none"> • Smaller extent but from within a larger patch and the removal leads to fragmentation of the patch. |
| | | <ul style="list-style-type: none"> • Removal includes large trees. |
| Condition | | |
| The condition score of the vegetation to be removed. Scores range from 0.2 to 1. | Condition scores are in the low range when they are less than 0.3. | Condition scores are in the high range, when they are above 0.6, noting 1 means pristine, pre-settlement condition. |
| | Lower scores indicate the vegetation has experienced a fair amount of disturbance and as a result is in poor condition. Poorer conditions generally support a lower diversity of plants and animals. | Higher scores indicate that the vegetation has not experienced significant disturbance and is in fairly good condition. Good condition vegetation usually supports a higher diversity of plants and animals. |
| Strategic biodiversity value (SBV) | | |
| The SBV score of the vegetation to be removed. Scores range from 0.1 to 1 | SBV scores are in the low range when they are less than 0.3. | SBV scores are in the high range, when that are above 0.8. |
| | Lower scores indicate locations where either only a few values are found together, or areas where there are many other locations with the same values (and the other locations have better condition and connectivity). | A higher score indicates a location where many values, that are not widespread or common, are found together. |
| Habitat for rare or threatened species | | |
| This includes those listed as critically endangered, endangered, vulnerable | Few species' habitats are impacted. | Numerous species' habitats are impacted. With few to many species' offsets. |



| Value | Lower value | Higher value |
|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| or rare | <ul style="list-style-type: none"> • Low proportional impact (less than 0.005%). | <ul style="list-style-type: none"> • Proportional impact is relatively higher than the species threshold (proportional impact represents the percentage of the habitat affected). |
| | <ul style="list-style-type: none"> • No or few species offsets. | <ul style="list-style-type: none"> • Species have higher conservation status (endangered or critically endangered). |
| | <ul style="list-style-type: none"> • Species have lower conservation status (rare or vulnerable). | <ul style="list-style-type: none"> • The species' habitats are highly localised or an important area of habitat within a dispersed species or selected VBA records |
| | <ul style="list-style-type: none"> • The species' habitats are dispersed and not an important area of habitat within a dispersed species. | |
| Ecological Vegetation Class (EVC) | | |
| The Bioregional Conservation Status | it is not an endangered EVC. | it is an endangered EVC (location category 2) in the Location map. |
| | <ul style="list-style-type: none"> • the EVC is well represented in existing protected areas | <ul style="list-style-type: none"> • the EVC is not well represented in existing protected areas. |
| Landscape values | | |
| | The native vegetation or land where the native vegetation is to be removed does not have to be managed to preserve identified landscape values. | The native vegetation or land where the native vegetation is to be removed has to be managed to preserve identified landscape values. |

Source: DELWP 2018



Appendix 3 – Flora Species Recorded

Table 3: Flora species recorded during the field assessment

| Scientific Name | Common Name |
|-------------------------------------------------------------|---------------------------|
| <i>Acacia longifolia</i> | Sallow Wattle* |
| <i>Acacia mearnsii</i> | Black Wattle |
| <i>Acacia paradoxa</i> | Hedge Wattle |
| <i>Acacia pycnantha</i> | Golden Wattle |
| <i>Acacia saligna</i> | Golden Wreath Wattle* |
| <i>Acacia sophorea</i> | Coastal Wattle* |
| <i>Acacia verticillata</i> | Prickly Moses |
| <i>Acaena novae-zelandiae</i> | Bidgee-widgee |
| <i>Acrotriche serrulata</i> | Honey-pots |
| <i>Agrostis capillaris</i> | Brown-top Bent* |
| <i>Aira caryophyllea</i> subsp. <i>caryophyllea</i> | Silvery Hair-grass* |
| <i>Anthoxanthum odoratum</i> | Sweet Vernal-grass* |
| <i>Arctotheca calendula</i> | Cape Weed* |
| <i>Austrostipa mollis</i> | Supple Spear-grass |
| <i>Avena barbata</i> | Bearded Oat* |
| <i>Billardiera heterophylla</i> | Bluebell Creeper* |
| <i>Billardiera scandens</i> | Common Apple-berry |
| <i>Briza maxima</i> | Large Quaking-grass* |
| <i>Cenchrus clandestinus</i> | Kikuyu* |
| <i>Centaurium erythraea</i> | Common Centaury* |
| <i>Chrysanthemoides monilifera</i> subsp. <i>monilifera</i> | African Boneseed** |
| <i>Cynodon dactylon</i> var. <i>dactylon</i> | Couch* |
| <i>Dactylis glomerata</i> | Cocksfoot* |
| <i>Dianella admixta</i> | Black-anther Flax-lily |
| <i>Ehrharta erecta</i> | Panic Veldt-grass* |
| <i>Eucalyptus leucoxylon</i> subsp. <i>bellarinensis</i> | Bellarine Yellow-gum (cr) |
| <i>Eucalyptus obliqua</i> | Messmate Stringybark |
| <i>Eucalyptus ovata</i> | Swamp Gum |
| <i>Eucalyptus viminalis</i> | Manna Gum |
| <i>Gahnia radula</i> | Thatch Saw-sedge |
| <i>Gonocarpus tetragynus</i> | Common Raspwort |
| <i>Helminthotheca echioides</i> | Ox-tongue* |
| <i>Holcus lanatus</i> | Yorkshire Fog* |
| <i>Hypochaeris radicata</i> | Flatweed* |
| <i>Juncus subsecundus</i> | Finger Rush |
| <i>Lepidosperma laterale</i> | Variable Sword-sedge |



| Scientific Name | Common Name |
|----------------------------------------------------|-------------------------|
| <i>Lepidosperma semiteres</i> | Wire Rapier-sedge |
| <i>Lolium perenne</i> | Perennial Rye-grass* |
| <i>Lomandra filiformis</i> | Wattle Mat-rush |
| <i>Lysimachia arvensis</i> | Pimpernel* |
| <i>Medicago polymorpha</i> | Burr Medic* |
| <i>Microlaena stipoides</i> var. <i>stipoides</i> | Weeping Grass |
| <i>Nassella trichotoma</i> | Serrated Tussock** |
| <i>Oxalis perennans</i> | Grassland Wood-sorrel |
| <i>Paspalum dilatatum</i> | Paspalum* |
| <i>Phalaris aquatica</i> | Toowoomba Canary-grass* |
| <i>Pittosporum undulatum</i> | Sweet Pittosporum* |
| <i>Plantago coronopus</i> | Buck's-horn Plantain* |
| <i>Plantago lanceolata</i> | Ribwort* |
| <i>Poa sieberiana</i> | Grey Tussock-grass |
| <i>Pteridium esculentum</i> | Austral Bracken |
| <i>Romulea rosea</i> | Onion Grass |
| <i>Rytidosperma caespitosum</i> | Common 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>Trifolium arvense</i> var. <i>arvense</i> | Hare's-foot Clover* |
| <i>Trifolium fragiferum</i> var. <i>fragiferum</i> | Strawberry Clover* |
| <i>Trifolium repens</i> var. <i>repens</i> | White Clover* |
| <i>Vulpia myuros</i> | Rat's-tail Fescue* |

Notes: *Exotic species; **Listed noxious weed; cr = Critically Endangered



Appendix 4 – Threatened Flora Records

Table 4. Threatened flora records

| Scientific Name | Common Name | Status | Count of Sightings | Last Record | Likely Occurrence | Comments |
|---------------------------------------------------|----------------------|--------|--------------------|-------------|-------------------|---------------------------------------------|
| <i>Diuris palustris</i> | Swamp Diuris | en | 3 | 30/6/2011 | U | Absence of suitable habitat |
| <i>Poa billardierei</i> | Coast Fescue | en | 1 | 1/10/1905 | U | Absence of suitable habitat |
| <i>Juncus revolutus</i> | Creeping Rush | en | 2 | 15/2/2000 | U | Absence of suitable habitat |
| <i>Thomasia petalocalyx</i> | Paper Flower | en | 1 | 10/3/2014 | U | Absence of suitable habitat |
| <i>Roepera billardierei</i> | Coast Twin-leaf | en | 1 | 7/7/2006 | U | Absence of suitable habitat |
| <i>Thelymitra pallidiflora</i> | Pallid Sun-orchid | cr | 2 | 21/10/2001 | U | Absence of suitable habitat |
| <i>Acacia uncifolia</i> | Coast Wirilda | en | 12 | 25/4/2017 | L | Potential suitable habitat but not recorded |
| <i>Xanthosia leiophylla</i> | Parsley Xanthosia | en | 1 | 10/2/2017 | U | Absence of suitable habitat |
| <i>Eucalyptus leucoxydon subsp. bellarinensis</i> | Bellarine Yellow-gum | cr | 275 | 17/2/2021 | P | 11 individual trees recorded |

Notes: Threatened species records were sourced from the VBA (DEECA 2023c), within a 5 km radius of the project area. Likelihood of occurrence: H = High likelihood; M = Moderate likelihood; L = Low likelihood; U = Unlikely to occur (Appendix 1).

EPBC Act listed species (DCCEEW 2023)

Cr Critically Endangered
En Endangered
V Vulnerable

FFG Act listed species (DELWP 2022)

L Listed as Threatened
cr Critically endangered
e Endangered
v Vulnerable



Appendix 5 – Threatened Fauna Records

Table 5. Threatened fauna records

| Scientific Name | Common Name | Status | Count of Sightings | Last Record | Likely Occurrence | Comments |
|----------------------------------|---------------------------|--------|--------------------|-------------|-------------------|-----------------------------|
| <i>Ornithorhynchus anatinus</i> | Platypus | vu | 1 | 5/9/2021 | U | Absence of suitable habitat |
| <i>Pedionomus torquatus</i> | Plains-wanderer | CR cr | 1 | 2/2/1971 | U | Absence of suitable habitat |
| <i>Lewinia pectoralis</i> | Lewin's Rail | vu | 2 | 3/7/2001 | U | Absence of suitable habitat |
| <i>Pelagodroma marina</i> | White-faced Storm-Petrel | en | 5 | 16/3/2019 | U | Absence of suitable habitat |
| <i>Thalassarche cauta</i> | Shy Albatross | EN en | 18 | 11/7/2019 | U | Absence of suitable habitat |
| <i>Hydroprogne caspia</i> | Caspian Tern | vu | 7 | 1/9/2019 | U | Absence of suitable habitat |
| <i>Pluvialis squatarola</i> | Grey Plover | vu | 1 | 17/10/2006 | U | Absence of suitable habitat |
| <i>Thinornis cucullatus</i> | Hooded Plover | VU vu | 109 | 23/4/2020 | U | Absence of suitable habitat |
| <i>Numenius madagascariensis</i> | Eastern Curlew | CR cr | 1 | 9/2/1964 | U | Absence of suitable habitat |
| <i>Limosa lapponica</i> | Bar-tailed Godwit | VU vu | 1 | 7/11/2008 | U | Absence of suitable habitat |
| <i>Tringa nebularia</i> | Common Greenshank | en | 4 | 9/6/2018 | U | Absence of suitable habitat |
| <i>Egretta garzetta</i> | Little Egret | en | 3 | 1/2/2015 | U | Absence of suitable habitat |
| <i>Ardea alba modesta</i> | Eastern Great Egret | vu | 1 | 10/2/2015 | U | Absence of suitable habitat |
| <i>Ixobrychus dubius</i> | Australian Little Bittern | en | 2 | 7/11/2008 | U | Absence of suitable habitat |
| <i>Spatula rhynchotis</i> | Australasian Shoveler | vu | 9 | 26/5/2020 | U | Absence of suitable habitat |
| <i>Stictonetta naevosa</i> | Freckled Duck | en | 32 | 3/7/2020 | U | Absence of suitable habitat |
| <i>Aythya australis</i> | Hardhead | vu | 57 | 31/12/2020 | U | Absence of suitable habitat |
| <i>Oxyura australis</i> | Blue-billed Duck | vu | 1 | 18/10/2002 | U | Absence of suitable habitat |
| <i>Biziura lobata</i> | Musk Duck | vu | 5 | 1/8/2013 | U | Absence of suitable habitat |
| <i>Accipiter novaehollandiae</i> | Grey Goshawk | en | 22 | 4/2/2021 | L | May flyover occasionally |
| <i>Hieraaetus morphnoides</i> | Little Eagle | vu | 20 | 2/3/2021 | U | Absence of suitable habitat |
| <i>Haliaeetus leucogaster</i> | White-bellied Sea-Eagle | en | 2 | 5/3/2020 | U | Absence of suitable habitat |



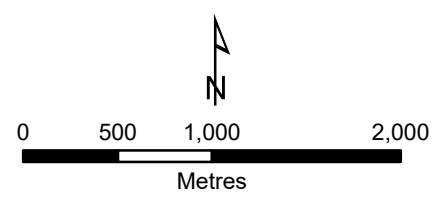
| Scientific Name | Common Name | Status | Count of Sightings | Last Record | Likely Occurrence | Comments |
|-----------------------------------------|----------------------------|--------|--------------------|-------------|-------------------|-----------------------------|
| <i>Ninox strenua</i> | Powerful Owl | vu | 1 | 24/4/2013 | U | Absence of suitable habitat |
| <i>Collocephalon fimbriatum</i> | Gang-gang Cockatoo | EN en | 143 | 18/6/2021 | U | Absence of suitable habitat |
| <i>Neophema chrysogaster</i> | Orange-bellied Parrot | CR cr | 1 | 21/7/2012 | U | Absence of suitable habitat |
| <i>Lathamus discolor</i> | Swift Parrot | CR cr | 2 | 26/4/2019 | U | Absence of suitable habitat |
| <i>Hirundapus caudacutus</i> | White-throated Needletail | VU vu | 45 | 2/3/2021 | L | May flyover occasionally |
| <i>Melanodryas cucullata</i> | Hooded Robin | EN vu | 1 | 1/1/1965 | U | Absence of suitable habitat |
| <i>Calamanthus pyrrhopygius</i> | Chestnut-rumped Heathwren | vu | 1 | 6/12/2015 | U | Absence of suitable habitat |
| <i>Macronectes halli</i> | Northern Giant-Petrel | VU en | 1 | 29/1/2016 | U | Absence of suitable habitat |
| <i>Pseudophryne bibronii</i> | Brown Toadlet | en | 6 | 26/3/1966 | U | Absence of suitable habitat |
| <i>Pseudophryne semimarmorata</i> | Southern Toadlet | en | 1 | 26/11/2004 | U | Absence of suitable habitat |
| <i>Litoria raniformis</i> | Growling Grass Frog | VU vu | 2 | 12/9/2000 | U | Absence of suitable habitat |
| <i>Dasyornis broadbenti caryochrous</i> | Rufous Bristlebird (Otway) | vu | 2 | 4/11/2010 | U | Absence of suitable habitat |

Notes: Threatened species records were sourced from the VBA (DEECA 2023c), within a 5 km radius of the project area. Likelihood of occurrence: H = High likelihood; M = Moderate likelihood; L = Low likelihood; U = Unlikely to occur (Appendix 1).

| | |
|---------------------------------------|-------------------------------------|
| EPBC Act listed species (DCCEEW 2023) | FFG Act listed species (DELWP 2022) |
| Cr Critically Endangered | L Listed as Threatened |
| En Endangered | cr Critically endangered |
| V Vulnerable | e Endangered |
| | v Vulnerable |

Figure 3
 Significant Flora Species within 5km
 of the Subject Site
 Deep Creek, Torquay

- Legend**
- Subject Site
 - Bellarine Yellow-gum
 - Coast Fescue
 - Coast Twin-leaf
 - Coast Wirilda
 - Creeping Rush
 - Mugga
 - Pallid Sun-orchid
 - Paper Flower
 - Parsley Xanthosia
 - Swamp Diuris



Coordinate System: GDA 1994 MGA Zone 55
 Map Scale when printed @ A4 1:40,000



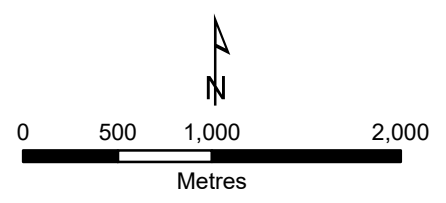
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Figure 4
Significant Fauna Species within 5km of the Subject Site
 Deep Creek, Torquay

- Legend**
- Subject Site
 - Australasian Shoveler
 - Australian Little Bittern
 - Bar-tailed Godwit
 - Blue-billed Duck
 - Brown Toadlet
 - Caspian Tern
 - Chestnut-rumped Heathwren
 - Common Greenshank
 - Eastern Curlew
 - Eastern Great Egret
 - Freckled Duck
 - Gang-gang Cockatoo
 - Grey Goshawk
 - Grey Plover
 - Growling Grass Frog
 - Hardhead
 - Hooded Plover
 - Hooded Robin
 - Lewin's Rail
 - Little Eagle
 - ▲ Little Egret
 - ▲ Musk Duck
 - ▲ Northern Giant-Petrel
 - ▲ Orange-bellied Parrot
 - ▲ Plains-wanderer
 - ▲ Platypus
 - ▲ Powerful Owl
 - ▲ Rufous Bristlebird (Otway)
 - ▲ Shy Albatross
 - ▲ Southern Toadlet
 - ★ Swift Parrot
 - ★ White-bellied Sea-Eagle
 - ★ White-faced Storm-Petrel
 - ★ White-throated Needletail



Coordinate System: GDA 1994 MGA Zone 55
 Map Scale when printed @ A4 1:40,000



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