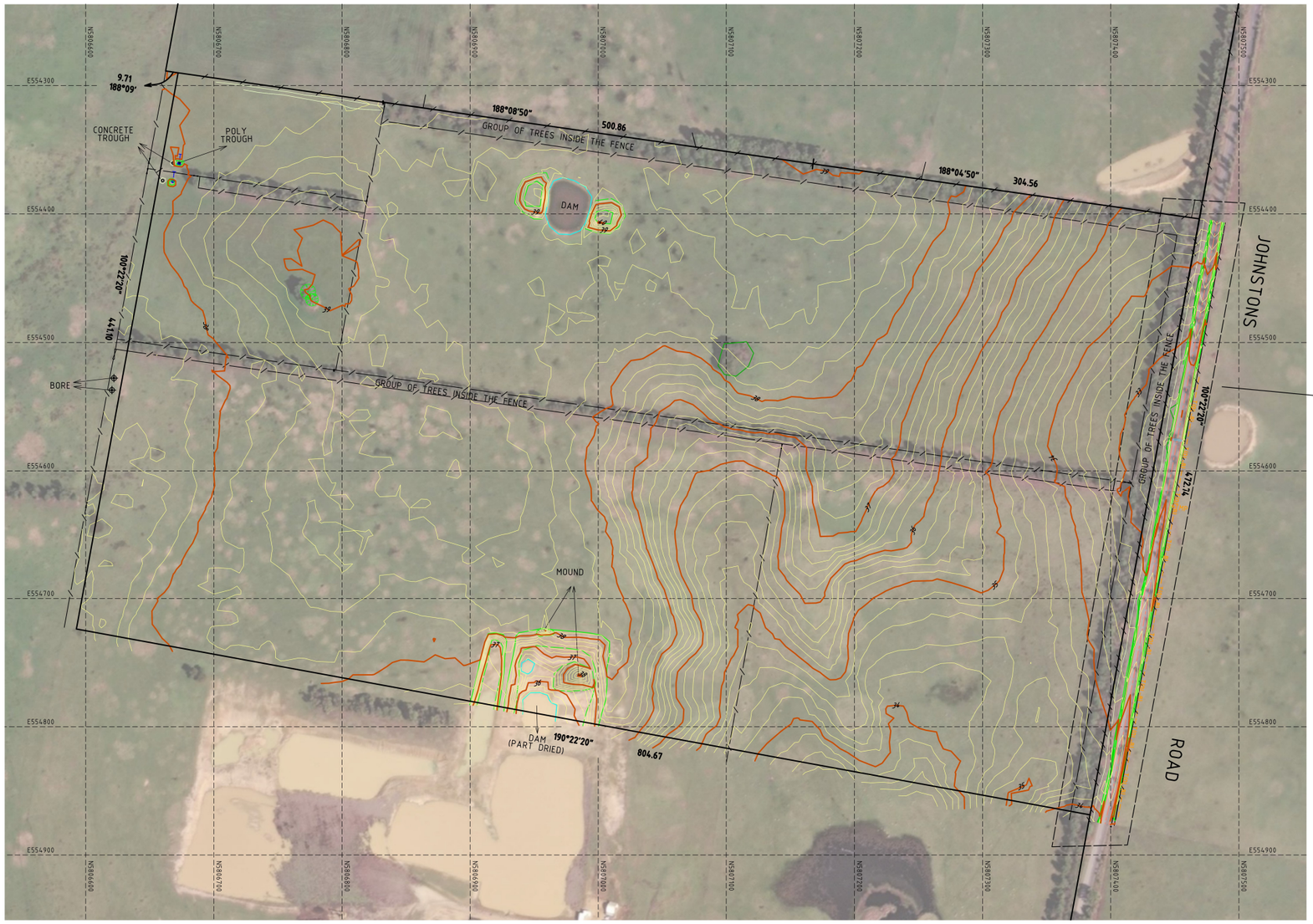
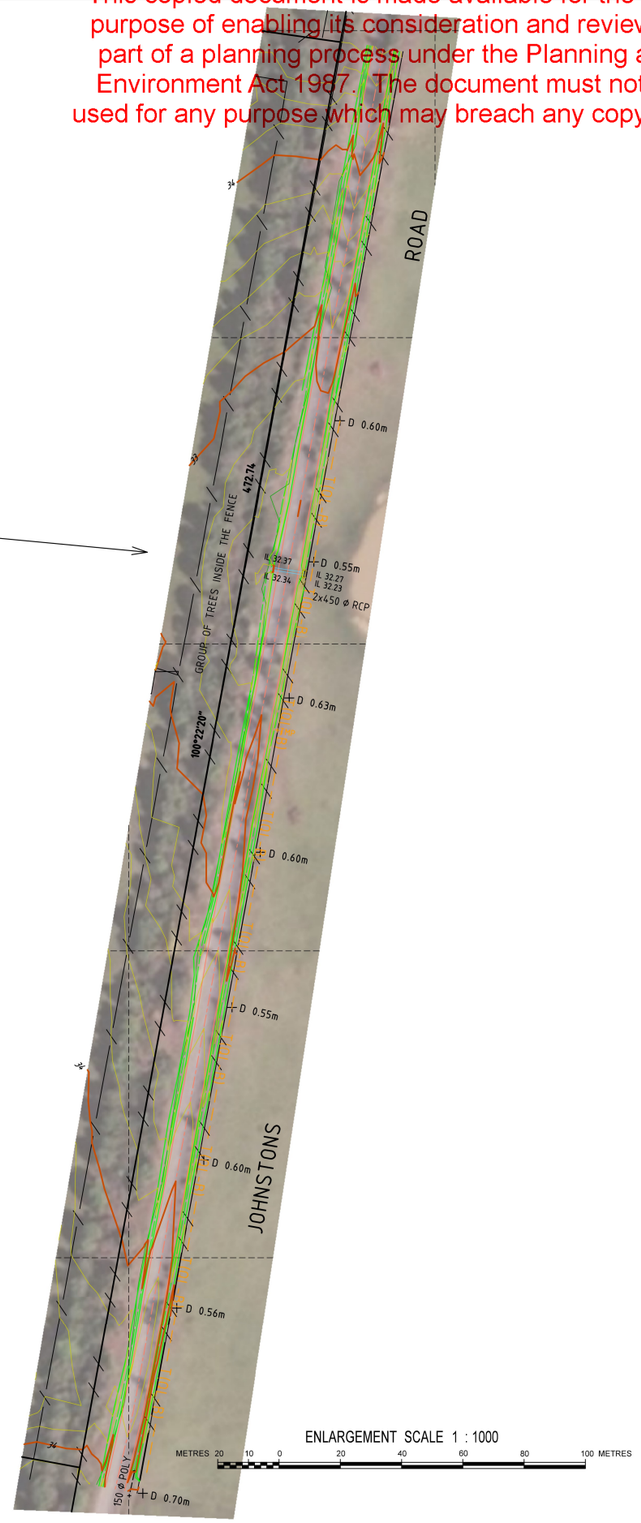


SEE ENLARGEMENT



ENLARGEMENT SCALE 1 : 1000

METRES 20 10 0 20 40 60 80 100 METRES

MGA2020
ZONE 55

ORIGINAL SCALE 1 : 2000 @ A1

METRES 40 20 0 40 80 120 160 200 METRES

LEGEND

RECTIFIED CADASTRAL BOUNDARY	WATER LINE (DAM)
CONTOUR MAJOR (1m)	VEGETATION STRING
CONTOUR MINOR (0.2m)	+TMP TELECOM MARKER POST
TOP OF BANK	MONITORING BORE
TOE OF BANK	WATER TAP
FENCE/GATE	TREE (ACTUAL SIZE)
EDGE OF CONCRETE	
EDGE OF BITUMEN	
CENTRE OF BITUMEN	
T(QL-B) TELECOM UNDERGROUND	

WARNING
BEWARE OF UNDERGROUND SERVICES
THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN

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Datum.
Horizontal Datum: Map Grid Australia (MGA2020) vide Moormurng PM27
E551480.41 N5811196.34
Vertical Datum: Australian Height Datum vide Moormurng PM27 RL31.04
Datum values obtained in April 2023 from SMES (DEECA - Survey Mark Enquiry Service)

Notes:
1. Quality B (QL-B) denotes service located by electromagnetic detection, penetrating radar or radio location.
2. Services labeled thus D 0.60m indicate depth from natural surface obtained by Electronic Service Tracing.
3. Some levels are turned off for clarity purposes.

EAST GIPPSLAND SHIRE COUNCIL

REVISION	DATE	ZONE

MGA2020
0 20 40 80
SCALE OF METRES
Scale 1:2000 @ A1

SMEC
Local People. Global Experience.
Traralgon - T 03 5173 0100

Surveyed	S. McLean / J. Bertuch	May '23
Drawn	K. Aquino	June '23
Checked	J. Bertuch	June '23
Approved	B. Poynton	June '23

EAST GIPPSLAND SHIRE COUNCIL
JOHNSTONS ROAD, BAIRNSDALE
LANDFILL REDEVELOPMENT
COMPOSTING FACILITY
FEATURE SURVEY

Drawing No. 30049148-00-001 Rev A
Sheet No. 1 of 1 A1

Proposed composting facility Bairnsdale

Detailed Assessment Pathway

Final

Prepared for:
East Gippsland Shire Council

April 2024

ETHOSNRM

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DOCUMENT CONTROL

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	Ashlee Dixon-Tong, Milena Beames, Mark Tickner, Paul Oakes EGSC	Review v1	Word	15 Feb 2024
	Ashlee Dixon-Tong, Milena Beames, Mark Tickner, Paul Oakes EGSC	Final	pdf	3 April 2024
	Ashlee Dixon-Tong, Milena Beames, Mark Tickner, Paul Oakes EGSC	Final	pdf	9 April 2024

COVER PHOTOGRAPH: VIEW FROM WITH PROPOSED COMPOSTING FACILITY LOOKING NORTH

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EXECUTIVE SUMMARY

This report documents an ecological assessment and provides planning advice to East Gippsland Shire Council who wish to construct a composting facility on land adjacent to the existing Bairnsdale Regional Landfill. Impacts have been assessed based on the footprint provided by EGSC. In line with Recycling Victoria policy, EGSC is required to introduce a food/garden organics collection by 2030. Construction of this facility will facilitate a smooth transition to a kerbside organics collection and ensure all environmental protection obligations are met for the management of organic waste in East Gippsland. Sustainability Victoria has awarded $250,000 to EGSC to support the construction of the hardstand and receivals shed for this project.

Biodiversity Values

The proposed composting facility is located on Johnstons Road, Bairnsdale. The land is within the Gippsland Plain Bioregion. The native vegetation identified by Ethos NRM comprises EVC 55 Plains Grassy Woodland, endangered within the Gippsland Plain bioregion, and is mostly confined to planted shelterbelts with a native grass understorey and small patches within cleared paddocks where native plants are dominant. A second EVC, Swamp Scrub EVC 53, also endangered, was found on the roadside only.

Ethos NRM recorded a total of 44 indigenous flora species and 42 exotic flora species at the site; several species not native to the State of Victoria were also noted. No threatened flora species were located on-site during the surveys conducted on 4th December 2023, 10th January 2024 and 27th March 2024. No habitat suitable for the threatened fauna species potentially present in the area was noted. Two species of Protected Flora (Black Wattle *Acacia mearnsii* and Coast Wattle *A. longifolia* subsp. *longifolia*) listed under the Flora and Fauna Guarantee Act 1988 were recorded; an FFG application to remove 20 plants of the former and 10 of the latter will be required and has been supplied for EGSC to submit to DEECA. Weed species were widespread and included two Weeds of National Significance (African Boxthorn and Blackberry), also listed as noxious under the *Catchment and Land Protection (CaLP) Act 1994.* Other listed weed species found were Bridal Creeper *Asparagus asparagoides*, a Restricted species; and Spear Thistle *Cirsium vulgare,* listed as Regionally Controlled.

Approvals

No significant impacts on ecological communities or species considered to be Matters of National Environmental Significance and protected under the *Environmental Biodiversity and Conservation Act 1999* are expected to result from the project or removal of native vegetation at the site.

Although the proposed facility is within the Gippsland Lakes Ramsar site, no wetland values exist.

Native vegetation removal is over 0.5 ha and a Detailed Assessment Pathway, with full Habitat Hectare Assessment, was therefore required. Ten patches of native vegetation were assessed, totalling 1.070 ha of removal. This will require an offset of 0.277 General Habitat Units with a minimum strategic biodiversity value of 0.356 at a cost of approximately $25,000 to $47,000; these offsets are currently available on the credit register.

Planning zones and overlays

The area is zoned Farming, and an Environmental Significance Overlay (the Goon Nure Wildlife Corridor) applies. The proposed facility is also within a Designated Bushfire Prone Area. The Building Regulations 2018 apply bushfire protection standards for building works in designated BPA. EGSC is advised to check these standards with regard to the structures proposed at the composting facility.

1 INTRODUCTION

1.1 Project Description

East Gippsland Shire Council (EGSC) engaged Ethos NRM to undertake the required ecological assessments on land at Johnstons Road, Bairnsdale, where Council wishes to develop a compost facility.

In line with Recycling Victoria policy, EGSC is required to introduce a food/garden organics collection by 2030. Accordingly, EGSC intends to establish an aerobic composting facility adjacent to the Bairnsdale Regional Landfill. The facility will process 25000t of garden and mixed food organics a year. Currently garden organics received at EGSC transfer stations are shredded by a contractor four to seven times a year. This shredded waste has previously been used in the rehabilitation of landfill cells but, following the 2022 closure of the Cann River landfill, no further rehabilitation works (excluding maintenance and Bairnsdale cells) will be required. A new processing method is, therefore, needed.

The closest commercial composting facility to East Gippsland Shire is Gippsland Regional Organics (GRO) located in Dutson Downs, 96km from Bairnsdale Landfill. The cost of out-sourcing processing through a facility such as GRO is significant and cannot be offset through the sale of composted organics. There are also significant environmental implications related to the transport of organic waste to a commercial facility. The construction of this facility will facilitate a smooth transition to a kerbside FOGO collection and ensure all environmental protection obligations are met for the management of organic waste in East Gippsland.

Sustainability Victoria has awarded $250,000 to EGSC to support the construction of the hardstand and receivals shed for this project.

1.2 Site Details

The site of the proposed compost facility is adjacent to the Bairnsdale Regional Landfill which is approximately 5km south of the town of Bairnsdale on Johnstons Road. A concept plan for the development is shown in Figure 1 and includes:

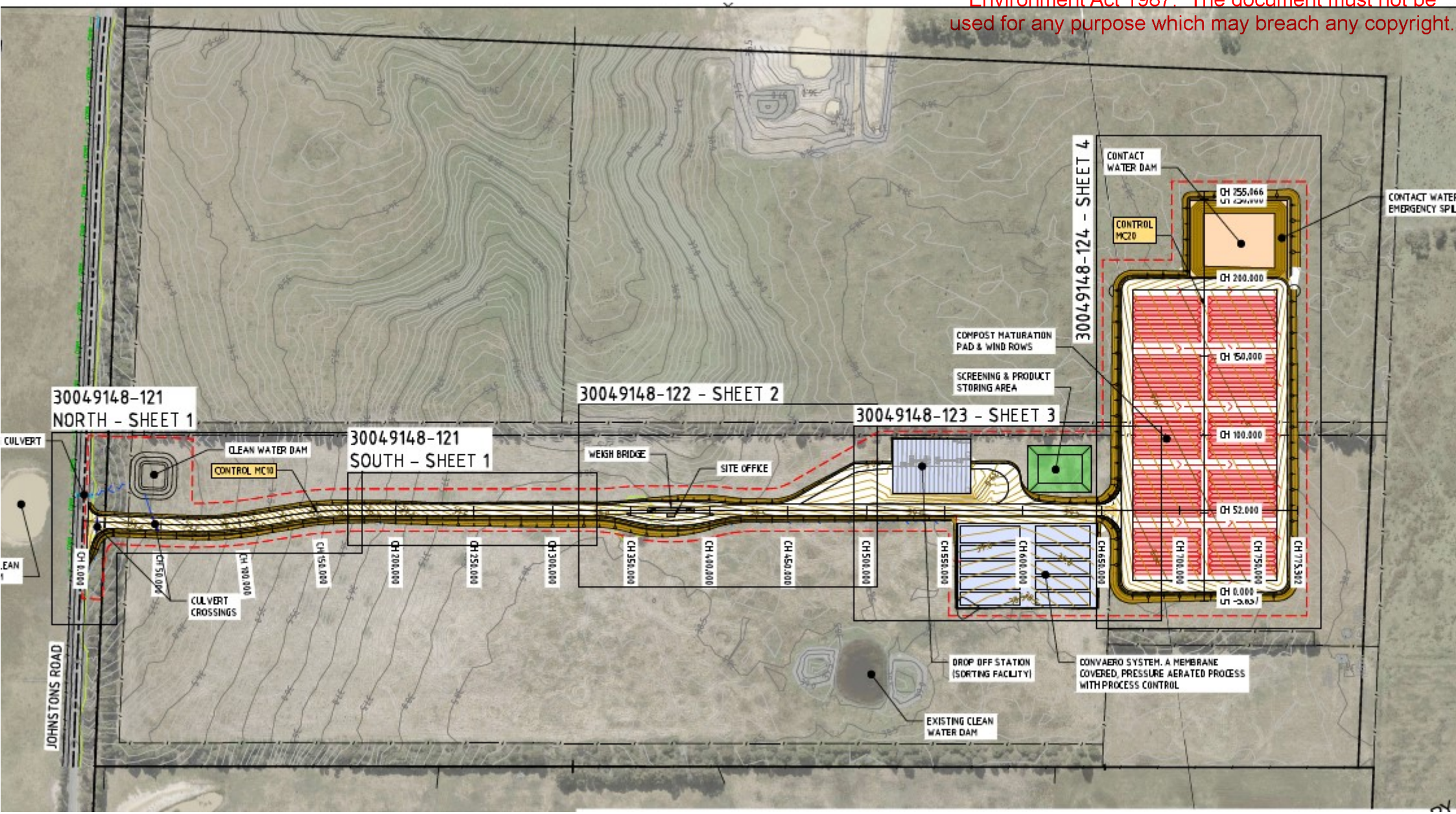
- A 200m x 100m compost maturation pad where material will be laid out in wind rows
- A drop-off station
- Two dams
- A screening and product storing area
- A site office and weighbridge
- A stormwater detention and treatment assets
- A proposed waste process shed
- A leachate treatment pond

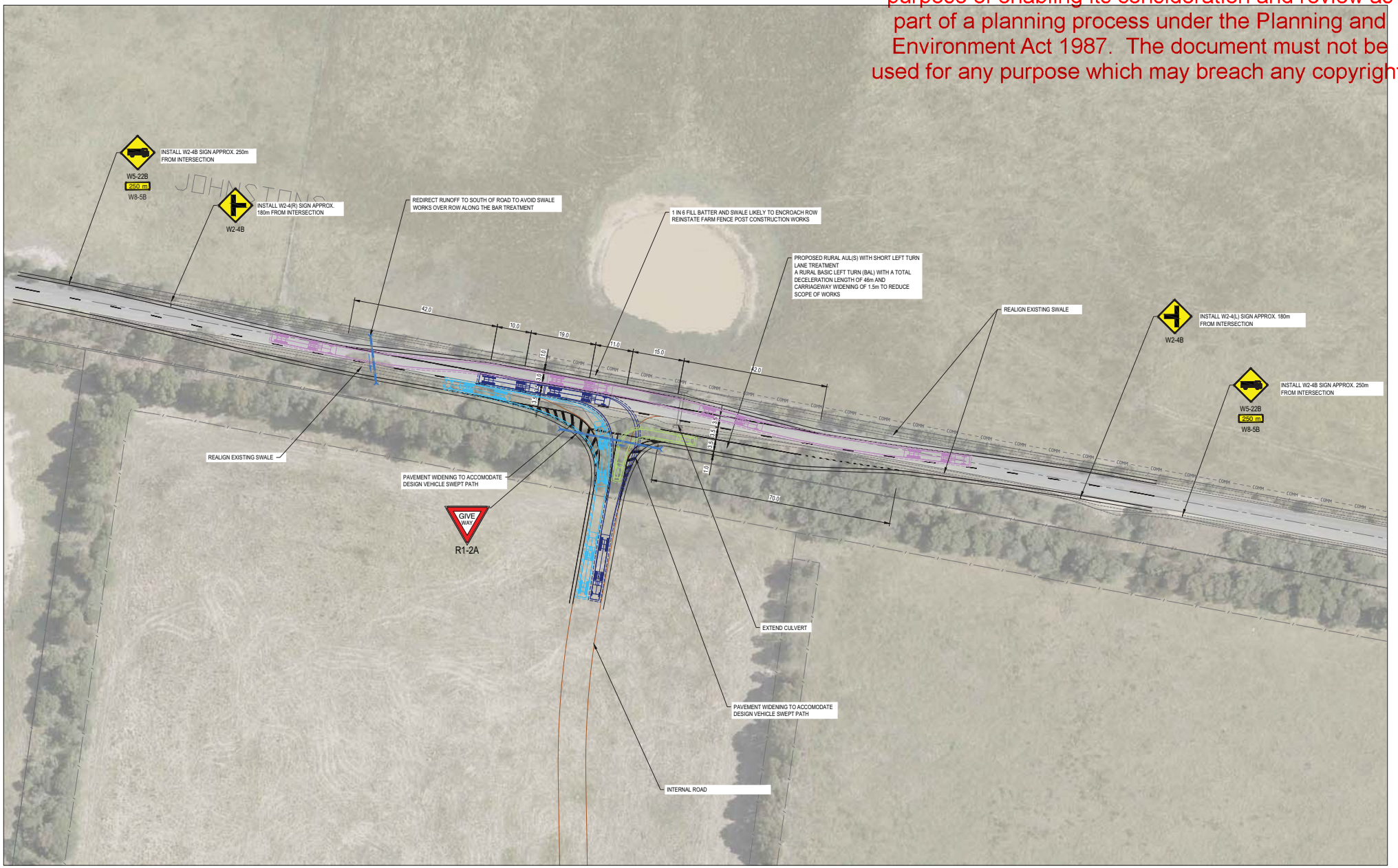
Access to the facility will be across a vegetated roadside (Figure 2 and Plate 7 and 10-12). The land has been used for grazing for many years and contains native vegetation mostly comprised of planted roadside vegetation and shelterbelts with a mix of species local to the Gippsland Plains but also species which are native but found in other parts of Victoria. The roadside also contains Australian species not native to Victoria.

1.3 Objectives

The objectives of this report are to present the results of the desktop and field surveys carried out to allow East Gippsland Shire Council to meet its statutory requirements under relevant environmental legislation

particularly Clause 52.17 of the East Gippsland Planning Scheme. This report can be attached to the planning permit application and any referral to the Department of Energy, Environment and Climate Change (DEECA).





30049148 - EGSC COMPOSTING FACILITY

JOHNSTON RD INTERSECTION

Date Issued: 15/03/2024 | Revision: A
SMEC Drawing Number: 30049148-CIV-SK-001
Drawn by: NK

Scale 1:500

SMEC
Member of the Surbana Jurong Group

2 DESKTOP INVESTIGATION

2.1 Matters of National Environmental Significance (MNES)

The EPBC[1] Act Protected Matters Search Tool was used to identify relevant MNES including the potential presence of nationally threatened species and ecological communities within 5km of the proposed composting facility.

2.2 Flora and Fauna Guarantee (FFG) Act 1988 listed Threatened Species

Records in the Victorian Biodiversity Atlas (VBA) of FFG Act listed threatened species were assessed within 5km of the proposed composting facility. The 5km buffer accounted for species that have only been recorded in adjacent areas but could be present in the site, or spatial inaccuracies in the data. These data were supplemented with species identified using the EPBC[2] Act Protected Matters Search Tool, i.e., EPBC listed species not recorded in the VBA but that could potentially be present.

2.3 Likelihood of Occurrence

An assessment of the likelihood of occurrence within the project area for each threatened flora and fauna species identified in the VBA search was completed using the guidelines in Tables 1 and 2.

Table 1 Guidelines for determining the likelihood of occurrence of flora species within the project area

Guidelines	
Known occurrence	Recorded in the project area within last 25 years.
High	Recorded in the local vicinity (less than 5 km) within last 25 years, and/or the project area contains areas of high-quality habitat for the species.
Moderate	Recorded in the local vicinity within last 25 years, and/or the project area contains some characteristics of the species' preferred habitat.
Low	Limited previous records in the local vicinity within last 25 years, and/or the project area contains poor habitat for the species.
Unlikely	No previous records of the species in the local vicinity, and/or no potential habitat in the local vicinity, and/or outside the species range.

[1] *Environment Protection and Biodiversity Conservation Act 1999* (Comm.)

Table 2 Guidelines for determining the likelihood of occurrence of fauna species within the project area

Guidelines	
Known occurrence	Recorded in the project area within last 25 years.
High	Likely resident population within the project area based on previous records or expert advice, and/or recently recorded in the local vicinity, and/or the project area contains areas of preferred habitat for the species.
Moderate	Previous records in the local vicinity within last 25 years, and/or species likely to move through the project area regularly or visit the site seasonally, and/or the project area contains some characteristics of the species' preferred habitat.
Low	Limited previous records of the species in the local vicinity within last 25 years, and/or species may occur rarely or opportunistically, and/or the project area contains few characteristics of the species' preferred habitat.
Unlikely	No previous records of the species in the local vicinity within the last 25 years, and/or the project area has no suitable habitat for the species, and/or outside the species range or locally extinct, and/or species may fly over the project area.

2.3.1 Planning zones and overlays

A Planning Property Report was generated using DTP's[3] VicPlan mapping tool.

2.4 Field Survey

2.4.1 Habitat Hectares assessment

A preliminary field survey was carried out by Ethos NRM (Mick Bramwell and Norm Borg) on 4 December 2023, followed by a second survey on 10 January 2024 (Mick Bramwell and Trish Fox), and a third on 27 March 2024 (Mick Bramwell and Trish Fox) as the access slip road design had been finalised. All areas within the site works area delineated by EGSC (Figure 3) were surveyed. The Habitat Hectares assessment was undertaken on 10 January and 27 March 2024 by Mick Bramwell, a DEECA accredited native vegetation assessor, as per the methodology described in the *Vegetation Quality Assessment Manual* (DSE, 2004). When undertaking the assessment, Ethos NRM applied a 5m construction buffer around the dam and the proposed drain that will connect the dam to an existing culvert, and assumed an additional loss of native vegetation of 1m around the No Go Zone due to indirect impacts. The No Go Zone was assumed to be the outer edge of the concept design.

Background: The Habitat Hectares method is designed to assess native vegetation condition and quality using a standardised methodology, which is described in the Vegetation Quality Assessment Manual (DSE, 2004). Various components of the vegetation at a site are assessed against 'benchmarks' for the relevant vegetation type, and a Habitat Score is calculated based on the results of this assessment and the condition of the surrounding landscape. In theory, an area that meets the characteristics of the benchmark and is surrounded by intact native vegetation would score 100. A final Habitat Hectares score is calculated from the Habitat Score and the area of the site in hectares. One function of the Habitat Hectares score is to determine offset requirements for native vegetation removal.

2.4.2 Targeted surveys

Given the disturbed nature of the land and the lack of any threatened species recorded on site, Ethos NRM considers that there is no need for additional targeted surveys for threatened flora and fauna species.

[3] Department of Transport and Planning (Victoria)

2.4.3 Available habitat assessment

An onsite assessment of the availability of suitable habitat for threatened species identified in the desktop investigation was completed.

2.5 Determination of Assessment Pathway and Application Requirements

The assessment pathway was determined using DEECA's Native Vegetation Removal Tool to identify the location category of the proposed native vegetation removal, and the proposed extent (hectares) of native vegetation to be removed.

Background: As per the *Guidelines for the removal, destruction or lopping of native vegetation* (the Guidelines) (DELWP, 2017) planning permit applications to remove native vegetation must be assessed under one of three pathways: basic, intermediate, or detailed. The relevant assessment pathway for an application is determined by the extent of native vegetation being removed (including past removal) and the location category (Location 1,2, or 3). The location category reflects the potential risk to biodiversity resulting from a small amount of native vegetation removal in that area. The assessment pathway dictates the level of detail required to accompany a planning permit application for the removal of native vegetation.

2.6 Determination of Offset Requirements

The offset requirement for this project was determined by creating a GIS spatial layer recording the extent, condition, and other characteristics of native vegetation to be removed. This spatial data was provided to DEECA and used to produce a Native Vegetation Removal Report[4] showing the offset requirement and type and specifying from what area the offset can be secured.

Background: Offsets are categorized as either *species* or *general* offsets. A species offset is required when the removal of native vegetation has a significant impact on habitat for rare or threatened species. A general offset is required when native vegetation is removed without significant impact on individual species. The size of the required offset is recorded in *species habitat units* (SHU) or *general habitat units* (GHU). Individual large trees are also required to be offset as part of the species or general offset.

2.7 Taxonomy

Common and scientific names for flora and fauna species in this report follow the DEECA *Victorian Biodiversity Atlas* (VBA) checklist. Please note these names are not always consistent with those used in other databases.

2.8 Survey Limitations

The following limitations apply to the methodology:

- The vegetation assessment includes only vascular flora; non-vascular flora such as mosses and liverworts were not sampled, nor was aquatic flora.
- Certain flora species are only readily identifiable under specific temporal, environmental or climatic conditions. Field surveys were undertaken in summer and there is the potential that plants which flower outside this period were not detected.
- Several flora taxa were only identifiable to genus level due to the lack of flowering material at the time of survey.

[4] For the purposes of this draft report DEECA's EnSym NVR Tool has been used to identify the offset requirement. The final report will include an official Native Vegetation Removal Report obtained from DEECA's planning unit.

- Mapping of flora species and communities was undertaken with an iPhone using the ESRI Field Maps app, the Nav Cam and aerial photo interpretation. Accuracy of this mapping is therefore limited to the GPS unit (generally (+/-) 4m) and the quality of available aerial imagery.
- No targeted flora or fauna surveys were undertaken.

3 RESULTS

3.1 Threatened communities

The EPBC Act Protected Matters Search Tool indicated the possible presence of three critically endangered ecological communities (Table 3).

Table 3. The critically endangered ecological communities identified by the Protected Matters Search Tool

Community ID	Community name	Threatened category	Rank	Comments
97	Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains	CE	Likely	Community likely to occur in buffer area only
133	Natural Damp Grassland of the Victorian Coastal Plains	CE	May	Community may occur buffer area only
73	Gippsland Red Gum (*Eucalyptus tereticornis* subsp. *mediana*) Grassy Woodland and Associated Native Grassland	CE	Likely	Community likely to occur in feature area

Seasonal Herbaceous Wetlands are dominated by a ground layer of native wetland graminoids including *Carex tereticaulis*, *Amphibromus* spp., *Deyeuxia* spp., *Glyceria* spp., *Lachnagrostis* spp., *Poa labillardieri*, and *Rytidosperma duttonianum* and at least one native wetland forb (Commonwealth of Australia, 2012). Ethos NRM considers that this ecological community is not present at the composting facility site.

Natural Damp Grassland of the Victorian Coastal Plains is characterised by a grassy ground cover that commonly includes a range of tussock and non-tussock grasses (dominated by *Themeda triandra* on drier sites and *Poa labillardierei* on wetter sites), other graminoids, and forbs (Department of the Environment, 2015). Ethos NRM considers that the community is not present on the composting facility site.

The potential for the Gippsland Red Gum (*Eucalyptus tereticornis* subsp. *mediana*) Grassy Woodland and Associated Native Grassland ecological community to exist at the site was assessed using the flowchart included in the policy statement (Commonwealth of Australia, 2010). Ethos NRM concluded that none of the patches of native vegetation equate to the national ecological community. Patches were either too modified by exotic pastures, plantings or weeds, to be considered the woodland form, or had too few species to be considered the grassland form. Similarly, the native vegetation does not conform to any threatened communities listed under the FFG Act 1988.

3.2 Wetlands

The proposed composting facility is within the Gippsland Lakes Ramsar site but there are no wetland values within the surveyed area.

3.3 Threatened species

Interrogation of the VBA revealed records of 39 threatened species within the 5km radius (28 bird, seven flora, two fish, one mammal and one amphibian species). These are listed in Appendix 1; purely marine species, such as Burrunan Dolphin, were excluded from the list.

None of the threatened flora species was recorded on site. Little or no suitable habitat remains within the development footprint for any of the threatened flora or fauna species identified in the desktop investigation. The land has been used for grazing for many decades and pasture grasses and weeds are common throughout.

Two dams are present on site (outside of the proposed works area) and there is a low chance that one of the threatened fish species (Flinders pygmy perch) could be present in those dams, but development of the site should not impact these dams. The Green and Golden Bell Frog is known to occur at Macleod Morass which is less than 5km from the survey site, but no habitat exists on the survey site for this species. The majority of the threatened bird species records are also from nearby MacLeod Morass and Gippsland Lakes. Two Latham's Snipe were noted during field surveys on 10 January 2024 but given the highly disturbed nature of the site, Ethos NRM does not consider that the Johnstons Road land offers prime habitat for this species or any wading bird species; the observed birds may have been taking advantage of the unusually wet conditions in January 2024 and are only likely to use the site opportunistically.

3.3.1 Threatened species: likelihood of occurrence

A likelihood of occurrence analysis - based on previous records of the species within the local vicinity, descriptions of habitat requirements and behavioural characteristics for each species, and on-site assessment of habitat availability – was completed for the threatened flora and fauna species in the VBA search and is included in Appendix 1. Given the highly disturbed nature of the area, Ethos NRM considers there is a **low** likelihood that any of the threatened flora species would occur as the project area contains poor habitat for the species; and there is a low likelihood of any threatened fauna species occurring as the project area contains few characteristics of the species' preferred habitat.

3.3.2 Nationally threatened flora and fauna species

The Protected Matters Search Tool also revealed the potential presence of many threatened species. These are listed in Appendix 2; whales, turtles, sharks, marine fish and pelagic bird species such as albatross have been removed. None of the threatened flora species identified in this search were found on site and Ethos NRM considers there is a **low** likelihood that any would occur on the site given the highly disturbed nature of the land. Similarly, as the project area contains few characteristics of the threatened fauna species' habitat, there is a **low** likelihood those species would occur. The Protected Matters Search Tool also identified the potential for 31 migratory bird species to be present. As before, Ethos NRM consider there is little prospect of any of these species using the project area as habitat is so degraded.

3.4 Assessment Pathway

The assessment pathway for this project was identified based on the extent and location of the proposed native vegetation removal (Table 4). The proposed composting facility is in a Location 2 category but as native vegetation removal is >0.5 ha, the assessment pathway is **detailed.** This was confirmed by DEECA's Native Vegetation Removal Report which is included in Appendix 6.

Table 4. Assessment pathway for the proposed composting facility

Extent (including any past removal)	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

3.5 Native Vegetation and Landscape Description

3.5.1 Ecological vegetation classes and bioregion

The proposed composting facility is located with the Gippsland Plain bioregion. This bioregion, located in the southeast of Victoria, includes flat low lying coastal and alluvial plains with a gently undulating terrain dominated by barrier dunes and floodplains and swampy flats and is generally below 200 m above sea level (DEECA, 2023a).

EVC mapping from DEECA's mapping tool NatureKit shows remnant Plains Grassy Woodland (EVC 55), which has a bioregional conservation status of endangered (DEECA, 2023b) on the site. However, native vegetation extent has been much reduced in this area due to land clearing for agriculture; the proposed site has been grazed by stock for many years and does not meet the typical floristic characteristics of EVC 55. However, it is highly likely that EVC 55 was once the dominant vegetation type present and, accordingly, this benchmark was used in the Habitat Hectares assessment. Alongside the roadside, there was a section of Swamp Scrub, EVC 53, which is also endangered in the bioregion.

3.5.2 Native vegetation description

The native vegetation that is present largely consists of patches of native species in the roadside vegetation and shelterbelts. Although most of these trees and shrubs in the roadside and shelterbelts have been planted and potentially exempt from native vegetation removal regulations, perennial grasses, sedges and rushes in the understorey often exceeds the threshold for the definition of native vegetation and hence these planted areas have been assessed as native vegetation. Forty indigenous species were recorded and are listed in Appendix 3.

There are no large trees to be removed as part of the development. One large Gippsland Red-gum (measuring 72cm diameter at breast height) was recorded on site and will be retained, and one large Swamp Gum (76cm) was close to the eastern edge of the proposed slip lane but will not be impacted.

Photographs of the project area and the native vegetation to be removed are included in Plates 2 to 13.

3.5.2.1 Roadside vegetation and shelterbelts

Native tree species along the roadside and within the shelterbelts include Gippsland Red-gum *Eucalyptus tereticornis* subsp. *tereticornis*, Swamp Gum *E. ovata* and Forest Red Box *E. polyanthemos* subsp. *polyanthemos*. Shrubs present include Cherry Ballart *Exocarpus cupressiformes*, Black Sheoak *Allocasuarina verticillata*, Rough-barked Honey-myrtle *Melaleuca parvistaminea*, Sweet Bursaria *Bursaria spinosa*, and Lightwood *Acacia implexa*; the latter two are showing good recruitment along the roadside. Few herb/small shrub species were recorded apart from Nodding Saltbush *Einadia nutans* and Kidney-weed *Dichondra repens*. Native grasses included Spear-grasses *Austrostipa* spp., Kangaroo Grass *Themeda triandra* and Weeping Grass *Microlaena stipoides*. Non-indigenous species on the roadside included Pincushion Hakea *H. laurina* (a Western Australian species) and Willow-leaved Hakea *H. salicifolia* (indigenous to New South

Wales), Hillock Bush *Melaleuca hypericifolia* (New South Wales) and Green Honey Myrtle *M. dibsmifolia* (Western Australia).

3.5.2.2 Other native vegetation patches

In the unfenced paddocks, there were several areas that would be considered patches under Native Vegetation Regulations – that is, areas where more than 25% of the perennial vegetation are native species (DELWP, 2017). These areas were species poor and mostly consisted of perennial native rushes (predominantly *Juncus subsecundus*) and grasses (*Microlaena stipoides, Panic effusum* and *Austrostipa* spp.) with small patches of Kidney-weed (*Dichondra repens*).

3.5.3 Weeds

Forty-two weed species were noted, four of which are considered noxious species.

African Boxthorn *Lycium ferocissimum,* Blackberry *Rubus fruticosus* and Spear Thistle *Cirsium vulgare* are categorized as 'regionally controlled' in East Gippsland under the Catchment and Land Protection Act 1994 - these invasive plants are usually widespread in a region. To prevent their spread, ongoing control measures are required. Landowners have the responsibility to take all reasonable steps to prevent the growth and spread of regionally controlled weeds on their land.

Blackberry was present in one small section of roadside to be cleared for the slip lane. Both Blackberry and African Boxthorn are considered Weeds of National Significance (Weeds Australia, n.d.)

Bridal Creeper *Asparagus asparagoides* is categorized as 'restricted' under the CaLP Act; this category includes plants that pose an unacceptable risk of spreading in this state and are a serious threat to another state or territory of Australia. Weed species are included in Appendix 3.

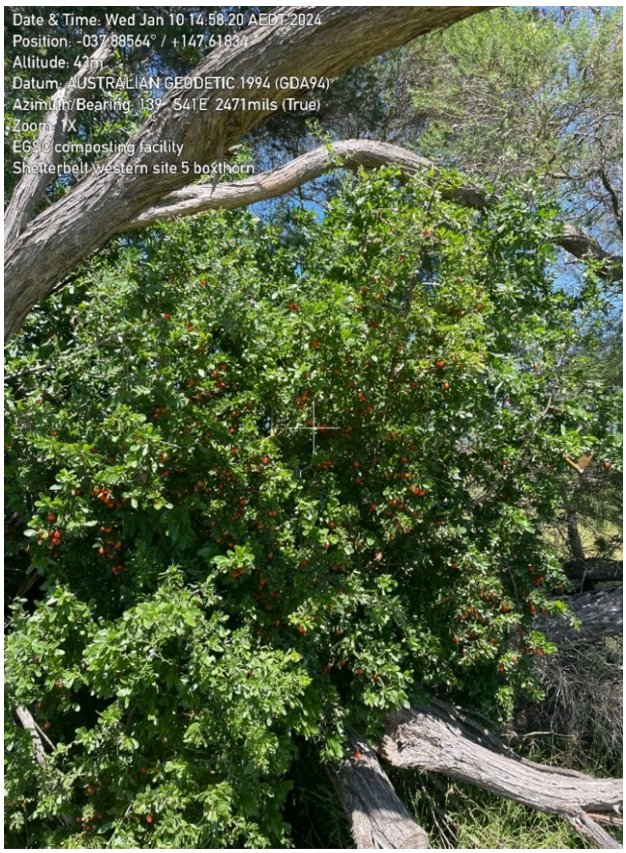


Plate 1. One large African Boxthorn in one of the shelterbelts

Plate 2. Looking south along the western shelterbelt. HZ1 in Fig. 2.

Plate 3. Looking south-east towards the western shelterbelt

Plate 4. A native vegetation patch, dominated by Weeping Grass *Microlaena stipoides*. HZ2 in Fig. 2.

Plate 5. A native vegetation patch dominated by Kidney-weed *Dichondra repens*. HZ7 in Fig. 2.

Plate 6. The large Red Gum at the end of the short shelterbelt (HZ1 in Fig. 2); this tree is to be retained.

Plate 7. Planted vegetation along the roadside HZ9 in Fig. 2.

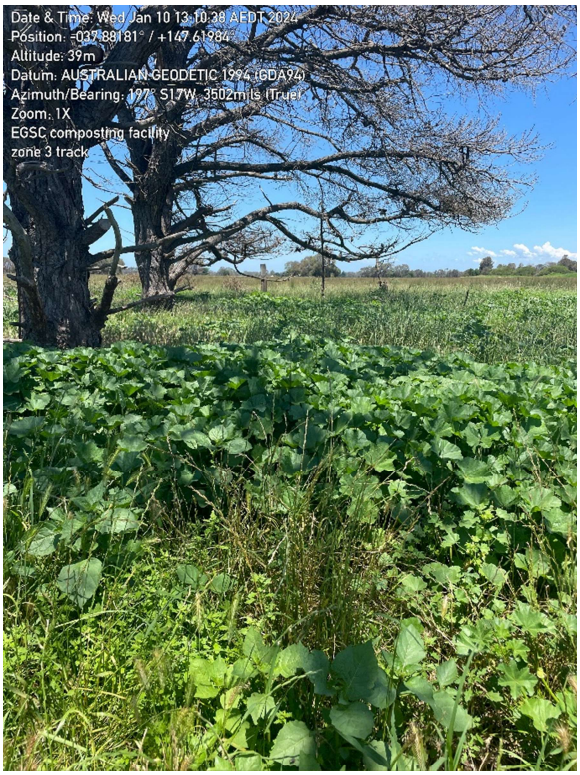


Plate 8. Weedy section of the area marked trafficable pavement in Fig. 1

Plate 9. Native vegetation, marked on Fig. 2 as HZ8), within the trafficable pavement in Fig. 1

Plate 10. Roadside vegetation (Zone 9) looking west

Plate 11. Roadside vegetation (Zone 10) looking east

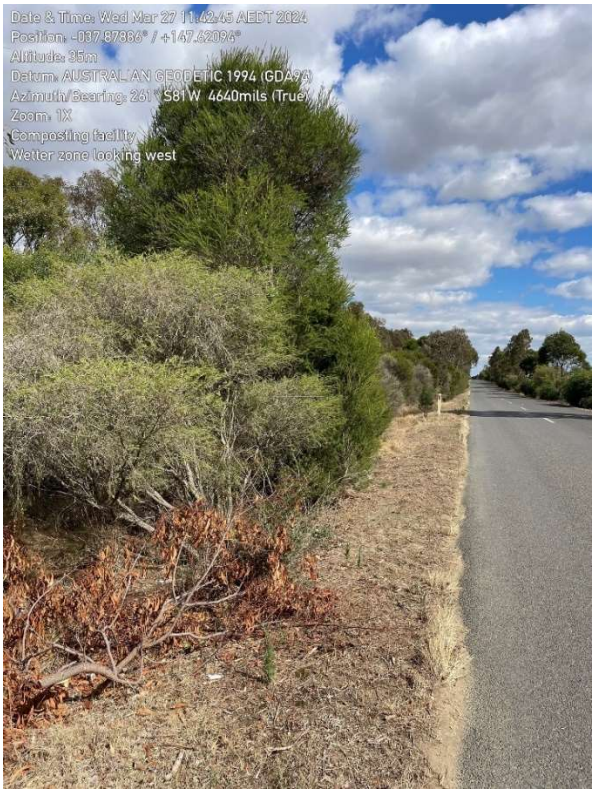


Plate 12. Swamp Scrub (Zone 10)

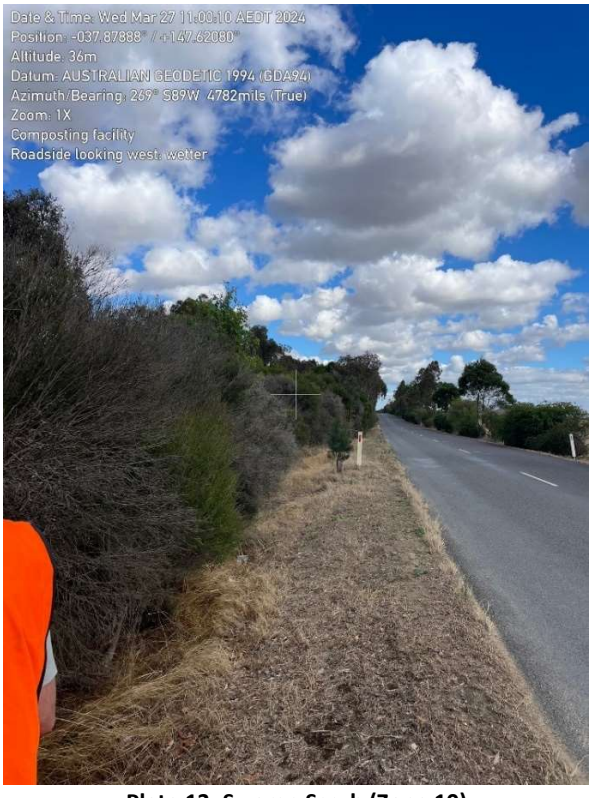


Plate 13. Swamp Scrub (Zone 10)

3.5.4 Habitat Hectares assessment

Ten patches of native vegetation were assessed using the Habitat Hectares method. The patches are shown in Figure 3 and Figure 4 shows the native vegetation removal on the roadside in more detail. Habitat Hectare results are summarized in Table 5 and assessment sheets are included in Appendix 3.

Table 5. Habitat Hectares results for native vegetation patches in the project area

BCS (Bioregional Conservation Status): E – Endangered
EVC: PGW – Plains Grassy Woodland

Habitat Zone			1	2	3&4	5&6	7&8	9	10
Bioregion			Gippsland Plain						
EVC			PGW	PGW	PGW	PGW	PGW	PGW	SS
EVC Number			55	55	55	55	55	55	53
BCS			E	E	E	E	E	E	E
		Max.	**Score**	**Score**	**Score**	**Score**	**Score**	**Score**	
Site Condition	Large Trees	10	0	0	0	0	0	0	NA
	Canopy Cover	5	5	4	0	0	0	4	5
	Lack of weeds	15	0	4	0	4	6	0	6
	Understorey	25	5	5	5	5	5	15	5
	Recruitment	10	6	6	0	0	0	6	6
	Organic litter	5	5	5	2	0	3	5	5
	Logs	5	2	2	0	0	0	2	NA
	Total	75	23	26	7	9	14	32	27
	Multiplier	1.00	-	-	-	-	-	-	1.25
	Final Site Condition Score	**75**	**23**	**26**	**7**	**18**	**14**	**32**	**34**
Landscape Context	Patch size	10	1	4	1	1	1	4	4
	Neighbourhood	10	1	1	1	1	1	2	2
	Distance to core area	5	1	1	1	1	1	1	1
	Total	**15**	**3**	**6**	**3**	**3**	**3**	**7**	**7**
Habitat Score		**100**	**26**	**32**	**10**	**12**	**17**	**39**	**41**
Area of Habitat Zone (hectares)		-	0.341	0.397	0.004/ 0.009	0.157/ 0.033	0.063/ 0.065	0.114	0.160

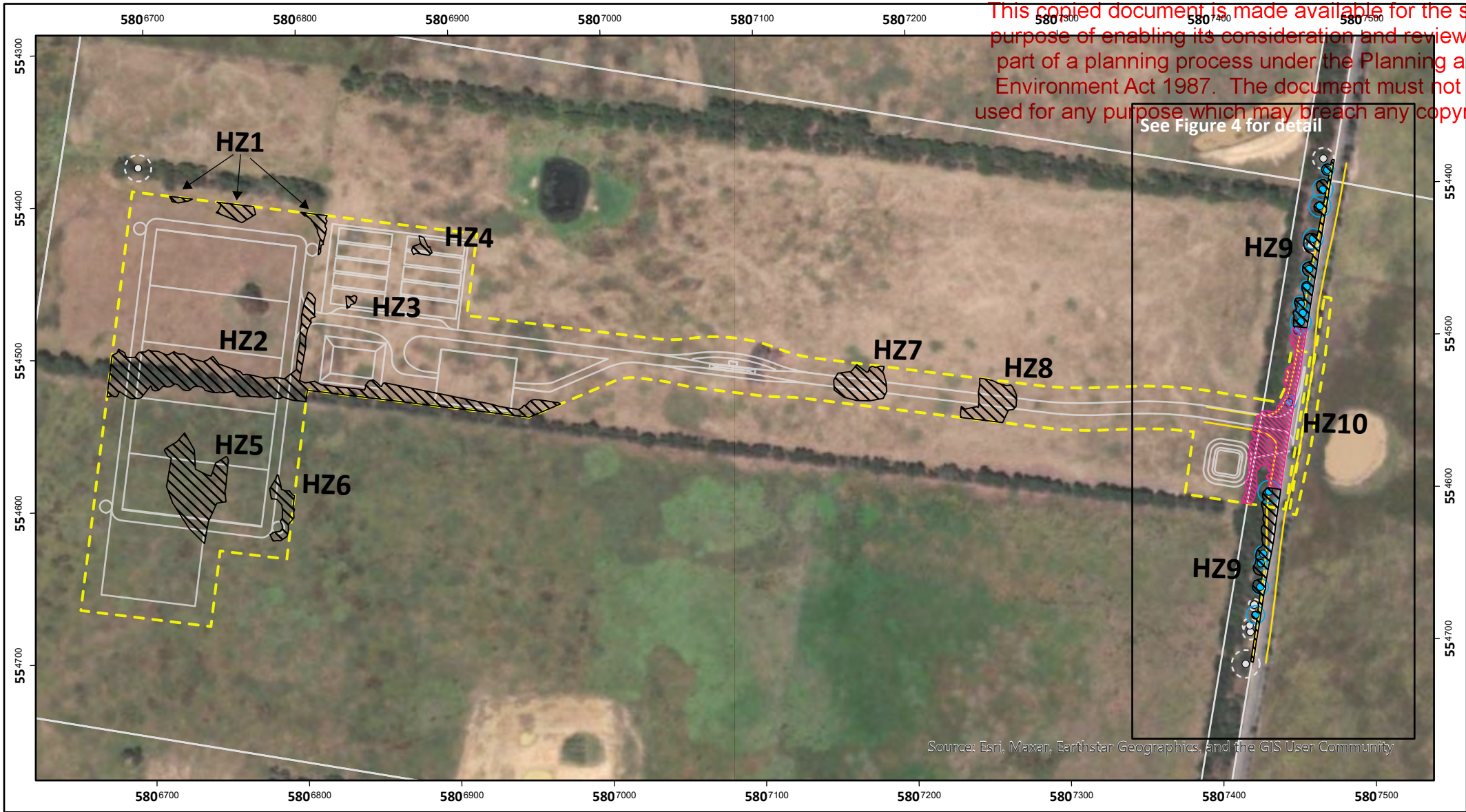


Figure 3: Patches of native vegetation to be removed for the proposed composting facility

23053 Composting Facility
East Gippsland Shire Council

- Site works area
- Intersection extent (approximate)
- Construction design (simplified)

Canopy tree removal status showing TPZ extent
- Not removed
- Indirect removal

Native vegetation removal extent
- Swamp Scrub (EVC 53)
- Plains Grassy Woodland (EVC 55)

Spatial Reference
GDA 2020 MGA Zone 55

0 50 100
Metres

Date: 4 April 2024

ETHOSNRM
Produced by Ethos NRM
162 Macleod Street
Bairnsdale, VIC 3875
Ph: (03) 5153 0037
info@ethosnrm.com.au

Figure 4: Patches of native vegetation to be removed for the proposed composting facility (detail)

23053 Composting Facility
East Gippsland Shire Council

- Site works area
- Intersection extent (approximate)
- Construction design (simplified)

Canopy tree removal status showing TPZ extent

- Not removed
- Indirect removal

Native vegetation removal extent

- Swamp Scrub (EVC 53)
- Plains Grassy Woodland (EVC 55)

Spatial Reference
GDA 2020 MGA Zone 55

0 10 20 30 40 50
Metres

N

Date: 28 March 2024

ETHOSNRM

Produced by Ethos NRM
162 Macleod Street
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info@ethosnrm.com.au

3.5.5 Planning zones and overlays

The Planning Property Report generated using DTP's[5] VicPlan mapping tool shows the land in question is within the Farming Zone. The report is included in Appendix 5.

3.5.5.1 Environmental Significance Overlay

An Environmental Significance Overlay covers the roadside vegetation only and is included in the East Gippsland Planning Scheme as the 'Goon Nure Wildlife Corridor'. Management practices encouraged under this ESO include:

- Encourage landholders to fence vegetation remnants.
- Develop and encourage application of an appropriate weed control program.
- Encourage cooperative fox control programs which minimize risk to non-target species.
- Encourage application of appropriate fire regime.
- Design a road maintenance strategy which minimizes damage to roadside vegetation.
- Encourage parallel plantings on freehold land to widen vegetation corridor.
- Encourage revegetation of any vegetation gaps along the roadside.

A small section of the roadside vegetation will be lost. It should be noted that some species, such as Ironbark *Eucalyptus tricarpa*, which are not indigenous to the Red Gum Plains have been planted in this corridor. It is understood that EGSC intends to plant some screening native vegetation to assist in compensating for the loss of this native vegetation.

3.5.5.2 Designated Bushfire Prone Area

The subject land is within a Designated Bushfire Prone Area. The Building Regulations 2018 apply bushfire protection standards for building works in designated BPA. EGSC is advised to check these standards with regard to the structures, such as a site office, proposed at the composting facility.

3.5.6 Topographic and landform information

Value	Site Applicability and Details
Role of native vegetation in protecting water quality, waterways, and riparian ecosystems.	The removal of native vegetation to the minimum amount necessary will not have a negative impact on water quality. No waterways or riparian ecosystems are present on the project site.
Site within 30 metres of wetland or waterway	The project site falls within the Gippsland Lakes Ramsar site. No wetland values exist within the development footprint, however. The site is beside an existing and busy landfill facility
Prevent land degradation particularly where ground slopes more than 20 percent, on land that is subject to soil erosion or slippage, in harsh environments.	The subject land is flat. No Erosion Management Overlay applies.
Preventing adverse effects on groundwater quality.	The composting facility is part of a larger plan by East Gippsland Shire Council to remove green waste from the regional landfill site

[5] Department of Transport and Planning (Victoria)

Value	Site Applicability and Details
Manage native vegetation to preserve identified landscape values.	EGSC will attempt to abide by the management recommendations in the ESO (2.3.1) and intends to plant more native vegetation to enhance these landscape values
Native vegetation protected under the Aboriginal Heritage Act 2006.	The subject land and its native vegetation do not lie within a recognised Area of Cultural Heritage Sensitivity.

3.5.7 Avoid and minimize statement

Certain features of the site have constrained East Gippsland Shire Council's design of the proposed composting facility. Logistically, the site must be close to the existing regional landfill site. The proposed entry has been chosen to use existing low points within the site and road reserve and to limit the excavation required for internal works. Some removal of native planted vegetation is unavoidable but will be to the minimum extent necessary for access.

The one large tree on the property (a Gippsland Red-gum) will be retained. A large Swamp Gum on the roadside at the start of the slip lane has also been identified and the impact to the TPZ is 6% so this tree should be unaffected.

The main area of native grasses (adjacent to the eastern shelterbelt) has been avoided and the access track is largely through weed dominated pasture except for two small patches which have been mapped and accounted for in the offset calculation.

3.6 Past removal

EGSC has not applied to remove native vegetation on this land in the last five years.

3.7 Offset requirement

The offset requirement is summarised in Table 6. The DEECA NVR report is included in Appendix 6.

Table 6 Summary of general offset requirements

General offset amount	0.277 GHU
Vicinity	East Gippsland CMA or East Gippsland Shire
Minimum strategic biodiversity value score	0.352
Large trees	0

3.7.1 Offset statement

EGSC will purchase existing offset credits via a registered broker, or alternatively will use non-allocated offset credits already owned by EGSC.

These offsets are currently available for purchase on from the Native Vegetation Credit Register (NVCR). A report of available native vegetation credits is included in Appendix 7. EGSC must secure the offset from a third party or alternatively may utilise existing first party offsets if available. Recent trades on the NVCR indicate a unit price range of $92,000 to $170,000 per GHU in East Gippsland in 2023 (see Appendix 8)

however prices are subject to market fluctuations. Therefore, the estimated cost to purchase the required credits is $25,000 to $47,000 **excluding GST and brokerage fees**. This report does not constitute securing that offset.

3.8 Non-Applicable Planning Permit Application Requirements

Table 7 summarizes the application requirements for a planning permit to remove native vegetation and identifies which ones are not relevant to the current project, and hence have not been addressed in this report.

Table 7 Summary of planning permit application requirements relevant to this project

Number	Application Requirement	Applicable (Y/N)
1	Information about the native vegetation to be removed	Y
2	Topographic and land information relating to the native vegetation to be removed	Y
3	Recent, dated photographs of the native vegetation to be removed	Y
4	Details of any other native vegetation approved to be removed, or that was removed without the required approvals	na
5	An avoid and minimise statement	Y
6	A copy of the Property Vegetation Plan	na
7	Written defendable space statement	na
8	Native Vegetation Precinct Plan statement	na
9	Offset statement	Y
10	Site assessment report of the native vegetation to be removed	Y
11	Information about impacts to rare or threatened species habitat	Y

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5 APPENDICES

Appendix 1. Threatened flora and fauna species VBA records within 5km of the project site

Taxon ID	Scientific Name	Common Name	FFG Status	Last record	Likelihood of occurrence
FLORA					
500839	*Corybas fimbriatus*	Fringed Helmet-orchid	E	17/06/2007	Low
501120	*Echinopogon caespitosus* var. *caespitosus*	Bushy Hedgehog-grass	E	20/08/2006	Low
501253	*Eucalyptus bosistoana*	Coast Grey-box	E	3/08/2013	Low
502145	*Melaleuca armillaris* subsp. *armillaris*	Giant Honey-myrtle	E	26/11/2012	Low
502494	*Philydrum lanuginosum*	Woolly Waterlily	E	30/06/2011	Low
502795	*Pterostylis fischiorum*	Fisch's Greenhood	E	17/06/2007	Low
504754	*Eucalyptus polyanthemos* subsp. *longior*	Forest Red-box	E	11/11/2011	Low
FAUNA					
5136	*Ornithorhynchus anatinus*	Platypus	V	25/11/2021	Low
10045	*Lewinia pectoralis*	Lewin's Rail	V	2/11/2020	Low
10112	*Hydroprogne caspia*	Caspian Tern	V	12/04/2021	Low
10117	*Sternula albifrons*	Little Tern	CE	2/03/2019	Low
10118	*Sternula nereis*	Fairy Tern	CE	3/12/2003	Low
10137	*Pluvialis fulva*	Pacific Golden Plover	V	1/12/2017	Low
10154	*Tringa glareola*	Wood Sandpiper	E	18/11/2019	Low
10157	*Actitis hypoleucos*	Common Sandpiper	V	6/02/2006	Low
10158	*Tringa nebularia*	Common Greenshank	E	18/11/2019	Low
10159	*Tringa stagnatilis*	Marsh Sandpiper	E	16/02/2019	Low
10170	*Rostratula australis*	Australian Painted-snipe	CE	6/11/2006	Low
10185	*Egretta garzetta*	Little Egret	E	2/03/2019	Low
10186	*Ardea intermedia plumifera*	Plumed Egret	CE	23/04/2021	Low
10187	*Ardea alba modesta*	Eastern Great Egret	V	11/02/2019	Low
10197	*Botaurus poiciloptilus*	Australasian Bittern	CE	22/04/2020	Low
10212	*Spatula rhynchotis*	Australasian Shoveler	V	15/03/2021	Low
10214	*Stictonetta naevosa*	Freckled Duck	E	1/03/2019	Low
10215	*Aythya australis*	Hardhead	V	18/04/2021	Low
10216	*Oxyura australis*	Blue-billed Duck	V	15/03/2021	Low
10217	*Biziura lobata*	Musk Duck	V	18/04/2021	Low
10220	*Accipiter novaehollandiae*	Grey Goshawk	E	22/08/2021	Low
10225	*Hieraaetus morphnoides*	Little Eagle	V	12/04/2021	Low
10226	*Haliaeetus leucogaster*	White-bellied Sea-Eagle	E	15/03/2021	Low
10230	*Lophoictinia isura*	Square-tailed Kite	V	14/12/2017	Low
10238	*Falco subniger*	Black Falcon	CE	12/05/2008	Low
10248	*Ninox strenua*	Powerful Owl	V	29/07/2017	Low
10268	*Callocephalon fimbriatum*	Gang-gang Cockatoo	E	26/06/2020	Low
10334	*Hirundapus caudacutus*	White-throated Needletail	V	16/03/2020	Low

Taxon ID	Scientific Name	Common Name	FFG Status	Last record	Likelihood of occurrence
10598	*Grantiella picta*	Painted Honeyeater	V	30/11/2017	Low
13166	*Litoria aurea*	Green and Golden Bell Frog		13/01/2015	Low
4701	*Galaxiella pusilla*	Dwarf Galaxias	E	16/09/2021	Low
903041	*Nannoperca* sp. 1	Flinders Pygmy Perch	V	21/03/2012	Low

CE: Critically endangered **E:** Endangered **V:** Vulnerable

Note: Burrunan Dolphin was removed from this list

Appendix 2. EPBC species

Species ID	Scientific Name	Common Name	Threatened Category	Likelihood of occurrence
BIRDS				
847	*Numenius madagascariensis*	Eastern Curlew, Far Eastern Curlew	CE	Low
82338	*Anthochaera phrygia*	Regent Honeyeater	CE	Low
744	*Lathamus discolor*	Swift Parrot	CE	Low
747	*Neophema chrysogaster*	Orange-bellied Parrot	CE	Low
856	*Calidris ferruginea*	Curlew Sandpiper	CE	Low
1001	*Botaurus poiciloptilus*	Australasian Bittern	E	Low
77037	*Rostratula australis*	Australian Painted Snipe	E	Low
768	*Callocephalon fimbriatum*	Gang-gang Cockatoo	E	Low
67093	*Melanodryas cucullata cucullata*	South-eastern Hooded Robin, Hooded Robin (south-eastern)	E	Low
1060	*Macronectes giganteus*	Southern Giant-Petrel, Southern Giant Petrel	E	Low
89224	*Thalassarche cauta*	Shy Albatross	E	Low
855	*Calidris canutus*	Red Knot, Knot	E	Low
82950	*Sternula nereis nereis*	Australian Fairy Tern	V	Low
67062	*Climacteris picumnus victoriae*	Brown Treecreeper (south-eastern)	V	Low
525	*Pycnoptilus floccosus*	Pilotbird	V	Low
64445	*Pachyptila turtur subantarctica*	Fairy Prion (southern)	V	Low
59398	*Stagonopleura guttata*	Diamond Firetail	V	Low
929	*Falco hypoleucos*	Grey Falcon	V	Low
1061	*Macronectes halli*	Northern Giant Petrel	V	Low
682	*Hirundapus caudacutus*	White-throated Needletail	V	Low
877	*Charadrius leschenaultii*	Greater Sand Plover, Large Sand Plover	V	Low
470	*Grantiella picta*	Painted Honeyeater	V	Low
86380	*Limosa lapponica baueri*	Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit	V	Low
726	*Neophema chrysostoma*	Blue-winged Parrot	V	Low
67036	*Calyptorhynchus lathami lathami*	South-eastern Glossy Black-Cockatoo	V	Low
FISH				

Species ID	Scientific Name	Common Name	Threatened Category	Likelihood of occurrence
56790	*Galaxiella pusilla*	Eastern Dwarf Galaxias, Dwarf Galaxias	E	Low
26179	*Prototroctes maraena*	Australian Grayling	V	Low
AMPHIBIANS				
1873	*Uperoleia martini*	Martin's Toadlet	E	Low
1828	*Litoria raniformis*	Growling Grass Frog, Southern Bell Frog, Green and Golden Frog, Warty Swamp Frog, Golden Bell Frog	V	Low
1973	*Heleioporus australiacus*	Giant Burrowing Frog	V	Low
1870	*Litoria aurea*	Green and Golden Bell Frog	V	Low
MAMMALS				
254	*Petauroides volans*	Greater Glider (southern and central)	E	Low
75184	*Dasyurus maculatus maculatus* (SE mainland population)	Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (SE mainland population)	E	Low
87600	*Petaurus australis australis*	Yellow-bellied Glider (south-eastern)	V	Low
96	*Pseudomys novaehollandiae*	New Holland Mouse, Pookila	V	Low
186	*Pteropus poliocephalus*	Grey-headed Flying-fox	V	Low
PLANTS				
87152	*Commersonia prostrata*	Dwarf Kerrawang	E	Low
11896	*Thelymitra epipactoides*	Metallic Sun-orchid	E	Low
64886	*Dianella amoena*	Matted Flax-lily	E	Low
15202	*Thesium australe*	Austral Toadflax, Toadflax	V	Low
19215	*Amphibromus fluitans*	River Swamp Wallaby-grass, Floating Swamp Wallaby-grass	V	Low
64976	*Senecio psilocarpus*	Swamp Fireweed, Smooth-fruited Groundsel	V	Low
12149	*Dodonaea procumbens*	Trailing Hop-bush	V	Low
76215	*Xerochrysum palustre*	Swamp Everlasting, Swamp Paper Daisy	V	Low
13910	*Glycine latrobeana*	Clover Glycine, Purple Clover	V	Low
21883	*Acacia caerulescens*	Limestone Blue Wattle, Buchan Blue, Buchan Blue Wattle	V	Low
2119	*Caladenia tessellata*	Thick-lipped Spider-orchid, Daddy Long-legs	V	Low
56510	*Pterostylis chlorogramma*	Green-striped Greenhood	V	Low
REPTILES				

Species ID	Scientific Name	Common Name	Threatened Category	Likelihood of occurrence
84053	*Lissolepis coventryi*	Swamp Skink, Eastern Mourning Skink	E	Low
1649	*Delma impar*	Striped Legless Lizard, Striped Snake-lizard	V	Low

Appendix 3. Flora species recorded at the proposed composting facility site

Scientific Name	Common Name	Weed	CaLP Act status	1	2	3 & 4	5&6	7&8	9	10
Acacia implexa	Lightwood			x	x				x	x
Acacia longifolia subsp. *longifolia*	Coast Wattle			x	x				x	
Acacia mearnsii	Black Wattle				x					x
Acetosella vulgaris	Sheep Sorrel	Yes			x					
Agapanthus sp.	Agapanthus	Yes								x
Allocasuarina littoralis	Black Sheoak			x	x				x	
Arctotheca calendula	Cape Weed	Yes			x					
Asparagus asparagoides	Bridal Creeper	Yes[a]	R	x						
Asperula conferta	Prickly Woodruff									x
Austrostipa rudis subsp. *rudis*	Veined Spear-grass			x	x				x	x
Austrostipa sp.	Spear-grass						x			
Avena fatua	Wild Oat	Yes								x
Bromus hordeaceus	Soft Brome	Yes					x			
Brassica sp.	Wild Turnip	Yes		x				x		x
Briza maxima	Large Quaking-grass	Yes								x
Bursaria spinosa	Sweet Bursaria			x	x				x	
Callistemon citrinus	Crimson Bottlebrush	#			x					x
Callistemon sp.										x
Carex sp.	Sedge			x					x	
Cenchrus clandestinum	Kikuyu	Yes		x			x			x
Chloris truncata	Windmill-grass							x		
Cirsium vulgare	Spear Thistle	Yes	RC			x		x		
Coprosma quadrifida	Prickly Currant-bush			x					x	
Cynodon dactylon	Couch	Yes			x	x	x	x		
Cyperus eragrostis	Nutgrass	Yes					x			x
Dactylis glomerata	Cocksfoot	Yes		x	x					x

Scientific Name	Common Name	Weed	CaLP Act status	1	2	3 & 4	5&6	7&8	9	10
Dichondra repens	Kidney-weed							x	x	x
Dysphania pumilio	Clammy Goosefoot				x			x		
Echinopogon ovatus	Hedgehog-grass				x					
Ehrharta erecta	Panic Veldt-grass	Yes		x						x
Einadia nutans	Nodding Saltbush			x	x				x	x
Elaeochaeris sp.	Spike-rush					x				
Eleusine tristachya	American Crows-foot Grass	Yes			x	x	x			
Eragrostis cilianensis	Stinkgrass	Yes						x		
Eragrostis curvula	African Love-grass	Yes			x			x		x
Erigeron bonariensis	Flaxleaf Fleabane	Yes						x		x
Eucalyptus globulus subsp. *pseudoglobulus*	Gippsland Blue-gum	#			x					
Eucalyptus obliqua	Messmate Stringybark			x						
Eucalyptus ovata	Swamp Gum									x
Eucalyptus pauciflora	Snow Gum	#		x	x					
Eucalyptus polyanthemos subsp. *polyanthemos*	Red Box			x	x				x	x
Eucalyptus sideroxylon	Red Ironbark	#		x						
Eucalyptus sp.	Eucalypt								x	
Eucalyptus tereticornis subsp. *mediana*	Gippsland Red-gum			x	x					x
Exocarpos cupressiformis	Cherry Ballart			x					x	
Fraxinus sp.	Ash	Yes								x
Gazania sp.	African Daisy	Yes								x
Hakea laurina	Pincushion Hakea	NN								x
Hakea salicifolia	Willow-leaf Hakea	NN								x
Holcus lanatus	Yorkshire Fog	Yes		x	x	x	x			x
Hypochaeris radicata	Flatweed	Yes		x	x	x		x		x
Imperata cylindrica	Blady-grass									x
Juncus sp.	Rush					x	x			

Scientific Name	Common Name	Weed	CaLP Act status	1	2	3 & 4	5&6	7&8	9	10
Juncus subsecundus	Finger Rush				x		x	x		
Kunzea sp.	Burgan			x	x				x	x
Lachnagrostis filiformis	Common Blown-grass									x
Lepidium africanum	Common Peppercress	Yes								x
Leptospermum laevigatum	Coast Tea-tree									x
Lolium perenne	Perennial Rye-grass	Yes					x			
Lomandra filiformis	Spiny-headed Mat-rush									x
Lotus subbiflorus	Hairy Bird's-foot Trefoil	Yes					x	x		
Lycium ferocissimum	African Box-thorn	Yes	RC	x						
Lysimachia arvensis	Scarlet Pimpernel	Yes						x		
Malva parviflora	Small-flowered Mallow	Yes						x		
Melaleuca diosmifolia	Green Honey Myrtle	NN								x
Melaleuca ericifolia	Swamp Paperbark			x						x
Melaleuca hypericifolia	Hillock Bush	NN								x
Melaleuca parvistaminea	Rough-barked Honey-myrtle				x				x	x
Microlaena stipoides var. *stipoides*	Weeping Grass			x	x		x	x		
Oxalis corniculata	Yellow Wood-sorrel	Yes			x			x		
Panicum effusum	Hairy Panic				x	x		x	x	
Paspalum dilatatum	Paspalum	Yes			x			x		x
Phalaris aquatica	Toowoomba Canary-grass	Yes		x	x					x
Pittosporum undulatum	Sweet Pittosporum	#		x					x	
Plantago lanceolata	Ribwort	Yes								x
Poa sieberiana	Blue Tussock-grass									x
Portulaca oleracea	Pigweed	Yes								x
Rubus fruticosus	Blackberry	Yes	RC							x
Rumex brownii	Slender Dock						x	x		
Rytidosperma caespitosum	Wallaby-grass			x	x				x	x
Rytidosperma setaceum var. *setaceum*	Bristly Wallaby-grass				x					x

Scientific Name	Common Name	Weed	CaLP Act status	1	2	3 & 4	5&6	7&8	9	10
Setaria spp.	Pigeon Grass	Yes			x		x			
Solanum nigrum s.s.	Black Nightshade	Yes		x			x			
Solanum sp.	Nightshade	Yes					x			
Sonchus asper	Rough Sow-thistle	Yes				x				x
Sonchus oleraceus	Common Sow-thistle	Yes		x	x					x
Sporobolus africanus	Rat-tail Grass	Yes		x	x					
Themeda triandra	Kangaroo Grass			x					x	x
Trifolium repens var. *repens*	White Clover	Yes					x			
Vulpia myuros	Rat's-tail Fescue	Yes			x			x		

indigenous species but not characteristic of the Plains Grassy Woodland EVC

RC = Regionally controlled. These invasive plants are usually widespread in a region. To prevent their spread, ongoing control measures are required. Landowners must take all reasonable steps to prevent the growth and spread of regionally controlled weeds on their land.

R = Restricted: This category includes plants that pose an unacceptable risk of spreading in this state and are a serious threat to another state or territory of Australia.

NN = not native to Victoria

Appendix 4. Habitat Hectare assessment sheets

Vegetation Quality Field Assessment Sheet

Version 1.3 - October 2004

Department of Sustainability and Environment

Site Name/No. B'dale Tip Site (1) Location Johnson Western Shelterbelt Date

Assessor(s) MD & TF Map Name/No. Site 5 AMG 554382 5806754

Tenure EGSL EVC PGW Bioregion GP

'Site Condition Score'

Large Trees

Score 0

Category & Description	*% Canopy Health** > 70%	30-70%	< 30%
None present	0	0	0
> 0 to 20% of the benchmark number of large trees/ha	3	2	1
> 20% to 40% of the benchmark number of large trees/ha	4	3	2
> 40% to 70% of the benchmark number of large trees/ha	6	5	4
> 70% to 100% of the benchmark number of large trees/ha	8	7	6
≥ the benchmark number of large trees/ha	10	9	8

Large trees are defined by diameter at breast height (dbh) - see EVC benchmark.

* Estimate proportion of an expected healthy canopy cover that is present (i.e. not missing due to tree death or decline, or mistletoe infestation).

Tree Canopy Cover

Score 5

Category & Description	*% Canopy Health** > 70%	30-70%	< 30%
< 10% of benchmark cover	0	0	0
< 50% or > 150% of benchmark cover	3	2	1
≥ 50% or ≤ 150% of benchmark cover	5	4	3

Tree canopy is defined as those canopy tree species reaching ≥ 80% of mature height - see EVC benchmark description.

* Estimate proportion of an expected healthy canopy cover that is present (i.e. not missing due to tree death or decline, or mistletoe infestation).

Lack of Weeds

Score 0

Category & Description	*'high threat' weeds** None	≤ 50%	> 50%
> 50% cover of weeds	4	2	0
25 - 50% cover of weeds	7	6	4
5 - 25% cover of weeds	11	9	7
< 5% cover of weeds**	15	13	11

* proportion of weed cover due to 'high threat' weeds - see EVC benchmark for guide.

'High threat' weed species are defined as those introduced species (including non-indigenous 'natives') with the ability to out-compete and substantially reduce one or more indigenous life forms in the longer term assuming on-going current site characteristics and disturbance regime.

The EVC benchmark lists typical weed species for the EVC in the bioregion and provides an estimate of their 'invasiveness' and 'impact'. In general, those weed species considered to have a *high impact* are considered *high threat* regardless of their invasiveness.

** if total weed cover is negligible (<1%) and high threat weed species are present then score '13'.

Understorey Life forms

LF Code from EVC benchmark	# spp observed / Benchmark spp.	% cover observed / Benchmark % cover	Present (✓)	Modified (✓)
IT	0 / 4	0 / 5	X	
T	0 / 1	0 / 5	X	
MS	4 / 2	25 / 10	✓	
SS	2 / 1	5 / 1	✓	
PS	1 / 1	1 / 1	✓	
LH	0 / 1	0 / 5	X	
MH	0 / 10	0 / 20	X	
SH	0 / 3	0 / 5	X	
LTG	0 / 2	0 / 5	X	
LNG	0 / 1	0 / 10	X	
MTG	1 / 9	10 / 35	✓	✓
MNG	2 / 2	10 / 10	✓	X
BIL	/	0 / 10	X	
	/	/	5/13	
	/	/		
	/	/		

Present

For life forms with benchmark cover of < 10%, considered 'present' if
- any specimens are observed.

For life forms with benchmark cover of ≥ 10%, considered 'present' if
- the life form occupies at least 10% of benchmark cover.

Modified (apply only where life form is 'present')

For life forms with benchmark cover of <10%, then considered substantially 'modified' if the life form has either:
- < 50% of the benchmark species diversity; or
- no reproductively-mature specimens are observed.

For life forms with benchmark cover of ≥ 10%, then considered substantially 'modified' if the life form has either:
- < 50% of benchmark cover; or
- < 50% of benchmark species diversity; or
- ≥ 50% of benchmark cover due largely to immature canopy specimens but the cover of reproductively-mature specimens is < 10% of the benchmark cover.

Understorey

Score 5

Category & Description		
All strata and lifeforms effectively absent		0
Up to 50% of life forms present		(5)
≥ 50% to 90% of lifeforms present	• of those present, ≥ 50% substantially modified	10
	• of those present, < 50% substantially modified	15
≥ 90% of lifeforms present	• of those present, ≥ 50% substantially modified	15
	• of those present, < 50% substantially modified	20
	• of those present, none substantially modified	25

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Vegetation Quality Field Assessment Sheet

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Recruitment

Score: 6

Category & Description			High diversity*°	Low diversity*°
No evidence of a recruitment 'cohort'+	within EVC not driven by episodic events		0	0
	within EVC driven by episodic events^	clear evidence of appropriate episodic event	0	0
		no clear evidence of appropriate episodic event	5	5
Evidence of at least one recruitment 'cohort' in at least one life-form	proportion of native woody species present that have adequate recruitment°	< 30%	3	1
		30 - 70%	6	3
		≥ 70%	10	5

+ 'cohort' refers to a group of woody plants established in a single episode (can include suppressed canopy species individuals).
^ refer to EVC benchmark for clarification.
° treat multiple eucalypt canopy species as one species.
* high diversity defined as ≥ 50% of benchmark woody species diversity.

Species Recruitment

Woody species recorded in habitat zone	Adequate Recruitment
Eucalypt canopy (combined species)	✗
Hela Eucalyptus	✓
Black Wattle	✓
Paperbark	✗
Purple Coprosma	✗
Elaeodia	✗
	2/6
number of woody spp. in EVC benchmark (SS and taller)	

Logs

Score: 2

Category & Description	Large logs present*	Large logs absent#
< 10% of benchmark length	0	0
< 50% of benchmark length	3	2
≥ 50% of benchmark length	5	4

Large logs defined as those with diameter ≥ 0.5 of benchmark large tree dbh.
* present if large log length is ≥ 25% of EVC benchmark log length.
# absent if large log length is < 25% of EVC benchmark log length.

Organic Litter

Score: 5

Category & Description	Dominated by native organic litter	Dominated by non-native organic litter
< 10% of benchmark cover	0	0
< 50% or > 150% of benchmark cover	3	2
≥ 50% or ≤ 150% of benchmark cover	5	4

'Landscape Context Score'

Score: 1

Patch Size

Category & Description	
< 2 ha	1
Between 2 and 5 ha	2
Between 5 and 10 ha	4
Between 10 and 20 ha	6
≥ 20 ha, but 'significantly disturbed'*	8
≥ 20 ha, but not 'significantly disturbed'*	10

* 'significantly disturbed' defined as per RFA 'Old Growth' analyses eg. roading, coupes, grazing etc. – effectively most patches within fragmented landscapes.

Distance to Core Area

Score: 1

Distance	Core Area not significantly disturbed*	Core Area significantly disturbed*
> 5 km	0	0
1 to 5 km	2	1
< 1 km	4	3
contiguous	5	4

* defined as per RFA 'Old Growth' analyses.

Neighbourhood

Score: 1.2

Radius from site	% Native vegetation *	Weighting	
100 m	40	0.03	1.2
1 km	20	0.04	0.8
5 km	40	0.03	1.2
subtract 2 if the neighbourhood is 'significantly disturbed'			3.2
Add Values and 'round-off'			1.2

* to nearest 20%.
Multiply % native vegetation x Weighting for each radius from the zone (eg. 40% x 0.03 = 1.2); then add values to obtain final Neighbourhood Value.

Final Habitat Score

	'Site Condition Score'							'Landscape Context Score'			
Component	Large Trees	Tree Canopy Cover	Lack of Weeds	Understorey	Recruitment	Organic Litter	Logs	Patch Size	Neighbourhood	Distance to Core Area	Total
Score	0	5	0	5	6	5	2	1	1.2	1.0	26.2
											100

Conclusion Score = 0.262

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Vegetation Quality Field Assessment Sheet

Version 1.3 - October 2004

Department of Sustainability and Environment

Site Name/No. Bdale Tip Site 2 Location Idwal Rd Date 15/5/06

Assessor(s) MQB TF Map Name/No. Eastern Shelterbelt AMG 554516 5806741

Tenure EGSC EVC PGW Bioregion GP

'Site Condition Score'

Large Trees — Score: 0

Category & Description	% Canopy Health*		
	> 70%	30-70%	< 30%
None present	0	0	0
> 0 to 20% of the benchmark number of large trees/ha	3	2	1
> 20% to 40% of the benchmark number of large trees/ha	4	3	2
> 40% to 70% of the benchmark number of large trees/ha	6	5	4
> 70% to 100% of the benchmark number of large trees/ha	8	7	6
≥ the benchmark number of large trees/ha	10	9	8

Large trees are defined by diameter at breast height (dbh) - see EVC benchmark.

* Estimate proportion of an expected healthy canopy cover that is present (i.e. not missing due to tree death or decline, or mistletoe infestation).

Tree Canopy Cover — Score: 4

Category & Description	% Canopy Health *		
	> 70%	30-70%	< 30%
< 10% of benchmark cover	0	0	0
< 50% or > 150% of benchmark cover	3	2	1
≥ 50% or ≤ 150% of benchmark cover	5	4	3

Tree canopy is defined as those canopy tree species reaching ≥ 80% of mature height - see EVC benchmark description.

* Estimate proportion of an expected healthy canopy cover that is present (i.e. not missing due to tree death or decline, or mistletoe infestation).

Lack of Weeds — Score: 4

Category & Description	'high threat' weeds*		
	None	≤ 50%	> 50%
> 50% cover of weeds	4	2	0
25 - 50% cover of weeds	7	6	4
5 - 25% cover of weeds	11	9	7
< 5% cover of weeds**	15	13	11

* proportion of weed cover due to 'high threat' weeds - see EVC benchmark for guide.

'High threat' weed species are defined as those introduced species (including non-indigenous 'natives') with the ability to out-compete and substantially reduce one or more indigenous life forms in the longer term assuming on-going current site characteristics and disturbance regime.

The EVC benchmark lists typical weed species for the EVC in the bioregion and provides an estimate of their 'invasiveness' and 'impact'. In general, those weed species considered to have a *high impact* are considered *high threat* regardless of their invasiveness.

** if total weed cover is negligible (<1%) and high threat weed species are present then score '13'.

Understorey Life forms

LF Code from EVC benchmark	# spp observed / Benchmark spp.	% cover observed / Benchmark % cover	Present (✓)	Modified (✓)
IT	0/4	0/5	X	
T	0/1	0/5	X	
MS	8/2	30/10	✓	X
SC	3/1	5/1	✓	X
PS	1/1	1/1	✓	X
LH	0/1	0/5	0	
MH	0/10	0/20	0	
SH	0/3	0/5	0	
LTS	1/2	3/5	✓	X
LNS	0/1	0/10	X	✓
MTS	4/9	20/35	✓	✓
MNS	2/2	10/10	✓	X
BIL	/1	0/10	X	
	/	/		
	/	/		
	/	/		6/13

1/6

Present

For life forms with benchmark cover of < 10%, considered 'present' if
- any specimens are observed.

For life forms with benchmark cover of ≥ 10%, considered 'present' if
- the life form occupies at least 10% of benchmark cover.

Modified (apply only where life form is 'present')

For life forms with benchmark cover of <10%, then considered substantially 'modified' if the life form has either:
- < 50% of the benchmark species diversity; or
- no reproductively-mature specimens are observed.

For life forms with benchmark cover of ≥ 10%, then considered substantially 'modified' if the life form has either:
- < 50% of benchmark cover; or
- < 50% of benchmark species diversity; or
- ≥ 50% of benchmark cover due largely to immature canopy specimens but the cover of reproductively-mature specimens is < 10% of the benchmark cover.

Understorey — Score: 5

Category & Description		
All strata and lifeforms effectively absent		0
Up to 50% of life forms present		5
≥ 50% to 90% of lifeforms present	• of those present, ≥ 50% substantially modified	10
	• of those present, < 50% substantially modified	15
≥ 90% of lifeforms present	• of those present, ≥ 50% substantially modified	15
	• of those present, < 50% substantially modified	20
	• of those present, none substantially modified	25

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Recruitment

Score: 6

Category & Description			High diversity*°	Low diversity*°
No evidence of a recruitment 'cohort'+	within EVC not driven by episodic events		0	0
	within EVC driven by episodic events^	clear evidence of appropriate episodic event	0	0
		no clear evidence of appropriate episodic event	5	5
Evidence of at least one recruitment 'cohort' in at least one life-form	proportion of native woody species present that have adequate recruitment°	< 30%	3	1
		30 - 70%	6	3
		≥ 70%	10	5

+ 'cohort' refers to a group of woody plants established in a single episode (can include suppressed canopy species individuals).
^ refer to EVC benchmark for clarification.
° treat multiple eucalypt canopy species as one species.
* high diversity defined as ≥ 50% of benchmark woody species diversity.

Species Recruitment

Woody species recorded in habitat zone	Adequate Recruitment
Eucalypt canopy (combined species)	✓
Callistemon	
Lightwood	
Coast Wattle	✓
Burgan	
Mallee Banksia	✓
Eucalypt	
	3/7
	42%
number of woody spp. in EVC benchmark (SS and taller)	

Logs

Score: 2

Category & Description	Large logs present*	Large logs absent#
< 10% of benchmark length	0	0
< 50% of benchmark length	3	2
≥ 50% of benchmark length	5	4

Large logs defined as those with diameter ≥ 0.5 of benchmark large tree dbh.
* present if large log length is ≥ 25% of EVC benchmark log length.
# absent if large log length is < 25% of EVC benchmark log length.

Organic Litter

Score: 5

Category & Description	Dominated by native organic litter	Dominated by non-native organic litter
< 10% of benchmark cover	0	0
< 50% or > 150% of benchmark cover	3	2
≥ 50% or ≤ 150% of benchmark cover	5	4

'Landscape Context Score'

Score: 1

Patch Size

Score: 4

Category & Description	
< 2 ha	1
Between 2 and 5 ha	2
Between 5 and 10 ha	4
Between 10 and 20 ha	6
≥ 20 ha, but 'significantly disturbed'*	8
≥ 20 ha, but not 'significantly disturbed'*	10

* 'significantly disturbed' defined as per RFA 'Old Growth' analyses eg. roading, coupes, grazing etc. – effectively most patches within fragmented landscapes.

Distance to Core Area

Score: 1

Distance	Core Area not significantly disturbed*	Core Area significantly disturbed*
> 5 km	0	0
1 to 5 km	2	1
< 1 km	4	3
contiguous	5	4

* defined as per RFA 'Old Growth' analyses.

Neighbourhood

Score: 1.2

Radius from site	% Native vegetation *	Weighting	
100 m	40	0.03	1.2
1 km	20	0.04	0.8
5 km	40	0.03	1.2
subtract 2 if the neighbourhood is 'significantly disturbed'			3.2
Add Values and 'round-off'			1.2

* to nearest 20%.
Multiply % native vegetation x Weighting for each radius from the zone (eg. 40% x 0.03 = 1.2); then add values to obtain final Neighbourhood Value.

Final Habitat Score

Component	'Site Condition Score'							'Landscape Context Score'			Total
	Large Trees	Tree Canopy Cover	Lack of Weeds	Understorey	Recruitment	Organic Litter	Logs	Patch Size	Neighbourhood	Distance to Core Area	100
Score	0	4	4	5	6	5	2	4	1.2	1	32.2

Condition Score = 0.322

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Vegetation Quality Field Assessment Sheet

Version 1.3 - October 2004

Department of Sustainability and Environment

Site Name/No. Ndale Tip Site (4) (3) Location Johnsonds - Building Site Date 10/1/25

Assessor(s) MDB TF Map Name/No. AMG 554397 5806927

Tenure EPSC EVC PGW Bioregion Gipps Plain

'Site Condition Score'

Large Trees — Score: 0

Category & Description	% Canopy Health*		
	> 70%	30-70%	< 30%
None present	0	0	0
> 0 to 20% of the benchmark number of large trees/ha	3	2	1
> 20% to 40% of the benchmark number of large trees/ha	4	3	2
> 40% to 70% of the benchmark number of large trees/ha	6	5	4
> 70% to 100% of the benchmark number of large trees/ha	8	7	6
≥ the benchmark number of large trees/ha	10	9	8

Large trees are defined by diameter at breast height (dbh) - see EVC benchmark.

* Estimate proportion of an expected healthy canopy cover that is present (i.e. not missing due to tree death or decline, or mistletoe infestation).

Tree Canopy Cover — Score: 0

Category & Description	% Canopy Health *		
	> 70%	30-70%	< 30%
< 10% of benchmark cover	0	0	0
< 50% or > 150% of benchmark cover	3	2	1
≥ 50% or ≤ 150% of benchmark cover	5	4	3

Tree canopy is defined as those canopy tree species reaching ≥ 80% of mature height - see EVC benchmark description.

* Estimate proportion of an expected healthy canopy cover that is present (i.e. not missing due to tree death or decline, or mistletoe infestation).

Lack of Weeds — Score: 0

Category & Description	'high threat' weeds*		
	None	≤ 50%	> 50%
> 50% cover of weeds	4	2	(0)
25 - 50% cover of weeds	7	6	4
5 - 25% cover of weeds	11	9	7
< 5% cover of weeds**	15	13	11

* proportion of weed cover due to 'high threat' weeds - see EVC benchmark for guide.

'High threat' weed species are defined as those introduced species (including non-indigenous 'natives') with the ability to out-compete and substantially reduce one or more indigenous life forms in the longer term assuming on-going current site characteristics and disturbance regime.

The EVC benchmark lists typical weed species for the EVC in the bioregion and provides an estimate of their 'invasiveness' and 'impact'. In general, those weed species considered to have a *high impact* are considered *high threat* regardless of their invasiveness.

** If total weed cover is negligible (<1%) and high threat weed species are present then score '13'.

Understorey Life forms

LF Code from EVC benchmark	# spp observed / Benchmark spp.	% cover observed / Benchmark % cover	Present (✓)	Modified (✓)
LT	0 / 1	0 / 5	X	
T	0 / 1	0 / 5	X	
MS	0 / 2	0 / 10	X	
SS	0 / 1	0 / 1	✓	
PS	0 / 1	0 / 1	X	
LH	1 / 1	<1 / 5	✓	X
MH	0 / 10	0 / 30	X	
SH	0 / 3	0 / 5	X	
LTG	1 / 2	5 / 5	✓	X
MG	0 / 1	0 / 10	X	
DTG	2 / 4	25 / 35	✓	✓
MG	1 / 2	10 / 10	✓	X
D/L	/	0 / 10	X	
	/	/		
	/	/		
	/	/		
		4 / 13		1/4

Present

For life forms with benchmark cover of < 10%, considered 'present' if
- any specimens are observed.

For life forms with benchmark cover of ≥ 10%, considered 'present' if
- the life form occupies at least 10% of benchmark cover.

Modified (apply only where life form is 'present')

For life forms with benchmark cover of <10%, then considered substantially 'modified' if the life form has either:
- < 50% of the benchmark species diversity; or
- no reproductively-mature specimens are observed.

For life forms with benchmark cover of ≥ 10%, then considered substantially 'modified' if the life form has either:
- < 50% of benchmark cover; or
- < 50% of benchmark species diversity; or
- ≥ 50% of benchmark cover due largely to immature canopy specimens but the cover of reproductively-mature specimens is < 10% of the benchmark cover.

Understorey — Score: 5

Category & Description		
All strata and lifeforms effectively absent		0
Up to 50% of life forms present		(5)
≥ 50% to 90% of lifeforms present	• of those present, ≥ 50% substantially modified	10
	• of those present, < 50% substantially modified	15
≥ 90% of lifeforms present	• of those present, ≥ 50% substantially modified	15
	• of those present, < 50% substantially modified	20
	• of those present, none substantially modified	25

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Recruitment

Score: 0

Category & Description			High diversity*°	Low diversity*°
No evidence of a recruitment 'cohort'+	within EVC not driven by episodic events		0	0
	within EVC driven by episodic events^	clear evidence of appropriate episodic event	0	0
		no clear evidence of appropriate episodic event	5	5
Evidence of at least one recruitment 'cohort' in at least one life-form	proportion of native woody species present that have adequate recruitment°	< 30%	3	1
		30 - 70%	6	3
		≥ 70%	10	5

+ 'cohort' refers to a group of woody plants established in a single episode (can include suppressed canopy species individuals).
^ refer to EVC benchmark for clarification.
° treat multiple eucalypt canopy species as one species.
* high diversity defined as ≥ 50% of benchmark woody species diversity.

Species Recruitment

Woody species recorded in habitat zone	Adequate Recruitment (✓)
Eucalypt canopy (combined species)	
number of woody spp. in EVC benchmark (SS and taller)	

Logs

Score: 0

Category & Description	Large logs present*	Large logs absent#
< 10% of benchmark length	0	0
< 50% of benchmark length	3	2
≥ 50% of benchmark length	5	4

Large logs defined as those with diameter ≥ 0.5 of benchmark large tree dbh.
* present if large log length is ≥ 25% of EVC benchmark log length.
# absent if large log length is < 25% of EVC benchmark log length.

Organic Litter

Score: 2

Category & Description	Dominated by native organic litter	Dominated by non-native organic litter
< 10% of benchmark cover	0	0
< 50% or > 150% of benchmark cover	3	2
≥ 50% or ≤ 150% of benchmark cover	5	4

'Landscape Context Score'

Patch Size

Score: 1

Category & Description	
< 2 ha	1
Between 2 and 5 ha	2
Between 5 and 10 ha	4
Between 10 and 20 ha	6
≥ 20 ha, but 'significantly disturbed'*	8
≥ 20 ha, but not 'significantly disturbed'*	10

* 'significantly disturbed' defined as per RFA 'Old Growth' analyses eg. roading, coupes, grazing etc. – effectively most patches within fragmented landscapes.

Distance to Core Area

Score: 1

Distance	Core Area not significantly disturbed*	Core Area significantly disturbed*
> 5 km	0	0
1 to 5 km	2	1
< 1 km	4	3
contiguous	5	4

* defined as per RFA 'Old Growth' analyses.

Neighbourhood

Score: 0.6

Radius from site	% Native vegetation *	Weighting	
100 m	20	0.03	0.6
1 km	20	0.04	0.8
5 km	40	0.03	1.2
subtract 2 if the neighbourhood is 'significantly disturbed'			2.6
		Add Values and 'round-off'	0.6

* to nearest 20%.
Multiply % native vegetation x Weighting for each radius from the zone (eg. 40% x 0.03 = 1.2); then add values to obtain final Neighbourhood Value.

Final Habitat Score

	'Site Condition Score'							'Landscape Context Score'			
Component	Large Trees	Tree Canopy Cover	Lack of Weeds	Understorey	Recruitment	Organic Litter	Logs	Patch Size	Neighbourhood	Distance to Core Area	Total
											100
Score	0	0	0	5	0	2	0	1	0.61	1	9.6

Habitat Score = 0.096

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Vegetation Quality Field Assessment Sheet

Version 1.3 - October 2004

Department of Sustainability and Environment

Site Name/No. Bdale Tip Stb Location Tolmie Rd Date 10/11/24

Assessor(s) MDB TF Stb Map Name/No. East Paddock AMG E 554535 N 5806709

Tenure EGSC EVC PGW Bioregion GPlain

'Site Condition Score'

Large Trees — Score: 0

Category & Description	% Canopy Health* > 70%	30-70%	< 30%
None present	0	0	0
> 0 to 20% of the benchmark number of large trees/ha	3	2	1
> 20% to 40% of the benchmark number of large trees/ha	4	3	2
> 40% to 70% of the benchmark number of large trees/ha	6	5	4
> 70% to 100% of the benchmark number of large trees/ha	8	7	6
≥ the benchmark number of large trees/ha	10	9	8

Large trees are defined by diameter at breast height (dbh) - see EVC benchmark.

* Estimate proportion of an expected healthy canopy cover that is present (i.e. not missing due to tree death or decline, or mistletoe infestation).

Tree Canopy Cover — Score: 0

Category & Description	% Canopy Health * > 70%	30-70%	< 30%
< 10% of benchmark cover	0	0	0
< 50% or > 150% of benchmark cover	3	2	1
≥ 50% or ≤ 150% of benchmark cover	5	4	3

Tree canopy is defined as those canopy tree species reaching ≥ 80% of mature height - see EVC benchmark description.

* Estimate proportion of an expected healthy canopy cover that is present (i.e. not missing due to tree death or decline, or mistletoe infestation).

Lack of Weeds — Score: 4

Category & Description	'high threat' weeds* None	≤ 50%	> 50%
> 50% cover of weeds	4	2	0
25 - 50% cover of weeds	7	6	4
5 - 25% cover of weeds	11	9	7
< 5% cover of weeds**	15	13	11

* proportion of weed cover due to 'high threat' weeds - see EVC benchmark for guide.

'High threat' weed species are defined as those introduced species (including non-indigenous 'natives') with the ability to out-compete and substantially reduce one or more indigenous life forms in the longer term assuming on-going current site characteristics and disturbance regime.

The EVC benchmark lists typical weed species for the EVC in the bioregion and provides an estimate of their 'invasiveness' and 'impact'. In general, those weed species considered to have a *high impact* are considered *high threat* regardless of their invasiveness.

** if total weed cover is negligible (<1%) and high threat weed species are present then score '13'.

Understorey Life forms

LF Code from EVC benchmark	# spp observed / Benchmark spp.	% cover observed / Benchmark % cover	Present (✓)	Modified (✓)
LT	0/0	0/5	X	
T	0/1	0/5	X	
MS	0/2	0/10	X	
SS	0/1	0/1	X	
PS	0/1	0/1	X	
LH	0/1	0/5	X	
MH	1/10	1/20	X	
SH	1/3	1/5	✓	✓
LYG	1/2	5/5	✓	X
LVG	0/1	0/10	X	
MTG	2/9	25/35	✓	✓
MVG	1/2	10/10	✓	X
BIL	/1	0/10		
	/1	/1		
	/1	/1	4	13
	/1	/1		

2/4

Present

For life forms with benchmark cover of < 10%, considered 'present' if
- any specimens are observed.

For life forms with benchmark cover of ≥ 10%, considered 'present' if
- the life form occupies at least 10% of benchmark cover.

Modified (apply only where life form is 'present')

For life forms with benchmark cover of <10%, then considered substantially 'modified' if the life form has either:
- < 50% of the benchmark species diversity; or
- no reproductively-mature specimens are observed.

For life forms with benchmark cover of ≥ 10%, then considered substantially 'modified' if the life form has either:
- < 50% of benchmark cover; or
- < 50% of benchmark species diversity; or
- ≥ 50% of benchmark cover due largely to immature canopy specimens but the cover of reproductively-mature specimens is < 10% of the benchmark cover.

Understorey — Score: 5

Category & Description		
All strata and lifeforms effectively absent		0
Up to 50% of life forms present		5
≥ 50% to 90% of lifeforms present	• of those present, ≥ 50% substantially modified	10
	• of those present, < 50% substantially modified	15
≥ 90% of lifeforms present	• of those present, ≥ 50% substantially modified	15
	• of those present, < 50% substantially modified	20
	• of those present, none substantially modified	25

Victoria The Place To Be

Vegetation Quality Field Assessment Sheet

Version 1.3 October 2004

Recruitment

Score: 0

Category & Description			High diversity*°	Low diversity*°
No evidence of a recruitment 'cohort'+	within EVC not driven by episodic events		0	0
	within EVC driven by episodic events^	clear evidence of appropriate episodic event	0	0
		no clear evidence of appropriate episodic event	5	5
Evidence of at least one recruitment 'cohort' in at least one life-form	proportion of native woody species present that have adequate recruitment°	< 30%	3	1
		30 - 70%	6	3
		≥ 70%	10	5

+ 'cohort' refers to a group of woody plants established in a single episode (can include suppressed canopy species individuals).
^ refer to EVC benchmark for clarification.
° treat multiple eucalypt canopy species as one species.
* high diversity defined as ≥ 50% of benchmark woody species diversity.

Species Recruitment

Woody species recorded in habitat zone	Adequate Recruitment (✓)
Eucalypt canopy (combined species)	
number of woody spp. in EVC benchmark (SS and taller)	

Logs

Score: 0

Category & Description	Large logs present*	Large logs absent#
< 10% of benchmark length	0	0
< 50% of benchmark length	3	2
≥ 50% of benchmark length	5	4

Large logs defined as those with diameter ≥ 0.5 of benchmark large tree dbh.
* present if large log length is ≥ 25% of EVC benchmark log length.
# absent if large log length is < 25% of EVC benchmark log length.

Organic Litter

Score: 0

Category & Description	Dominated by native organic litter	Dominated by non-native organic litter
< 10% of benchmark cover	0	0
< 50% or > 150% of benchmark cover	3	2
≥ 50% or ≤ 150% of benchmark cover	5	4

'Landscape Context Score'

Score: 1

Patch Size

Score: 1

Category & Description	
< 2 ha	1
Between 2 and 5 ha	2
Between 5 and 10 ha	4
Between 10 and 20 ha	6
≥ 20 ha, but 'significantly disturbed'*	8
≥ 20 ha, but not 'significantly disturbed'*	10

* 'significantly disturbed' defined as per RFA 'Old Growth' analyses eg. roading, coupes, grazing etc. – effectively most patches within fragmented landscapes.

Distance to Core Area

Score: 1

Distance	Core Area not significantly disturbed*	Core Area significantly disturbed*
> 5 km	0	0
1 to 5 km	2	1
< 1 km	4	3
contiguous	5	4

* defined as per RFA 'Old Growth' analyses.

Neighbourhood

Score: 0.6

Radius from site	% Native vegetation *	Weighting	
100 m	20	0.03	0.6
1 km	20	0.04	0.8
5 km	40	0.03	1.2
subtract 2 if the neighbourhood is 'significantly disturbed'			2.6
		Add Values and 'round-off'	0.6

* to nearest 20%.
Multiply % native vegetation x Weighting for each radius from the zone (eg. 40% x 0.03 = 1.2); then add values to obtain final Neighbourhood Value.

Final Habitat Score

	'Site Condition Score'							'Landscape Context Score'			
Component	Large Trees	Tree Canopy Cover	Lack of Weeds	Understorey	Recruitment	Organic Litter	Logs	Patch Size	Neighbourhood	Distance to Core Area	Total
Score	0	0	4	5	0	0	0	1	0.6	1	11.6

Condition = 0.116

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Vegetation Quality Field Assessment Sheet

Version 1.3 - October 2004

Department of Sustainability and Environment

Site Name/No. Bdale Tye Site (8) +7 Location Johnsons Rd Date 01/20

Assessor(s) HDB TF Map Name/No. VICA 57 AMG E 554531 N5807196

Tenure EPSC EVC PGW Bioregion Gipp Plain

'Site Condition Score'

Large Trees — Score: 0

Category & Description	% Canopy Health*		
	> 70%	30-70%	< 30%
None present	0	0	0
> 0 to 20% of the benchmark number of large trees/ha	3	2	1
> 20% to 40% of the benchmark number of large trees/ha	4	3	2
> 40% to 70% of the benchmark number of large trees/ha	6	5	4
> 70% to 100% of the benchmark number of large trees/ha	8	7	6
≥ the benchmark number of large trees/ha	10	9	8

Large trees are defined by diameter at breast height (dbh) - see EVC benchmark.

* Estimate proportion of an expected healthy canopy cover that is present (i.e. not missing due to tree death or decline, or mistletoe infestation).

Tree Canopy Cover — Score: 0

Category & Description	% Canopy Health *		
	> 70%	30-70%	< 30%
< 10% of benchmark cover	0	0	0
< 50% or > 150% of benchmark cover	3	2	1
≥ 50% or ≤ 150% of benchmark cover	5	4	3

Tree canopy is defined as those canopy tree species reaching ≥ 80% of mature height - see EVC benchmark description.

* Estimate proportion of an expected healthy canopy cover that is present (i.e. not missing due to tree death or decline, or mistletoe infestation).

Lack of Weeds — Score: 6

Category & Description	'high threat' weeds*		
	None	≤ 50%	> 50%
> 50% cover of weeds	4	2	0
25 - 50% cover of weeds	7	6	4
5 - 25% cover of weeds	11	9	7
< 5% cover of weeds**	15	13	11

* proportion of weed cover due to 'high threat' weeds - see EVC benchmark for guide.

'High threat' weed species are defined as those introduced species (including non-indigenous 'natives') with the ability to out-compete and substantially reduce one or more indigenous life forms in the longer term assuming on-going current site characteristics and disturbance regime.

The EVC benchmark lists typical weed species for the EVC in the bioregion and provides an estimate of their 'invasiveness' and 'impact'. In general, those weed species considered to have a *high impact* are considered *high threat* regardless of their invasiveness.

** if total weed cover is negligible (<1%) and high threat weed species are present then score '13'.

Understorey Life forms

LF Code from EVC benchmark	# spp observed / Benchmark spp.	% cover observed / Benchmark % cover	Present (✓)	Modified (✓)
LT	0 / 1	0 / 5	X	
T	0 / 1	0 / 5	X	
MS	0 / 2	0 / 10	X	
SS	0 / 1	0 / 1	X	
PS	0 / 1	0 / 1	X	
LH	0 / 1	0 / 5	X	
MH	3 / 10	2 / 20	✓	✓
SH	0 / 3	0 / 5	X	
LTG	0 / 2	0 / 5	X	
LNG	0 / 1	0 / 10	X	
MTG	1 / 9	15 / 35	✓	✓
MNG	2 / 2	25 / 10	✓	X
BIL	/	0 / 10	X	
	/	/		
	/	/		
	/	/	3 / 13	PRE 2/3 MOD

Present

For life forms with benchmark cover of < 10%, considered 'present' if
- any specimens are observed.

For life forms with benchmark cover of ≥ 10%, considered 'present' if
- the life form occupies at least 10% of benchmark cover.

Modified (apply only where life form is 'present')

For life forms with benchmark cover of <10%, then considered substantially 'modified' if the life form has either:
- < 50% of the benchmark species diversity; or
- no reproductively-mature specimens are observed.

For life forms with benchmark cover of ≥ 10%, then considered substantially 'modified' if the life form has either:
- < 50% of benchmark cover; or
- < 50% of benchmark species diversity; or
- ≥ 50% of benchmark cover due largely to immature canopy specimens but the cover of reproductively-mature specimens is < 10% of the benchmark cover.

Understorey — Score: 5

Category & Description		
All strata and lifeforms effectively absent		0
Up to 50% of life forms present		5
≥ 50% to 90% of lifeforms present	• of those present, ≥ 50% substantially modified	10
	• of those present, < 50% substantially modified	15
≥ 90% of lifeforms present	• of those present, ≥ 50% substantially modified	15
	• of those present, < 50% substantially modified	20
	• of those present, none substantially modified	25

Victoria The Place To Be

Vegetation Quality Field Assessment Sheet

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Recruitment

Score: 0

Category & Description			High diversity*°	Low diversity*°
No evidence of a recruitment 'cohort'+	within EVC not driven by episodic events		0	0
	within EVC driven by episodic events^	clear evidence of appropriate episodic event	0	0
		no clear evidence of appropriate episodic event	5	5
Evidence of at least one recruitment 'cohort' in at least one life-form	proportion of native woody species present that have adequate recruitment°	< 30%	3	1
		30 - 70%	6	3
		≥ 70%	10	5

+ 'cohort' refers to a group of woody plants established in a single episode (can include suppressed canopy species individuals).
^ refer to EVC benchmark for clarification.
° treat multiple eucalypt canopy species as one species.
* high diversity defined as ≥ 50% of benchmark woody species diversity.

Species Recruitment

Woody species recorded in habitat zone	Adequate Recruitment (✓)
Eucalypt canopy (combined species)	✓
number of woody spp. in EVC benchmark (SS and taller)	

Logs

Score: 0

Category & Description	Large logs present*	Large logs absent#
< 10% of benchmark length	0	0
< 50% of benchmark length	3	2
≥ 50% of benchmark length	5	4

Large logs defined as those with diameter ≥ 0.5 of benchmark large tree dbh.
* present if large log length is ≥ 25% of EVC benchmark log length.
# absent if large log length is < 25% of EVC benchmark log length.

Organic Litter

Score: 3

Category & Description	Dominated by native organic litter	Dominated by non-native organic litter
< 10% of benchmark cover	0	0
< 50% or > 150% of benchmark cover	3	2
≥ 50% or ≤ 150% of benchmark cover	5	4

'Landscape Context Score'

Score: 1

Patch Size

Score: 1

Category & Description	
< 2 ha	1
Between 2 and 5 ha	2
Between 5 and 10 ha	4
Between 10 and 20 ha	6
≥ 20 ha, but 'significantly disturbed'*	8
≥ 20 ha, but not 'significantly disturbed'*	10

* 'significantly disturbed' defined as per RFA 'Old Growth' analyses eg. roading, coupes, grazing etc. – effectively most patches within fragmented landscapes.

Distance to Core Area

Score: 1

Distance	Core Area not significantly disturbed*	Core Area significantly disturbed*
> 5 km	0	0
1 to 5 km	2	1
< 1 km	4	3
contiguous	5	4

* defined as per RFA 'Old Growth' analyses.

Neighbourhood

Score: 1.2

Radius from site	% Native vegetation *	Weighting	
100 m	40	0.03	1.2
1 km	20	0.04	0.8
5 km	40	0.03	1.2
subtract 2 if the neighbourhood is 'significantly disturbed'			3.2
Add Values and 'round-off'			1.2

* to nearest 20%.
Multiply % native vegetation x Weighting for each radius from the zone (eg. 40% x 0.03 = 1.2); then add values to obtain final Neighbourhood Value.

Final Habitat Score

Component	'Site Condition Score'							'Landscape Context Score'			Total
	Large Trees	Tree Canopy Cover	Lack of Weeds	Understorey	Recruitment	Organic Litter	Logs	Patch Size	Neighbourhood	Distance to Core Area	100
Score	0	0	6	5	0	3	0	1	1.2	1	17.2

habitat score = 0.172

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Vegetation Quality Field Assessment Sheet

Version 1.3 - October 2004

Department of Sustainability and Environment

Site Name/No. Bdale Tip / Site 9 Location Johnsons Rd Date 10/10/20

Assessor(s) MOB TF Map Name/No. MGA 55 AMG 554562 5807379

Tenure EGSC EVC PGW Location 1 & 2 Bioregion Gippsland Plain

'Site Condition Score'

Strategic Bio Score = 0.41 → 0.

Large Trees — Score: 0

Category & Description	% Canopy Health* > 70%	30-70%	< 30%
None present	0	(0)	0
> 0 to 20% of the benchmark number of large trees/ha	3	2	1
> 20% to 40% of the benchmark number of large trees/ha	4	3	2
> 40% to 70% of the benchmark number of large trees/ha	6	5	4
> 70% to 100% of the benchmark number of large trees/ha	8	7	6
≥ the benchmark number of large trees/ha	10	9	8

Large trees are defined by diameter at breast height (dbh) - see EVC benchmark.

* Estimate proportion of an expected healthy canopy cover that is present (i.e. not missing due to tree death or decline, or mistletoe infestation).

Tree Canopy Cover — Score: 4

Category & Description	% Canopy Health * > 70%	30-70%	< 30%
< 10% of benchmark cover	0	0	0
< 50% or > 150% of benchmark cover	3	2	1
≥ 50% or ≤ 150% of benchmark cover	5	(4)	3

Tree canopy is defined as those canopy tree species reaching ≥ 80% of mature height - see EVC benchmark description.

* Estimate proportion of an expected healthy canopy cover that is present (i.e. not missing due to tree death or decline, or mistletoe infestation).

Lack of Weeds — Score: 0

Category & Description	'high threat' weeds* None	≤ 50%	> 50%
> 50% cover of weeds	4	2	(0)
25 - 50% cover of weeds	7	6	4
5 - 25% cover of weeds	11	9	7
< 5% cover of weeds**	15	13	11

* proportion of weed cover due to 'high threat' weeds - see EVC benchmark for guide.

'High threat' weed species are defined as those introduced species (including non-indigenous 'natives') with the ability to out-compete and substantially reduce one or more indigenous life forms in the longer term assuming on-going current site characteristics and disturbance regime.

The EVC benchmark lists typical weed species for the EVC in the bioregion and provides an estimate of their 'invasiveness' and 'impact'. In general, those weed species considered to have a *high impact* are considered *high threat* regardless of their invasiveness.

** if total weed cover is negligible (<1%) and high threat weed species are present then score '13'.

Understorey Life forms

LF Code from EVC benchmark	# spp observed / Benchmark spp.	% cover observed / Benchmark % cover	Present (✓)	Modified (✓)
FT	0 / 1	0 / 5	X	
T	0 / 1	0 / 5	X	
MS	10 / 2	35 / 10	✓	X
SS	2 / 1	5 / 1	✓	X
PS	1 / 1	1 / 1	✓	X
LH	0 / 1	0 / 5	X	
MH	0 / 10	0 / 20	X	
SH	0 / 3	0 / 5	X	
LTG	2 / 2	5 / 5	✓	X
LNG	0 / 1	0 / 10	X	
MTG	6 / 9	20 / 35	✓	X
MNG	1 / 2	10 / 10	✓	X
BIL	/	1 / 10	✓	✓
	/	/		
	/	/		7/13
	/	/		

1/7

Present

For life forms with benchmark cover of < 10%, considered 'present' if
- any specimens are observed.

For life forms with benchmark cover of ≥ 10%, considered 'present' if
- the life form occupies at least 10% of benchmark cover.

Modified (apply only where life form is 'present')

For life forms with benchmark cover of <10%, then considered substantially 'modified' if the life form has either:
- < 50% of the benchmark species diversity; or
- no reproductively-mature specimens are observed.

For life forms with benchmark cover of ≥ 10%, then considered substantially 'modified' if the life form has either:
- < 50% of benchmark cover; or
- < 50% of benchmark species diversity; or
- ≥ 50% of benchmark cover due largely to immature canopy specimens but the cover of reproductively-mature specimens is < 10% of the benchmark cover.

Understorey — Score: 15

Category & Description		
All strata and lifeforms effectively absent		0
Up to 50% of life forms present		5
≥ 50% to 90% of lifeforms present	• of those present, ≥ 50% substantially modified	10
	• of those present, < 50% substantially modified	15
≥ 90% of lifeforms present	• of those present, ≥ 50% substantially modified	15
	• of those present, < 50% substantially modified	20
	• of those present, none substantially modified	25

Victoria The Place To Be

Vegetation Quality Field Assessment Sheet

Version 1.3 October 2004

Recruitment

Score 6

Category & Description			High diversity*°	Low diversity*°
No evidence of a recruitment 'cohort'+	within EVC not driven by episodic events		0	0
	within EVC driven by episodic events^	clear evidence of appropriate episodic event	0	0
		no clear evidence of appropriate episodic event	5	5
Evidence of at least one recruitment 'cohort' in at least one life-form	proportion of native woody species present that have adequate recruitment°	< 30%	3	1
		30 - 70%	(6)	3
		≥ 70%	10	5

+ 'cohort' refers to a group of woody plants established in a single episode (can include suppressed canopy species individuals).
^ refer to EVC benchmark for clarification.
° treat multiple eucalypt canopy species as one species.
* high diversity defined as ≥ 50% of benchmark woody species diversity.

Species Recruitment

Woody species recorded in habitat zone	Adequate Recruitment (✓)
Eucalypt canopy (combined species)	✓
Black Sheoke	✗
Light Wood	✓
Bursaria	✗
Pittosporum	✓
Mela. Pan	✗
Exo Cupp	✗
Cop. Gland	✗
Sallow Wattle	✓
Bursaria Spin	
4/10	
number of woody spp. in EVC benchmark (SS and taller)	

Logs

Score 2

Category & Description	Large logs present*	Large logs absent#
< 10% of benchmark length	0	0
< 50% of benchmark length	3	(2)
≥ 50% of benchmark length	5	4

Large logs defined as those with diameter ≥ 0.5 of benchmark large tree dbh.
* present if large log length is ≥ 25% of EVC benchmark log length.
# absent if large log length is < 25% of EVC benchmark log length.

Organic Litter

Score 5

Category & Description	Dominated by native organic litter	Dominated by non-native organic litter
< 10% of benchmark cover	0	0
< 50% or > 150% of benchmark cover	3	2
≥ 50% or ≤ 150% of benchmark cover	(5)	4

'Landscape Context Score'

Patch Size

Score 4

2.2×20 + 1.6×10 = 4.4+1.6 = 6.0ha

Category & Description	
< 2 ha	1
Between 2 and 5 ha	2
Between 5 and 10 ha	(4)
Between 10 and 20 ha	6
≥ 20 ha, but 'significantly disturbed'*	8
≥ 20 ha, but not 'significantly disturbed'*	10

* 'significantly disturbed' defined as per RFA 'Old Growth' analyses eg. roading, coupes, grazing etc. – effectively most patches within fragmented landscapes.

Distance to Core Area

Score 1

1.9km to Macleods Morass

Distance	Core Area not significantly disturbed*	Core Area significantly disturbed*
> 5 km	0	0
1 to 5 km	2	(1)
< 1 km	4	3
contiguous	5	4

* defined as per RFA 'Old Growth' analyses.

Neighbourhood

Score 1.8

Includes native grass/sedge in paddocks estimate

Radius from site	% Native vegetation*	Weighting	
100 m	60	0.03	1.8
1 km	20	0.04	0.8
5 km	40	0.03	1.2
	subtract 2 if the neighbourhood is 'significantly disturbed'		3.8
	Add Values and 'round-off'		1.8

* to nearest 20%.
Multiply % native vegetation x Weighting for each radius from the zone (eg. 40% x 0.03 = 1.2); then add values to obtain final Neighbourhood Value.

Final Habitat Score

Component	Large Trees	Tree Canopy Cover	Lack of Weeds	Understorey	Recruitment	Organic Litter	Logs	Patch Size	Neighbourhood	Distance to Core Area	Total
	'Site Condition Score'							'Landscape Context Score'			100
Score	0	4	0	15	6	5	2	4	1.8	1	38.8

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Modelled score = 0.21-0.4 | habitat score = 0.388 / 0.39

Site 10

Vegetation Quality Field Assessment Sheet

Version 1.3 - October 2004

Department of Sustainability and Environment

Site Name/No. Compost Facility Location Johnson Rd. Date 2015

Assessor(s) MDB Map Name/No. 10 AMG / MGA 55 E 554559 5807435

Tenure EGSC EVC Swamp Scrub. Bioregion GP.

'Site Condition Score'

Large Trees — Score

Category & Description	% Canopy Health* > 70%	30-70%	< 30%
None present	0	0	0
> 0 to 20% of the benchmark number of large trees/ha	3	2	1
> 20% to 40% of the benchmark number of large trees/ha	4	3	2
> 40% to 70% of the benchmark number of large trees/ha	6	5	4
> 70% to 100% of the benchmark number of large trees/ha	8	7	6
≥ the benchmark number of large trees/ha	10	9	8

Large trees are defined by diameter at breast height (dbh) - see EVC benchmark.

* Estimate proportion of an expected healthy canopy cover that is present (i.e. not missing due to tree death or decline, or mistletoe infestation).

Tree Canopy Cover — Score 5

Category & Description	% Canopy Health * > 70%	30-70%	< 30%
< 10% of benchmark cover	0	0	0
< 50% or > 150% of benchmark cover	3	2	1
≥ 50% or ≤ 150% of benchmark cover	5	4	3

Tree canopy is defined as those canopy tree species reaching ≥ 80% of mature height - see EVC benchmark description.

* Estimate proportion of an expected healthy canopy cover that is present (i.e. not missing due to tree death or decline, or mistletoe infestation).

Lack of Weeds — Score 6

Category & Description	'high threat' weeds* None	≤ 50%	> 50%
> 50% cover of weeds	4	2	0
25 - 50% cover of weeds	7	6	4
5 - 25% cover of weeds	11	9	7
< 5% cover of weeds**	15	13	11

* proportion of weed cover due to 'high threat' weeds - see EVC benchmark for guide.

'High threat' weed species are defined as those introduced species (including non-indigenous 'natives') with the ability to out-compete and substantially reduce one or more indigenous life forms in the longer term assuming on-going current site characteristics and disturbance regime.

The EVC benchmark lists typical weed species for the EVC in the bioregion and provides an estimate of their 'invasiveness' and 'impact'. In general, those weed species considered to have a *high impact* are considered *high threat* regardless of their invasiveness.

** if total weed cover is negligible (<1%) and high threat weed species are present then score '13'.

Understorey Life forms

LF Code from EVC benchmark	# spp observed / Benchmark spp.	% cover observed / Benchmark % cover	Present (✓)	Modified (✓)
MS	6 / 3	50 / 10	✓	
SS	5 / 2	10 / 1	✓	
SH	1 / 2	< 1 / 5	✓	
ETG	2 / 1	10 / 10	✓	
LNG	0 / 3	0 / 15	X	
MTG	3 / 1	10 / 1	✓	
MNG	0 / 3	0 / 15	X	
GF	0 / 1	0 / 5	X	
SC	0 / 2	0 / 15	X	
BL	/	2 / 20	✓	✓
LH	0 / 3	0 / 5	X	
MH	1 / 3	1 / 15	X	
	/	/	6/12	1/6

Present

For life forms with benchmark cover of < 10%, considered 'present' if
- any specimens are observed.

For life forms with benchmark cover of ≥ 10%, considered 'present' if
- the life form occupies at least 10% of benchmark cover.

Modified (apply only where life form is 'present')

For life forms with benchmark cover of <10%, then considered substantially 'modified' if the life form has either:
- < 50% of the benchmark species diversity; or
- no reproductively-mature specimens are observed.

For life forms with benchmark cover of ≥ 10%, then considered substantially 'modified' if the life form has either:
- < 50% of benchmark cover; or
- < 50% of benchmark species diversity; or
- ≥ 50% of benchmark cover due largely to immature canopy specimens but the cover of reproductively-mature specimens is < 10% of the benchmark cover.

Understorey — Score 5

Category & Description		
All strata and Life forms effectively absent		0
Up to 50% of life forms present		5
≥ 50% to 90% of Life forms present	• of those present, ≥ 50% substantially modified	10
	• of those present, < 50% substantially modified	15
≥ 90% of Life forms present	• of those present, ≥ 50% substantially modified	15
	• of those present, < 50% substantially modified	20
	• of those present, none substantially modified	25

Department of Sustainability and Environment

Vegetation Quality Field Assessment Sheet

Version 1.3 - October 2004

Recruitment

Score 6

Category & Description			High diversity*◇	Low diversity*◇
No evidence of a recruitment 'cohort'+	within EVC not driven by episodic events		0	0
	within EVC driven by episodic events^	clear evidence of appropriate episodic event	0	0
		no clear evidence of appropriate episodic event	5	5
Evidence of at least one recruitment 'cohort' in at least one life-form	proportion of native woody species present that have adequate recruitment◇	< 30%	3	1
		30 - 70%	6	3
		≥ 70%	10	5

+ 'cohort' refers to a group of woody plants established in a single episode (can include suppressed canopy species individuals).
^ refer to EVC benchmark for clarification.
◇ treat multiple eucalypt canopy species as one species.
* high diversity defined as ≥ 50% of benchmark woody species diversity.

Species Recruitment

Woody species recorded in habitat zone	Adequate Recruitment (✓)
Eucalypt canopy (combined species)	X
AC. uno.	✓
Call. sp.	X
Call. sp.	✓
Mela. sp.	X
Mela. parv.	✓
Lept. glaev.	
Allo. lit.	✓
Ac. meansii	4/9
number of woody spp. in EVC benchmark (SS and taller)	

Organic Litter

Score 5

Category & Description	Dominated by native organic litter	Dominated by non-native organic litter
< 10% of benchmark cover	0	0
< 50% or > 150% of benchmark cover	3	2
≥ 50% or ≤ 150% of benchmark cover	5	4

Logs

Score

Category & Description	Large logs present*	Large logs absent#
< 10% of benchmark length	0	0
< 50% of benchmark length	3	2
≥ 50% of benchmark length	5	4

Large logs defined as those with diameter ≥ 0.5 of benchmark large tree dbh.
* present if large log length is ≥ 25% of EVC benchmark log length.
# absent if large log length is < 25% of EVC benchmark log length.

'Landscape Context Score'

Patch Size

Score 4

Category & Description	
< 2 ha	1
Between 2 and 5 ha	2
Between 5 and 10 ha	4
Between 10 and 20 ha	6
≥ 20 ha, but 'significantly disturbed'*	8
≥ 20 ha, but not 'significantly disturbed'*	10

* 'significantly disturbed' defined as per RFA 'Old Growth' analyses eg. roading, coupes, grazing etc. – effectively most patches within fragmented landscapes.

Distance to Core Area

Score 1

Distance	Core Area not significantly disturbed*	Core Area significantly disturbed*
> 5 km	0	0
1 to 5 km	2	1
< 1 km	4	3
contiguous	5	4

* defined as per RFA 'Old Growth' analyses.

corrected figure

75/60 = x/27
x = 33.75

Neighbourhood

Score 1.8

Radius from site	% Native vegetation*	Weighting	
100 m	60	0.03	1.8
1 km	20	0.04	0.8
5 km	40	0.03	1.2
subtract 2 if the neighbourhood is 'significantly disturbed'			3.8
		Add Values and 'round-off'	1.82

* to nearest 20%.
Multiply % native vegetation x Weighting for each radius from the zone (eg. 40% x 0.03 = 1.2); then add values to obtain final Neighbourhood Value.

Final Habitat Score

	'Site Condition Score'							'Landscape Context Score'			
Component	Large Trees (10)	Tree Canopy Cover	Lack of Weeds	Understorey	Recruitment	Organic Litter	Logs (5)	Patch Size	Neighbourhood	Distance to Core Area	Total
Score	2	6	6	6	2	2	2	4	1.8	–	40 / 100

Appendix 5. Planning Property Report

PLANNING PROPERTY REPORT

From www.planning.vic.gov.au at 03 October 2023 04:49 PM

PROPERTY DETAILS

Lot and Plan Number:	**Lot 2 LP116329**
Address:	**665 FORGE CREEK ROAD FORGE CREEK 3875**
Standard Parcel Identifier (SPI):	**2\LP116329**
Local Government Area (Council):	**EAST GIPPSLAND** www.eastgippsland.vic.gov.au
Council Property Number:	**81257 (Part)**
Planning Scheme:	**East Gippsland** Planning Scheme - East Gippsland
Directory Reference:	**Vicroads 84 B8**

This parcel is one of 3 parcels comprising the property. For full parcel details get the free Property report at Property Reports

UTILITIES

Rural Water Corporation:	**Southern Rural Water**
Urban Water Corporation:	**East Gippsland Water**
Melbourne Water:	**Outside drainage boundary**
Power Distributor:	**AUSNET**

STATE ELECTORATES

Legislative Council:	**EASTERN VICTORIA**
Legislative Assembly:	**GIPPSLAND EAST**

OTHER

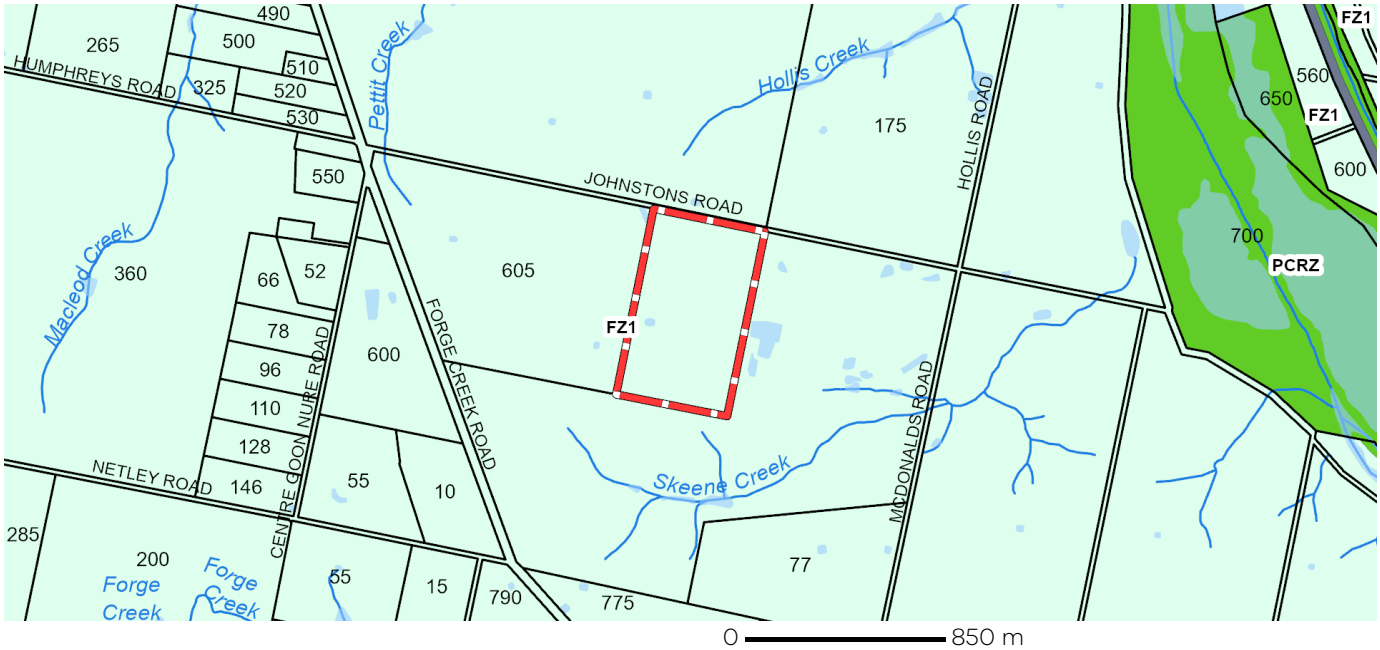
Registered Aboriginal Party:	**Gunaikurnai Land and Waters Aboriginal Corporation**

View location in VicPlan

Planning Zones

FARMING ZONE (FZ)

FARMING ZONE - SCHEDULE 1 (FZ1)



FZ - Farming
PCRZ - Public Conservation and Resource
PPRZ - Public Park and Recreation
TRZ2 - Principal Road Network
Water area
Water course

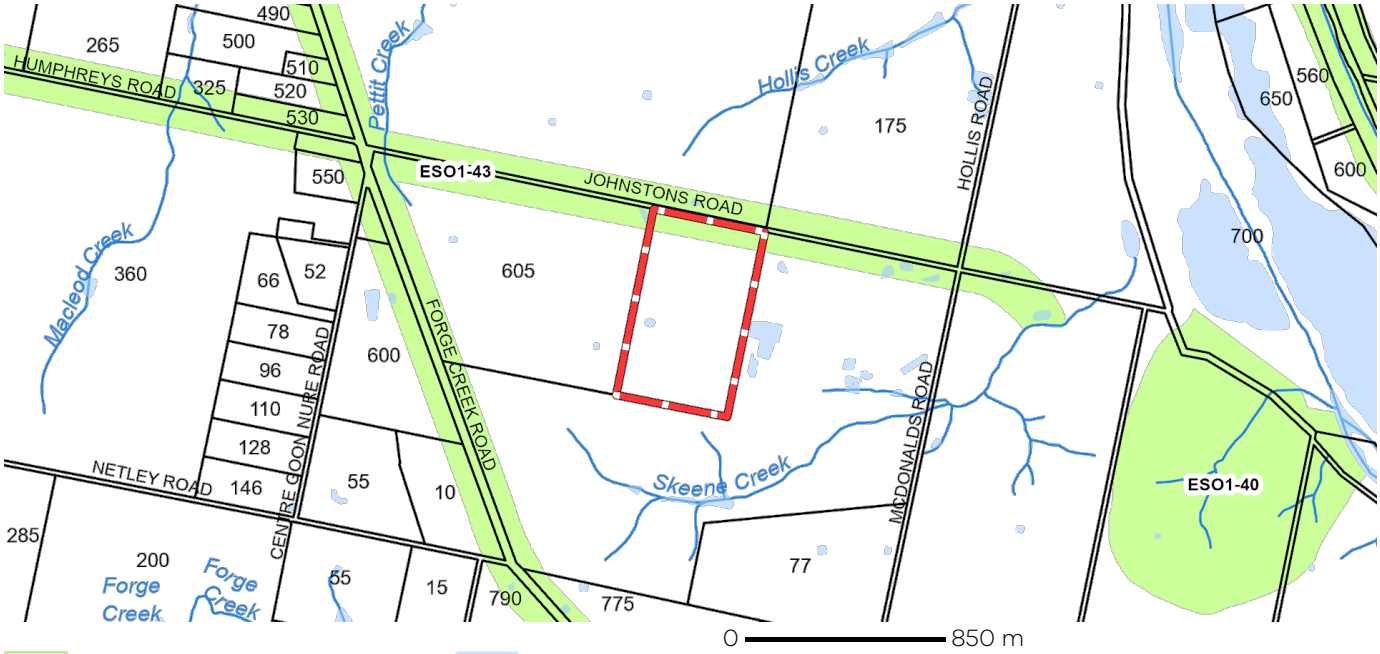
Note: labels for zones may appear outside the actual zone - please compare the labels with the legend.

PLANNING PROPERTY REPORT

Planning Overlays

ENVIRONMENTAL SIGNIFICANCE OVERLAY (ESO)

ENVIRONMENTAL SIGNIFICANCE OVERLAY - SCHEDULE 1-43 (ESO1-43)



ESO - Environmental Significance Overlay **Water area** **Water course**

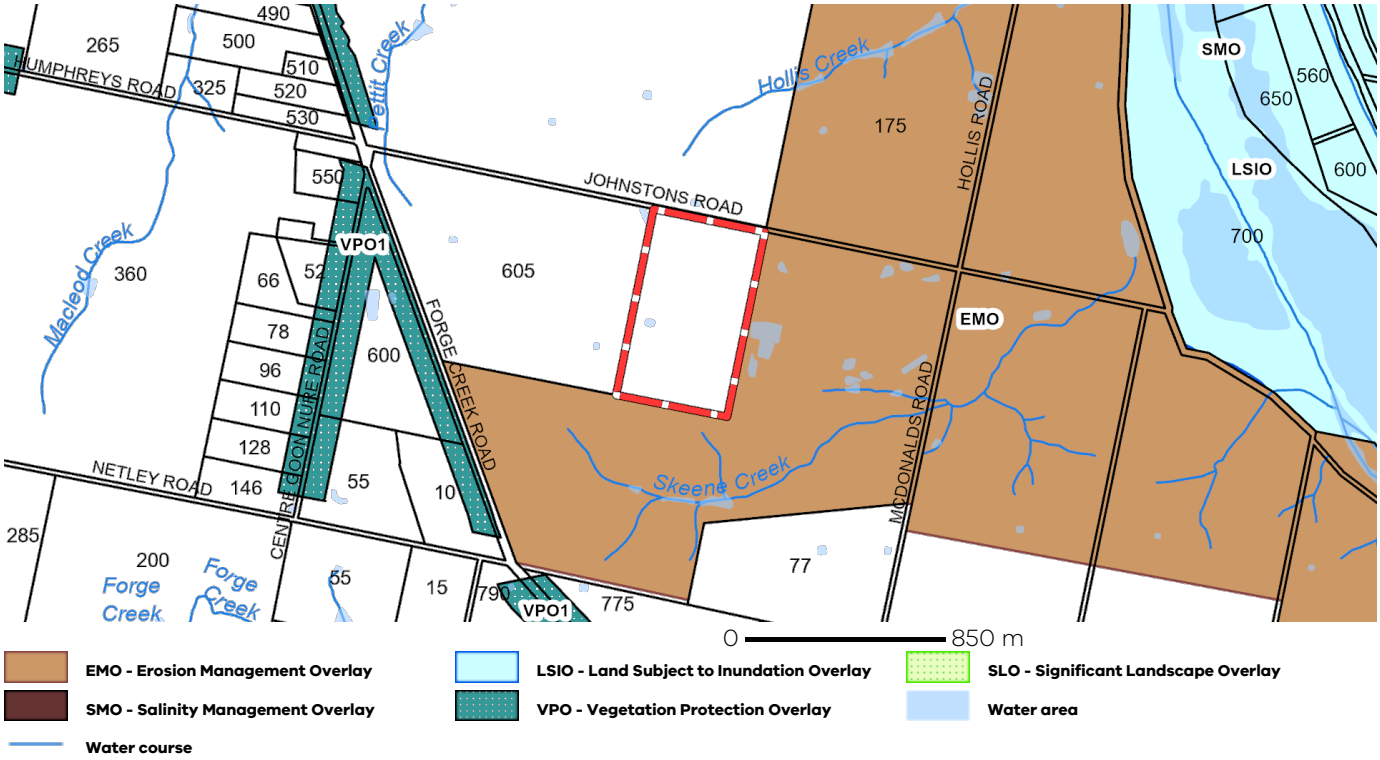
Note: due to overlaps, some overlays may not be visible, and some colours may not match those in the legend

PLANNING PROPERTY REPORT

OTHER OVERLAYS

Other overlays in the vicinity not directly affecting this land

EROSION MANAGEMENT OVERLAY (EMO)
LAND SUBJECT TO INUNDATION OVERLAY (LSIO)
SIGNIFICANT LANDSCAPE OVERLAY (SLO)
SALINITY MANAGEMENT OVERLAY (SMO)
VEGETATION PROTECTION OVERLAY (VPO)



Note: due to overlaps, some overlays may not be visible, and some colours may not match those in the legend

Further Planning Information

Planning scheme data last updated on 27 September 2023.

A **planning scheme** sets out policies and requirements for the use, development and protection of land.
This report provides information about the zone and overlay provisions that apply to the selected land.
Information about the State and local policy, particular, general and operational provisions of the local planning scheme that may affect the use of this land can be obtained by contacting the local council or by visiting https://www.planning.vic.gov.au

This report is NOT a **Planning Certificate** issued pursuant to Section 199 of the ***Planning and Environment Act 1987.***
It does not include information about exhibited planning scheme amendments, or zonings that may abut the land.
To obtain a Planning Certificate go to Titles and Property Certificates at Landata - https://www.landata.vic.gov.au

For details of surrounding properties, use this service to get the Reports for properties of interest.

To view planning zones, overlay and heritage information in an interactive format visit https://mapshare.maps.vic.gov.au/vicplan

For other information about planning in Victoria visit https://www.planning.vic.gov.au

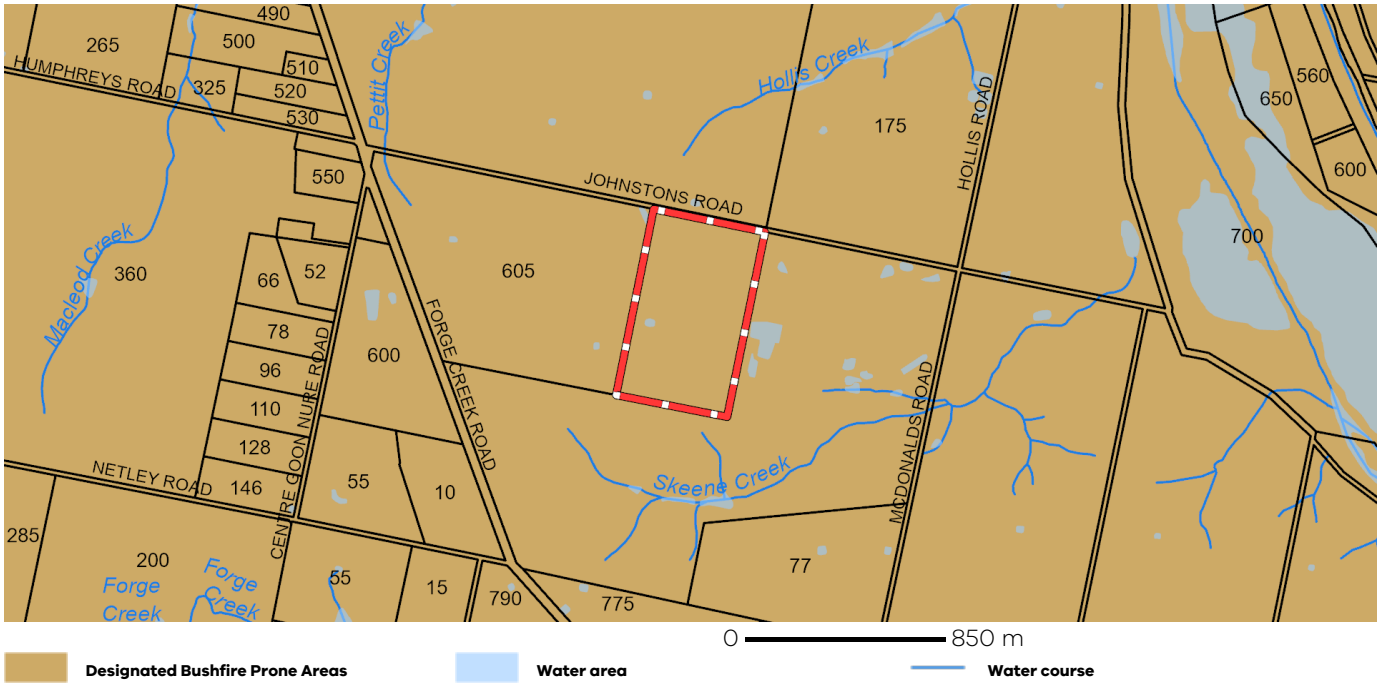
PLANNING PROPERTY REPORT

Designated Bushfire Prone Areas

This parcel is in a designated bushfire prone area. Special bushfire construction requirements apply to the part of the property mapped as a designated bushfire prone area (BPA). Planning provisions may apply.

Where part of the property is mapped as BPA, if no part of the building envelope or footprint falls within the BPA area, the BPA construction requirements do not apply.

Note: the relevant building surveyor determines the need for compliance with the bushfire construction requirements.



Designated BPA are determined by the Minister for Planning following a detailed review process. The Building Regulations 2018, through adoption of the Building Code of Australia, apply bushfire protection standards for building works in designated BPA.

Designated BPA maps can be viewed on VicPlan at https://mapshare.vic.gov.au/vicplan/ or at the relevant local council.

Create a BPA definition plan in VicPlan to measure the BPA.

Information for lot owners building in the BPA is available at https://www.planning.vic.gov.au.

Further information about the building control system and building in bushfire prone areas can be found on the Victorian Building Authority website https://www.vba.vic.gov.au. Copies of the Building Act and Building Regulations are available from http://www.legislation.vic.gov.au. For Planning Scheme Provisions in bushfire areas visit https://www.planning.vic.gov.au.

Native Vegetation

Native plants that are indigenous to the region and important for biodiversity might be present on this property. This could include trees, shrubs, herbs, grasses or aquatic plants. There are a range of regulations that may apply including need to obtain a planning permit under Clause 52.17 of the local planning scheme. For more information see Native Vegetation (Clause 52.17) with local variations in Native Vegetation (Clause 52.17) Schedule

To help identify native vegetation on this property and the application of Clause 52.17 please visit the Native Vegetation Information Management system https://nvim.delwp.vic.gov.au/ and Native vegetation (environment.vic.gov.au) or please contact your relevant council.

You can find out more about the natural values on your property through NatureKit NatureKit (environment.vic.gov.au)

PLANNING PROPERTY REPORT

Extractive Industry Work Authorities (WA)

All or parts of this property are within 500 metres of Extractive Industry Work Authorities (current).

On 22 March 2022, Amendment VC219 introduced changes to all planning schemes in Victoria to support the ongoing operation of extractive industry across Victoria and increase amenity protection for nearby accommodation in rural zones.

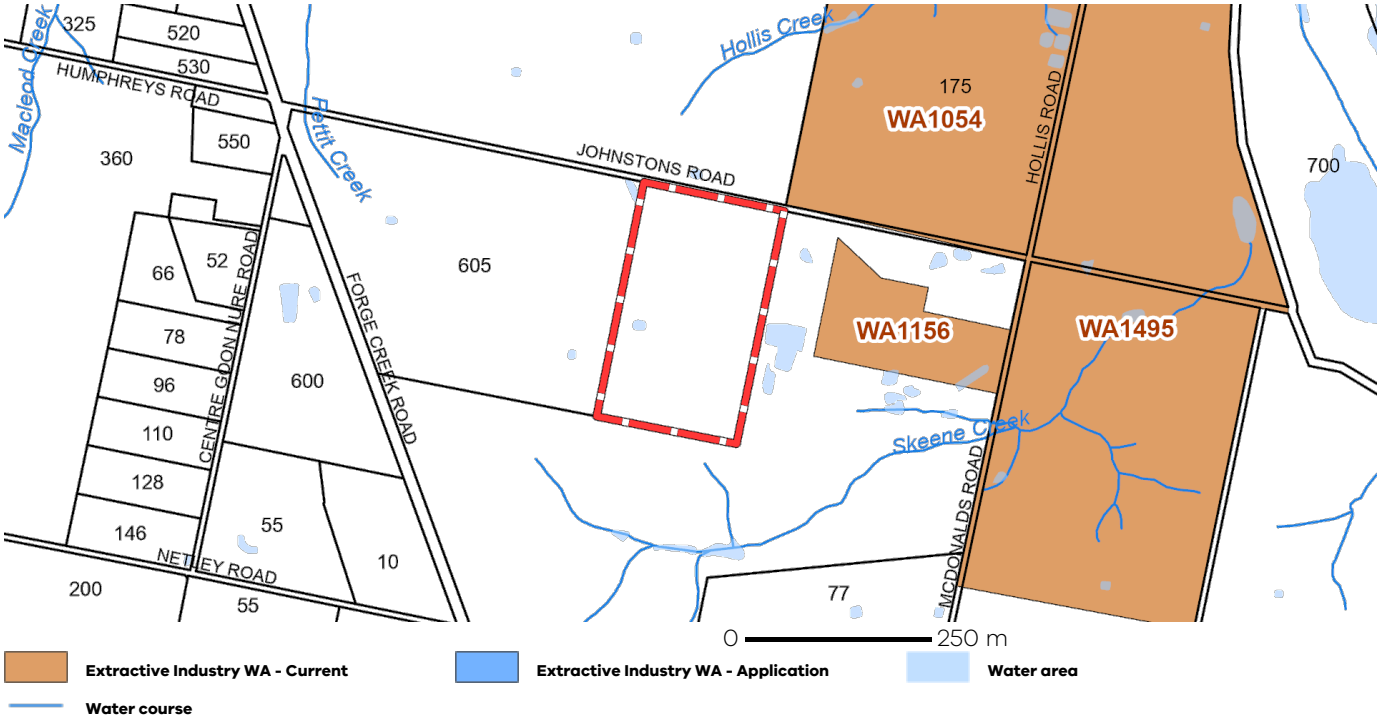
The amendment made changes to the Rural Living Zone, Green Wedge Zone, Green Wedge Zone A, Rural Activity Zone, Farming Zone and Rural Conservation Zone, introducing a permit requirement for accommodation and building and works associated with accommodation that is located within 500 metres from the nearest title boundary of land on which a work authority has been applied for or granted under the Mineral Resources (Sustainable Development) Act 1990 (MRSD Act).

The Amendment also introduced new referral and notice requirements, and decision guidelines.

VicPlan mapping shows property information, including whether a work authority application has been made or approved under the MRSD Act.

Guidance on accessing work authority maps is detailed at the DELWP Extractive Resources (planning.vic.gov.au) webpage.

Further information on extractive and mining activities in Victoria can be found on the (GeoVic - Earth Resources) website which is maintained by the Resources Branch within the Department of Jobs, Precincts and Regions. Limited information is available for unregistered users (anonymous user).



Appendix 6. Native Vegetation Removal Report

Native vegetation removal report

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: **09/04/2024**
Time of issue: **11:26 am**

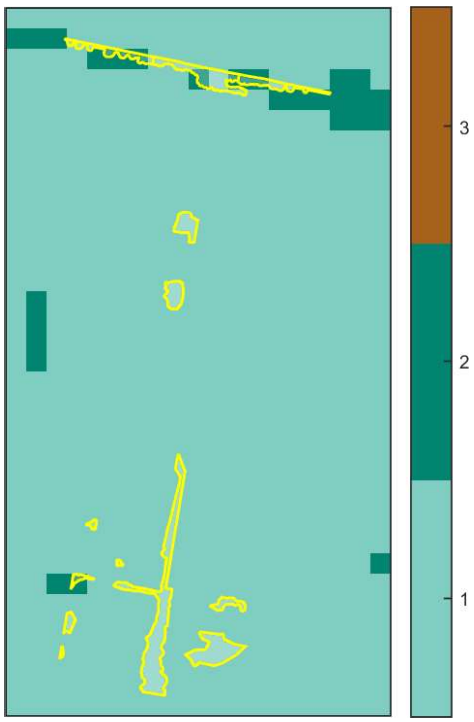
Report ID: ETH_2024_001

Project ID	23053_EGSC_Composting_Facility_NVR_v3

Assessment pathway

Assessment pathway	**Detailed Assessment Pathway**
Extent including past and proposed	1.070 ha
Extent of past removal	0.000 ha
Extent of proposed removal	1.070 ha
No. Large trees proposed to be removed	0
Location category of proposed removal	Location 2 The native vegetation is in an area mapped as an endangered Ecological Vegetation Class (as per the statewide EVC map). Removal of less than 0.5 hectares of native vegetation in this location will not have a significant impact on any habitat for a rare or threatened species.

1. Location map



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 amount[1]	0.277 general habitat units
Vicinity	East Gippsland Catchment Management Authority (CMA) or East Gippsland Shire Council
Minimum strategic biodiversity value score[2]	0.352
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

1 The general offset amount required is the sum of all general habitat units in Appendix 1.

2 Minimum strategic biodiversity score is 80 per cent of the weighted average score across habitat zones where a general offset is required

Next steps

Any proposal to remove native vegetation must meet the application requirements of the Detailed Assessment Pathway and it will be assessed under the Detailed 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 (partly met)
- Maps showing the native vegetation and property (partly met)
- Information about the impacts on rare or threatened species.
- 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 defendable space statement as applicable
- A statement about the Native Vegetation Precinct Plan as applicable
- A site assessment report including a habitat hectare assessment of any patches of native vegetation and details of trees
- An offset statement that explains that an offset has been identified and how it will be secured.

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

Appendix 1: Description of native vegetation to be removed

The species-general offset test was applied to your proposal. This test determines if the proposed removal of native vegetation has a proportional impact on any rare or threatened species habitats above the species offset threshold. The threshold is set at 0.005 per cent of the mapped habitat value for a species. When the proportional impact is above the species offset threshold a species offset is required. This test is done for all species mapped at the site. Multiple species offsets will be required if the species offset threshold is exceeded for multiple species.

Where a zone requires species offset(s), the species habitat units for each species in that zone is calculated by the following equation in accordance with the Guidelines:

Species habitat units = extent x condition x species landscape factor x 2, where the species landscape factor = 0.5 + (habitat importance score/2)

The species offset amount(s) required is the sum of all species habitat units per zone

Where a zone does not require a species offset, the general habitat units in that zone is calculated by the following equation in accordance with the Guidelines:

General habitat units = extent x condition x general landscape factor x 1.5, where the general landscape factor = 0.5 + (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
1-4	Patch	gipp0055	Endangered	0	no	0.100	0.009	0.009	0.460		0.001	General
1-6	Patch	gipp0055	Endangered	0	no	0.260	0.033	0.033	0.430		0.009	General
1-5	Patch	gipp0055	Endangered	0	no	0.260	0.157	0.157	0.430		0.044	General
1-3	Patch	gipp0055	Endangered	0	no	0.100	0.004	0.004	0.460		0.000	General
1-7	Patch	gipp0055	Endangered	0	no	0.320	0.063	0.063	0.441		0.022	General
1-8	Patch	gipp0055	Endangered	0	no	0.320	0.065	0.065	0.440		0.022	General
1-2	Patch	gipp0055	Endangered	0	no	0.170	0.397	0.397	0.446		0.073	General
1-10	Patch	gipp0053	Endangered	0	no	0.410	0.160	0.160	0.432		0.070	General
1-9	Patch	gipp0055	Endangered	0	no	0.120	0.071	0.071	0.430		0.009	General
1-9	Patch	gipp0055	Endangered	0	no	0.120	0.073	0.073	0.450		0.009	General
1-1	Patch	gipp0055	Endangered	0	no	0.390	0.004	0.004	0.460		0.002	General

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
1-1	Patch	gipp0055	Endangered	0	no	0.390	0.014	0.014	0.460		0.006	General
1-1	Patch	gipp0055	Endangered	0	no	0.390	0.021	0.021	0.460		0.009	General

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

This table lists all rare or threatened species' habitats mapped at the site.

Species common name	Species scientific name	Species number	Conservation status	Group	Habitat impacted	% habitat value affected
Dwarf Kerrawang	*Commersonia prostrata*	502965	Endangered	Dispersed	Habitat importance map	0.0000
Woolly Waterlily	*Philydrum lanuginosum*	502494	Vulnerable	Dispersed	Habitat importance map	0.0000
Annual Fireweed	*Senecio glomeratus subsp. longifructus*	507144	Rare	Dispersed	Habitat importance map	0.0000
Grey Billy-buttons	*Craspedia canens*	504643	Endangered	Dispersed	Habitat importance map	0.0000
Rough-grain Love-grass	*Eragrostis trachycarpa*	501197	Rare	Dispersed	Habitat importance map	0.0000
Veined Spear-grass	*Austrostipa rudis subsp. australis*	504940	Rare	Dispersed	Habitat importance map	0.0000
Spurred Helmet-orchid	*Corybas aconitiflorus*	500835	Rare	Dispersed	Habitat importance map	0.0000
Bushy Hedgehog-grass	*Echinopogon caespitosus var. caespitosus*	501120	Endangered	Dispersed	Habitat importance map	0.0000
Slender Pink-fingers	*Caladenia vulgaris*	504449	Rare	Dispersed	Habitat importance map	0.0000
Fringed Helmet-orchid	*Corybas fimbriatus*	500839	Rare	Dispersed	Habitat importance map	0.0000
Maroon Leek-orchid	*Prasophyllum frenchii*	502709	Endangered	Dispersed	Habitat importance map	0.0000
Forest Bitter-cress	*Cardamine papillata*	505034	Vulnerable	Dispersed	Habitat importance map	0.0000
Wavy Swamp Wallaby-grass	*Amphibromus sinuatus*	503625	Vulnerable	Dispersed	Habitat importance map	0.0000
Slender Wire-lily	*Laxmannia gracilis*	501889	Rare	Dispersed	Habitat importance map	0.0000
Matted Flax-lily	*Dianella amoena*	505084	Endangered	Dispersed	Habitat importance map	0.0000
Purple Blown-grass	*Lachnagrostis punicea subsp. punicea*	504206	Rare	Dispersed	Habitat importance map	0.0000
Trailing Hop-bush	*Dodonaea procumbens*	501090	Vulnerable	Dispersed	Habitat importance map	0.0000
Leafy Twig-sedge	*Cladium procerum*	500786	Rare	Dispersed	Habitat importance map	0.0000

Swamp Everlasting	*Xerochrysum palustre*	503763	Vulnerable	Dispersed	Habitat importance map	0.0000
Pale Swamp Everlasting	*Coronidium gunnianum*	504655	Vulnerable	Dispersed	Habitat importance map	0.0000
Purple Diuris	*Diuris punctata*	501084	Vulnerable	Dispersed	Habitat importance map	0.0000
Dwarf Milkwort	*Polygala japonica*	502623	Vulnerable	Dispersed	Habitat importance map	0.0000
Yarra Gum	*Eucalyptus yarraensis*	501326	Rare	Dispersed	Habitat importance map	0.0000
One-flower Early Nancy	*Wurmbea uniflora*	503583	Rare	Dispersed	Habitat importance map	0.0000
Veiled Fringe-sedge	*Fimbristylis velata*	501369	Rare	Dispersed	Habitat importance map	0.0000
Silky Kidney-weed	*Dichondra sp. 1*	505786	Rare	Dispersed	Habitat importance map	0.0000
Golden Pomaderris	*Pomaderris aurea*	502651	Rare	Dispersed	Habitat importance map	0.0000
Lanky Buttons	*Leptorhynchos elongatus*	501941	Endangered	Dispersed	Habitat importance map	0.0000
Fisch's Greenhood	*Pterostylis fischii*	502795	Rare	Dispersed	Habitat importance map	0.0000
Austral Moonwort	*Botrychium australe*	500445	Vulnerable	Dispersed	Habitat importance map	0.0000
Golden Grevillea	*Grevillea chrysophaea*	501530	Rare	Dispersed	Habitat importance map	0.0000
Tall Vanilla-lily	*Arthropodium sp. 1 (robust glaucous)*	503699	Rare	Dispersed	Habitat importance map	0.0000
Purple Blown-grass	*Lachnagrostis punicea subsp. filifolia*	504222	Rare	Dispersed	Habitat importance map	0.0000
Forest Red-box	*Eucalyptus polyanthemos subsp. longior*	504754	Rare	Dispersed	Habitat importance map	0.0000
Black Falcon	*Falco subniger*	10238	Vulnerable	Dispersed	Habitat importance map	0.0000

Habitat group

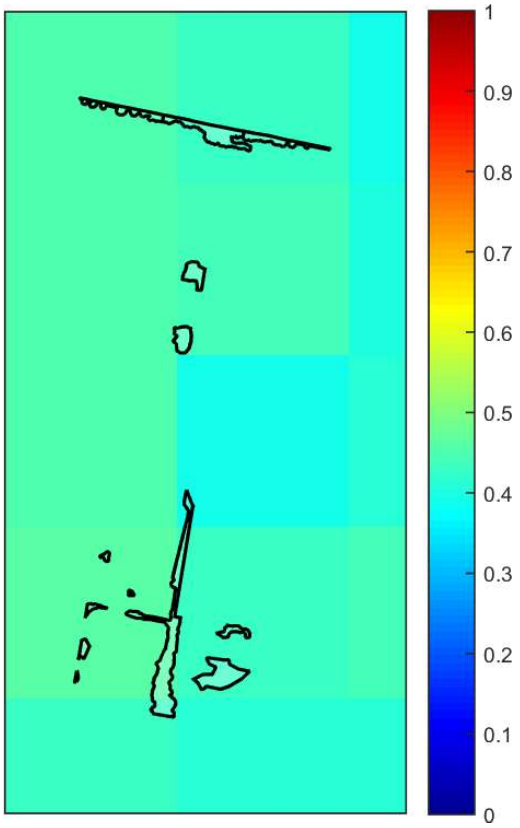
- Highly localised habitat means there is 2000 hectares or less mapped habitat for the species
- Dispersed habitat means there is more than 2000 hectares of mapped habitat for the species

Habitat impacted

- Habitat importance maps are the maps defined in the Guidelines that include all the mapped habitat for a rare or threatened species
- Top ranking maps are the maps defined in the Guidelines that depict the important areas of a dispersed species habitat, developed from the highest habitat importance scores in dispersed species habitat maps and selected VBA records
- Selected VBA record is an area in Victoria that represents a large population, roosting or breeding site etc.

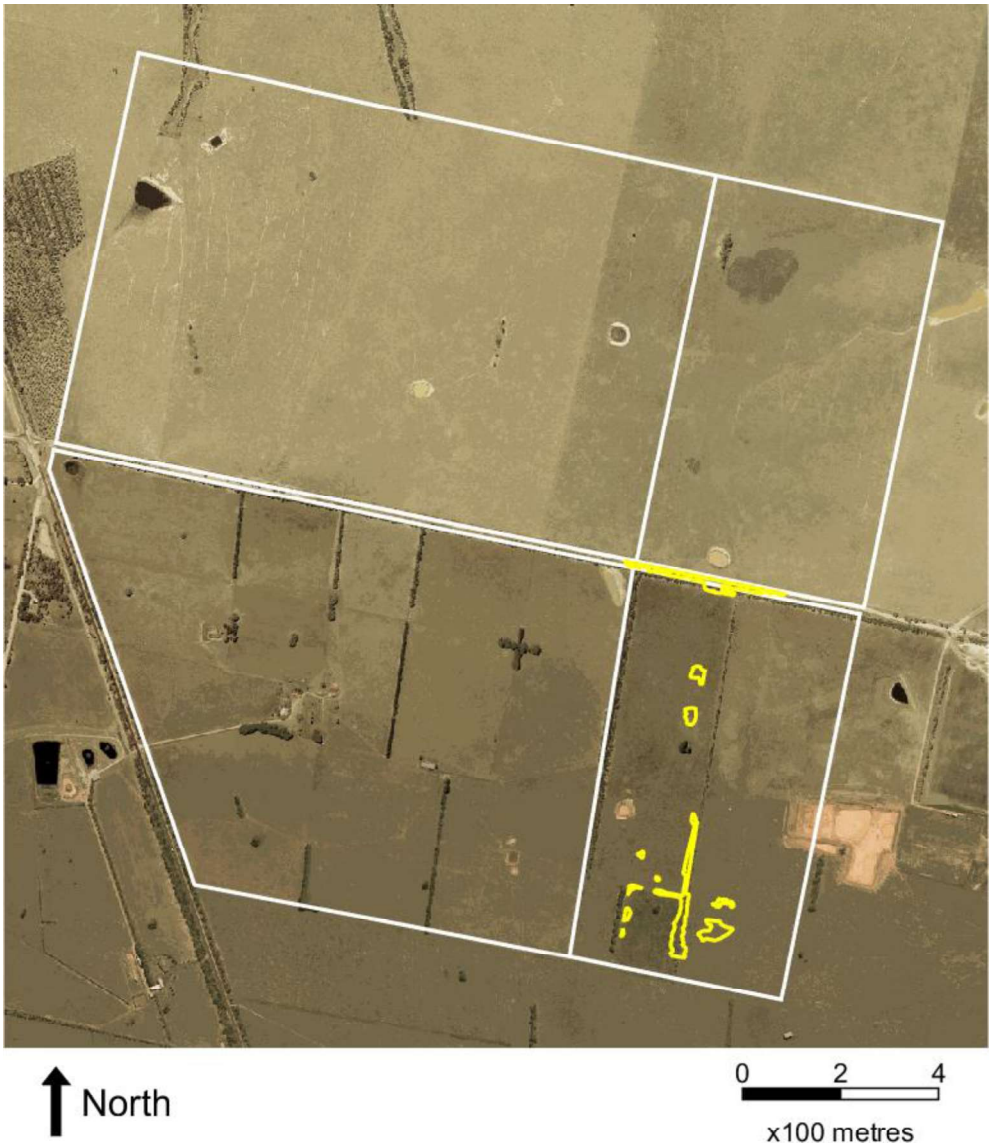
Appendix 3 – Images of mapped native vegetation

2. Strategic biodiversity values map



3. Aerial photograph showing mapped native vegetation

4. Map of the property in context



Yellow boundaries denote areas of proposed native vegetation removal.

Appendix 7. Report of available native vegetation credits

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: 08/04/2024 01:46 **Report ID: 23638**

What was searched for?

General offset

General habitat units	Strategic biodiversity value	Large trees	Vicinity (Catchment Management Authority or Municipal district)	
0.277	0.352	0	CMA	East Gippsland
			or LGA	East Gippsland Shire

Details of available native vegetation credits on 08 April 2024 01:46

These sites meet your requirements for general offsets.

Credit Site ID	GHU	LT	CMA	LGA	Land owner	Trader	Fixed price	Broker(s)
BBA-0115	2.940	0	West Gippsland	East Gippsland Shire	Yes	Yes	No	Bio Offsets
BBA-2323	6.019	86	East Gippsland	East Gippsland Shire	Yes	Yes	No	Bio Offsets, Ethos, VegLink
BBA-2843	15.103	903	East Gippsland	East Gippsland Shire	Yes	Yes	No	VegLink
TFN-C1621	1.387	1	East Gippsland	East Gippsland Shire	Yes	Yes	No	TFN
VC_CFL-3720_01	1.876	244	East Gippsland	East Gippsland Shire	Yes	Yes	No	Contact NVOR
VC_CFL-3767_01	21.941	1601	East Gippsland	East Gippsland Shire	Yes	Yes	No	Ethos, VegLink
VC_CFL-3767_01	0.720	0	East Gippsland	East Gippsland Shire	Yes	Yes	Yes	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)

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.

Credit Site ID	GHU	LT	CMA	LGA	Land owner	Trader	Fixed price	Broker(s)

There are no potential sites listed in the Native Vegetation Credit Register that meet your offset requirements.

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 avaliable
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

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

Appendix 8. Recent credit trades in East Gippsland CMA

Date of trade	Catchment Management Authority (CMA)	Strategic Biodiversity Value	General Habitat Unit (GHU)	Large Trees (LT)	$/GHU (excl.)	Price $ (incl GST)	Price $ (excl. GST)
13/02/2024	East Gippsland	0.784	0.154	10	$ 148,701	25,190.00	22,900.00
29/01/2024	East Gippsland	0.803	0.067	0	$ 98,000	7,222.60	6,566.00
8/12/2023	East Gippsland	0.784	0.124	6	$ 127,032	17,327.20	15,752.00
6/11/2023	East Gippsland	0.784	0.028	1	$ 133,714	4,118.40	3,744.00
5/10/2023	East Gippsland	0.784	0.014	1	$ 169,429	2,609.20	2,372.00
20/09/2023	East Gippsland	0.784	0.122	3	$ 112,754	15,131.60	13,756.00
14/09/2023	East Gippsland	0.803	0.101	0	$ 92,000	10,221.20	9,292.00
3/08/2023	East Gippsland	0.784	0.231	1	$ 102,165	25,960.00	23,600.00
2/08/2023	East Gippsland	0.803	0.006	0	$ 98,000	646.80	588.00
1/08/2023	East Gippsland	0.803	0.009	0	$ 98,000	970.20	882.00
18/07/2023	East Gippsland	0.784	0.055	2	$ 128,364	7,766.00	7,060.00
3/07/2023	East Gippsland	0.803	0.011	0	$ 92,000	1,113.20	1,012.00
29/06/2023	East Gippsland	0.784	0.256	0	$ 95,000	26,752.00	24,320.00
29/05/2023	East Gippsland	0.803	0.053	0	$ 92,000	5,363.60	4,876.00
22/05/2023	East Gippsland	0.803	0.008	0	$ 92,000	809.60	736.00
9/05/2023	East Gippsland	0.784	0.018	1	$ 147,556	2,921.60	2,656.00
19/04/2023	East Gippsland	0.784	0.062	0	$ 92,000	6,274.40	5,704.00
3/03/2023	East Gippsland	0.784	0.023	0	$ 92,000	2,327.60	2,116.00
20/02/2023	East Gippsland	0.985	0.006	0	$ 100,000	660.00	600.00
13/02/2023	East Gippsland	0.985	0.076	0	$ 100,000	8,360.00	7,600.00
13/02/2023	East Gippsland	0.784	0.119	8	$ 125,210	16,390.00	14,900.00
24/01/2023	East Gippsland	0.784	0.020	0	$ 92,000	2,024.00	1,840.00

Sourced from https://www.environment.vic.gov.au/native-vegetation_removal-regulations/offsets-for-the-removal-of native-vegetation/i-need-to-secure-an-offset

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East Gippsland Shire Council
200 Johnstons Rd, Forge Creek
Proposed Composting Facility
NOISE IMPACT ASSESSMENT

Rp V1 E2312008 | 15th March 2024

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Client:	**East Gippsland Shire Council** PO Box 1618, Bairnsdale, Vic 3875
Project:	**East Gippsland Shire Council Forge Creek Composting Facility** Noise Impact Assessment
Prepared for:	**Ashlee Dixon-Tong** East Gippsland Shire Council
Report No.:	**Rp V1 E2312008**
Author:	**William Dalmau** Principal Acoustic Consultant

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Summary

Noise modelling was conducted of the proposed composting facility located at 200 Johnstons Rd, Forge Creek. The site will have a variety of operational noise sources including fixed mechanical equipment such as a slow speed grinder, Trommel and forced air-floor system. Mobile plant will include a front end loader, tractor and windrow turner. Truck movements will also occur for loading and unloading of material and product.

Residential dwellings are located in very low density around the site, with the closest being approximately 750m away.

Results of the assessment show that the noise emissions from the proposed composting facility are able to be compliant with the Noise Protocol noise targets under the planned conditions. The predicted results are under downwind conditions in all directions, representing typical worst-case conditions for all affected locations.

Noise sensitive receiver locations surround the site to the south and west and meteorological effects can also influence noise levels. Down wind conditions can increase noise levels at noise sensitive receivers, while up wind conditions can decrease noise levels.

The predicted noise emissions of the composting facility have been compared against the Noise Protocol Part I noise targets for noise sensitive receivers surrounding the site, with outcomes as follows:

- Condition 1 – Proposed Condition:
  - Day time period noise targets achieved for all locations, with a low likelihood of complaint.

- Condition 2 – Noise Control Program Condition:
  - Day time period noise targets achieved for all locations, with a very low likelihood of complaint.

The dominant noise sources were investigated and a noise control treatment option in the form of a 5m tall earth bund was recommended in Section 4.1.3 of this report.

With noise targets predicted to be achieved, it is projected that noise emissions from the proposed composting facility will generally pose a low risk to human health and the environment. If the noise control treatments are implemented, this can be downgraded to a very low risk to human health and the environment.

1 Introduction

Acoustic Compliance Australia (ACA) was engaged by East Gippsland Shire Council (EGSC) to conduct an environmental noise impact assessment of its proposed Forge Creek composting facility, and develop a noise control program to reduce relevant site noise to achieve applicable noise targets.

The proposed composting facility is to be located at 200 Johnstons Rd, Forge Creek. This assessment is to provide a general risk assessment of potential off site noise emissions as the project is in the early stages of development. The assessment will assist in decision making on how to control potential noise risks by modifying the proposed design were feasible and practicable. The assessment is based off not for construction drawings and process stage and therefore many assumptions have been made regarding proposed noise source levels, noise source locations, building construction and operational processes.

Residential dwellings are located in very low density around the site. The proposed site will operate 7am till 5pm, 7 days per week. Generally, site noise emissions will be consistent throughout the day with short periods when the noise emissions may be louder or quieter than typical.

The environmental noise assessment was conducted to identify the potential risk of harm to human health and the environment of nearby noise sensitive receptors and has been carried out in accordance with the following:

- Environment Protection Act 2017
- Environment Protection Regulations 2021
- EPA Victoria Publication 1826.4 - *Noise limit and assessment protocol for the control of noise from commercial, industrial and trade premises and entertainment venues* (Noise Protocol).

This report documents the assessment including the methodology used, the predicted noise levels at the relevant noise sensitive receptors and any conclusions as appropriate.

A glossary of acoustic terms used within this report is provided in Appendix I.

2 Site Description

The proposed EGSC composting facility is located at 200 Johnstons Rd, Forge Creek, adjacent to the Bairnsdale Regional landfill.

The proposed facility will operate 7am till 5pm, 7 days per week, with operational noise sources including fixed mechanical equipment such as a slow speed grinder, Trommel and forced air-floor system. Mobile plant will include a front end loader, tractor and windrow turner. Truck movements will also occur for loading and unloading of material and product.

The proposed facility and all the surrounding area is located within Farming Zone 1 (FZ1) zoned land. 200 Johnstons Rd is a very large parcel of land that extends from Johnstons Rd to Forge Creek Rd.

There are residential dwellings located to the west, south west, south and south east. The closest residential dwelling is located approximately 750m to the west at 605 Forge Creek Road, Forge Creek.

The site and the immediate surrounds are relatively flat with the terrain gently rising to the west.

Figure 2.1 details the proposed site areas.

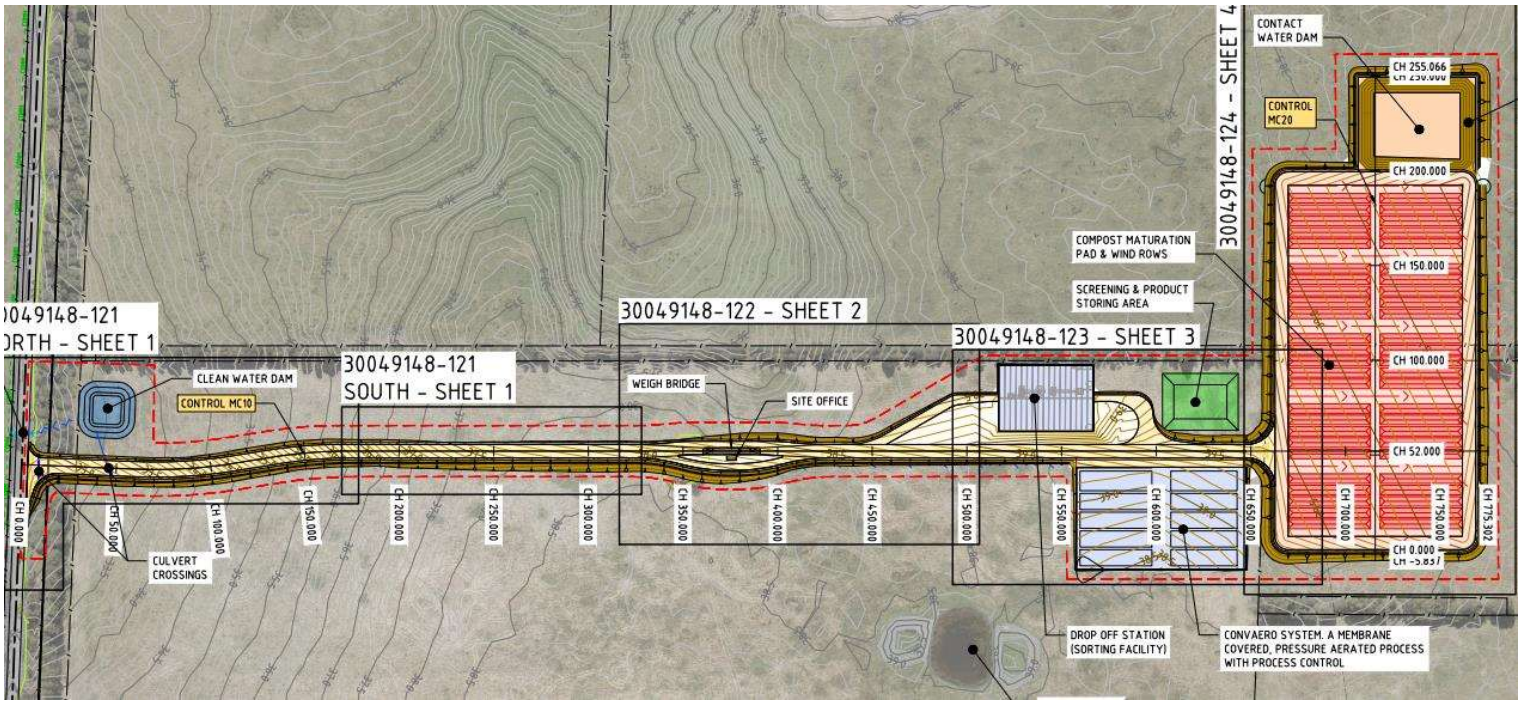

Figure 2.1 – Proposed Facility Areas

2.1 Nearest Noise Sensitive Receivers

The nearest and most affected Noise Sensitive Receivers (NSRs) in relation to the composting facility are located to the west, south west, south and south east. The closest NSRs to the proposed facility and their distances to the facility are detailed on the following page:

- 605 Forge Creek Road (west approx. 750m)
- 600 Forge Creek Road (west approx. 940m)
- 10 Netley Road (south west approx. 1020m)
- 775 Forge Creek Road (south approx. 1060m)
- 825 Forge Creek Road (south approx. 1210m)
- 77 McDonalds Road (south east approx. 1140m)

Figure 2.2 details the site in relation to the NSR locations listed above.

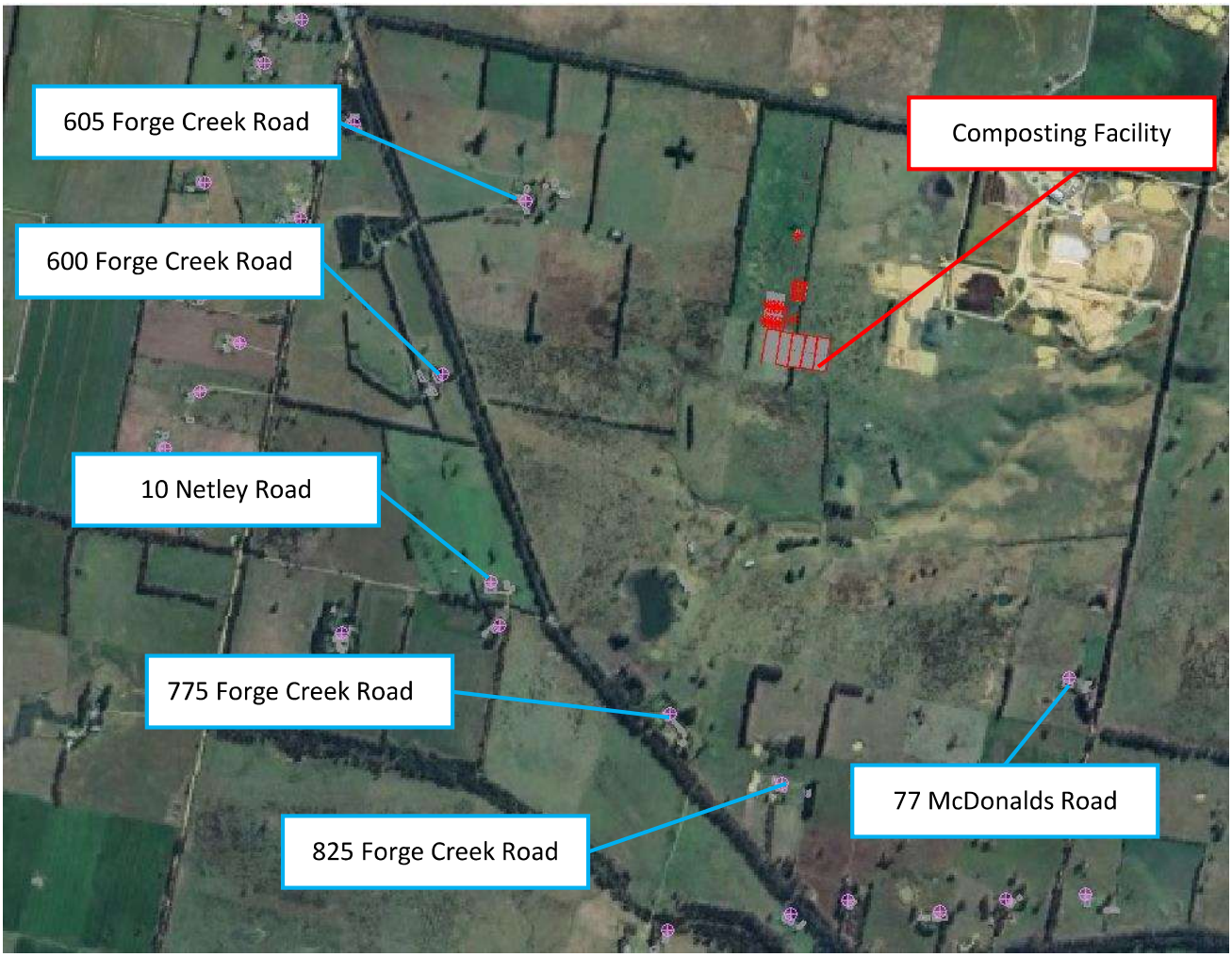

Figure 2.2 – Assessed Noise Sensitive Receptors Areas

3 Methodology

The Victorian Environment Protection Authority (EPA) sets policies, regulations and guidance to assist with preventing and controlling excessive noise within Metropolitan and Regional Victoria.

3.1 EPA Environment Protection Regulations 2021 & Environment Protection Act 2017

EPA Victoria was granted additional powers in 2021 to minimise the risk of harm to public health and the environment from pollution and waste. These powers come from the EPA Regulations 2021 and the Environment Protection Act 2017.

Through the Environment Protection Act, premises operators now have a General Environmental Duty (GED), which means that activities that pose a risk to human health and the environment must be understood. Importantly, the GED has the force of Law and is criminally enforceable.

These powers were established to allow EPA Victoria to legally force sites to make corrective actions before a breach of policy occurred in order to reduce the risk of harm to public health and the environment.

In 2021 EPA Victoria released Publication 1826 – N*oise limit and assessment protocol for the control of noise from commercial, industrial and trade premises and entertainment venues* (Noise Protocol), which is the governing policy for assessing environmental noise impacts in Victoria.

The Noise Protocol supersedes NIRV, SEPP N-1 and SEPP N-2. The Noise Protocol has two different assessment methodologies for assessing commercial industry or trade premises or entertainment venues.

Part 5.3 of the Environment Protection Regulations 2021 specifies in Division 1 the following:
"A person who conducts a prediction, measurement, assessment or analysis of noise within a noise sensitive area for the purpose of the Act [Environment Protection Act 2017] or these Regulations, must conduct the prediction, measurement, assessment or analysis in accordance with the Noise Protocol."

The Noise Protocol sets out how to establish noise targets, background noise levels and effective noise levels. The Environment Protection Regulations 2021 sets out what constitutes day, evening and night time periods, what is considered unreasonable or aggravated noise and base noise limits.

When undertaking an assessment, the Environment Protection Regulations 2021 are used in conjunction with the Noise Protocol to determine if a commercial, industrial or trade premises is emitting unreasonable or aggravated noise at noise sensitive areas.

Through the GED, EPA Victoria can legally force sites to reduce noise further, even if their noise emissions are compliant with Noise Protocol noise limits, if it is considered reasonable and practicable to eliminate or minimise those risks.

3.2 Noise Protocol Part I – Commercial, Industrial & Trade Premises

The facility is outside the Melbourne metropolitan area and therefore the assessment methodology of Part I of the Noise Protocol is applicable for any non-music noise emissions from the premises.

The goal of Part I of the Noise Protocol is to protect people from commercial, industrial and trade noise that may affect the beneficial use of noise sensitive area, which include normal domestic and recreational activities, including in particular, sleep in the night period.

Noise Limits are based on the combination of the background level, the land use zoning and the time period being measured. In order to determine the applicable noise targets for the industry under assessment, the land use zones must be determined for the 'generating zone' and the 'receiving zone' using the local planning scheme relevant to the area.

Adjustments are then made to determine the noise target based on distance between the source and receiver. The adjusted levels are compared to the base noise limits for each time period (day, evening and night) and the greater of the two is adopted.

A background noise level assessment may be performed in 'background-relevant areas' to account for any major background noise contributors such as freeways or highways. The noise targets are then compared to the background noise level checks adopting the following for each period:

Day – the greater of:

- The distance adjusted level or base noise level.
- The background level plus 8 dB(A).

Evening – the greater of:

- The distance adjusted level or base noise level.
- The evening background level plus 5 dB(A).

Night – the greater of:

- The distance adjusted level or base noise level.
- The night background level plus 5 dB(A).

To determine the existing noise levels emitted by the industry under assessment, the noise emissions are measured in accordance with the procedures of the Noise Protocol.

The background noise levels and the noise level from a facility are measured at a point within a "Noise Sensitive Area", usually the nearest residence or a site of complaint. The noise level is adjusted where necessary for factors that increase the annoyance of the noise such as tone, intermittency, and impulsive components. The final level is the Effective Noise Level, and is compared with the Noise Limit to determine if noise limits have been achieved. Noise Protocol Part I uses the time periods detailed in Table 3.1 on the following page.

Table 3.1 – Noise Protocol Part I Time Periods			
Period	**Parameters**		
	Monday to Friday	**Saturday**	**Sunday**
Day:	0700 – 1800	0700 - 1800	-
Evening:	1800 – 2200	1800 - 2200	0700 - 2200
Night:	2200 - 0700	2200 - 0700	2200 - 0700

3.3 Sleep Disturbance

A sleep disturbance noise criteria of L_{max} 60-65 dB(A) is also applicable to the site to be measured externally at the residential receivers to capture any short duration but high noise level events generated by the site. As the site does not operate during the night time period, sleep disturbance will not be considered further.

3.4 Low Frequency Noise EPA Criteria

EPA Publication 1996 – *Noise guidelines: Assessing low frequency noise* was released in conjunction with the Noise Protocol and is designed to assist those conducting an assessment of environmental noise from a commercial, industry or trade premises understand the risk of harm from the emission of Low Frequency Noise (LFN). It provides the methods for assessing LFN and how it may be addressed.

Importantly, the assessment of LFN using this guideline is separate from an assessment for compliance with the regulatory noise limits. LFN is defined as noise with a significant energy in one-third octave bands ranging between 10Hz and 160Hz.

LFN is described as rumbling or droning noise that can be generated from sites from a variety of sources such as pumps, compressors, diesel engines, fans, generators and boilers. Often this occurs due to vibration from plant items exciting the structure of a building and subsequently producing 'structure-borne' noise.

The threshold levels for assessing LFN is presented in Table 3.2 below.

Table 3.2 – Low Frequency Noise Criteria												
	Frequency Hz / dB(Z)											
	10	**12.5**	**16**	**20**	**25**	**31.5**	**40**	**50**	**63**	**80**	**100**	**125**	**160**
L_{eq} dB	92	89	86	77	69	61	54	50	50	48	48	46	44

If measured industry noise levels exceed these levels outdoors near a dwelling, then the criteria is not necessarily considered to be exceeded, the disturbance of the LFN depends on the following:

- Noise level
- Characteristics that can increase annoyance with the noise, for example, tonality or frequency modulation
- Baseline noise levels in the absence of the noise of concern
- Façade noise reductions

3.5 Noise Targets

It has been anticipated that the local area surrounding the proposed facility will not be background affected due to the absence of highways or other loud background noise sources. Therefore, background noise monitoring was not conducted as part of this assessment. Further, as the facility will only operate during the day time period, only the day time period noise target has been presented.

Noise targets for the proposed facility are as follows for the NSRs in Table 3.3 below.

Table 3.3 – Noise Protocol Rural Noise Target Calculation

Location	Generating Zone	Receiving Zone	Distance Between Zones	Zoning Level	Noise Target dB(A)
605 Forge Creek Road	Farming Zone (FZ1)	Farming Zone (FZ1)	0m	45	**45**
600 Forge Creek Road	Farming Zone (FZ1)	Farming Zone (FZ1)	0m	45	**45**
10 Netley Road	Farming Zone (FZ1)	Farming Zone (FZ1)	0m	45	**45**
775 Forge Creek Road	Farming Zone (FZ1)	Farming Zone (FZ1)	0m	45	**45**
825 Forge Creek Road	Farming Zone (FZ1)	Farming Zone (FZ1)	0m	45	**45**
77 McDonalds Road	Farming Zone (FZ1)	Farming Zone (FZ1)	0m	45	**45**

4 Noise Modelling

Noise emissions from the proposed facility at NSR locations and the surrounding environment have been predicted via noise modelling.

Noise modelling has been completed using the GDMR iNoise 3D noise modelling software package specialising in industrial noise calculations in the environment. The calculations are based on the ISO 9613 method and the recommendations of the new quality standard ISO 17534. Note that the ISO 9613-2 algorithm assumes favourable weather conditions for the propagation of noise, hence the assessment does not need to consider weather as any consideration will only reduce noise levels.

The model includes but is not limited to the following:

- Topographic data pertinent to the local area
- Location and elevation of relevant EGSC facility buildings and structures
- Location, elevation and directionality of major noise sources associated with the facility operations
- Location and elevation of noise sensitive receivers

- Location and elevation of miscellaneous buildings and structures in the propagation path between source and receiver

The above data has been sourced from the following locations:

- Topographical data from VicMap Elevation 10m contour maps.
- Local topographical data shown on proposed site plans.
- Composting facility locations and elevations provided by EGSC
- Noise source levels for site noise sources have been determined from ACA measurements of similar equipment, literature or manufacturer data.
- Noise sensitive receptor locations – Determined from topographical data and aerial photographs.
- Miscellaneous building locations – Determined from topographical data and aerial photographs.

The model is constructed from the following elements:

- Composting facility buildings
- Noise sources
- Industrial buildings not associated with the composting facility
- Residential buildings
- Ground absorption areas
- Calculation areas
- Contour elevation lines
- Grid surface elevation points
- Other terrain associated files

Appendix III details the sound power data of each noise source used in the noise modelling.

4.1 Noise Modelling Assumptions

Noise modelling of the proposed facility has been conducted under a variety of assumptions. These include:

1. Forced air-floor system includes a blower on the south side of each enclosed aerated composting system.
2. The Sorting Facility is constructed of sheet metal and the openings to the north and south are kept open during normal operation.
3. Approximately 4 to 6 trucks entering and exiting the site every hour.
4. The Trommel is located in the screening and product storing area and is loaded by the front end loader.
5. The slow speed grinder is located within the sorting shed and is loaded by the front end loader.
6. The tractor and windrow turner are located within the Compost Maturation Pad & Wind Rows area.
7. All equipment will be operating simultaneously.
8. The loader is a 198kW, 23t loader or similar.
9. The tractor is a 100kW unit or similar.

4.2 Noise Source Data

For more common equipment such as the front end loader, tractor and blowers; noise level data has been sourced from ACA measurements of similar equipment, literature or manufacturer data.

For the windrow turner, ACA has sourced data from another acoustic report by MWA Environmental from a development in Queensland which stated that the unit had a sound power level of 109 dB(A). However, upon investigating how the windrow turner works, ACA found footage of one in use. In that footage the windrow turner was not as loud as what would be expected for a noise source of 109 dB(A). Without further data though, ACA must rely on the noise levels within the acoustic report. It is noted that this noise level is likely conservative and actual operational noise levels from the windrow turner will be less than what is presented within this report.

The trommel and slow speed grinder noise levels were obtained in a similar manner than the windrow turner, with noise data from other acoustic reports used in this assessment.

4.3 Predicted Noise Levels

Table 4.1 details a comparison of modelled noise emissions and compares them to the Noise Protocol noise targets. From the results of the assessment, no adjustment for tonality, impulsiveness or intermittency is applicable.

Table 4.1 – Predicted Noise Emissions against Noise Targets

Location	Model Output Noise Level L_{Aeq} dB[1]	Time Period	Noise Protocol Day Time Noise Targets L_{Aeq} dB	Noise Target Achieved
605 Forge Creek Road	43	Day	45	Yes
600 Forge Creek Road	40	Day	45	Yes
10 Netley Road	38	Day	45	Yes
775 Forge Creek Road	39	Day	45	Yes
825 Forge Creek Road	38	Day	45	Yes
77 McDonalds Road	35	Day	45	Yes

1 – Note, predicted noise levels made using the ISO 9613-2 algorithm assumes favourable propagation of noise in all directions.

The loudest noise source at 605 Forge Creek Road is the Trommel located in the Screening and Product Storing Area, followed by the front end loader and the windrow turner. At 600 Forge Creek Road the windrow turner and trommel are equally the loudest noise sources. At the other locations, the windrow turner is the loudest noise source.

As mentioned above, it is likely the windrow turner is over represented in the predicted results when compared to the likely actual noise level when the facility is operational. Even with this potential over representation, the predicted noise emissions still achieve Noise Protocol noise targets at all locations.

The noise contour map for the predicted noise emissions from the composing facility is presented in Figure 4.1 on the following page.

Figure 4.1 – Noise Contour Map – Proposed Facility Condition

4.3.1 Noise Control Program

Based on the results of the assessment, no noise control treatments are required to reduce the noise further to achieve Noise Protocol noise targets. However, through the General Environmental Duty (GED) noise emissions are to be reduced further if it is considered reasonable and practicable to reduce the risk of harm to human health and the environment.

Background noise levels in rural areas can be very low and there is the potential for temperature inversions artificially elevating facility noise levels at the NSRs. Temperature inversions are an atmospheric condition when the temperature gradient in the air is inverted so that sound waves are refracted in the air back towards the ground, enhancing the distance over which noise propagates.

This can potentially result in the proposed composting facility being the dominant noise source in the area and causing complaints from the community, even though noise emissions may be compliant with Noise Protocol noise limits.

The potential for temperature inversions are relatively low with the wind rose for the local area showing calm winds only occur for 4% of the time. It is expected to occur only a handful of times per year.

A potential noise control treatment is to install an earth bund on the western and southern ends around the main high noise source areas. Optimisation of the earth bund height for noise control determined it should be at least 5 metres tall to provide a meaningful noise reduction to the most affected NSRs. Figure 4.2 details the approximate location of the earth bund.

Figure 4.2 – Potential Earth Bund Noise Control Treatment

The 5m tall earth bund will reduce noise levels at NSRs to the west and south by between 4 to 5 dB(A).

Note, the Noise Control Program is an evolving tool to assist in managing the proposed sites' noise emissions throughout the design stage of the project. The noise controls presented in this report are a first pass to provide a solution and path forward to reducing noise impacts.

It may be determined through consultation with EGSC representatives and suppliers that presented noise controls are not considered feasible or practicable due to other constraints. It is expected as the project design progresses, the noise controls may be required to be refined to achieve noise reductions through other means. Presented recommendations are not final, presented noise control treatments may need to be altered once more detailed information is provided and further analysis is conducted.

Note, all recommendations are presented to control noise emission only. Any recommendation should only be installed if safe to do so and will not impede the safe and productive operation of the site. Further advice may be required from other specialists about how to safely incorporate these treatments to reduce the risk of hazards from dust, structural, etc.

The noise contour map for the facility with the 5m tall earth bund is presented in Figure 4.3.

Figure 4.3 – Noise Contour Map with 5m Tall Earth Bund

4.4 Limitations of Computer Noise Modelling

Noise modelling software and the algorithms they use based on the ISO 9613 method and the recommendations of the new quality standard ISO 17534, do not generally have the capabilities to predict low frequency noise below 20 or 25 Hz depending on the software employed. The DGMR iNoise computer noise modelling package used for this project cannot have data inputted, analysed or predicted to below 25 Hz. For reference healthy humans with perfect hearing cannot generally hear noise below 20 Hz.

Further, any manufacturer data, literature or commonly used prediction algorithms do not cover the infrasound range (noise emissions below 20 Hz). Therefore, any calculations to determine sound transmission through building materials such as a wall, roof and door; any calculations when determining the acoustic absorption of a material; or calculations of any treatments; cannot take the infrasound range into account. For many methods and data, the low frequency range below 125 Hz is also limited, resulting in predicted noise levels in these ranges having greater uncertainty.

4.4.1 Uncertainty of Assessment Methodology

The computer noise modelling methodology carries various points of uncertainty such as the modelling program and algorithms, measurement data inputted into the model, the effectiveness of implemented treatments, and the variation of the noise sources compared to modelled conditions. The maximum margin of error in the total prediction system is detailed in Table 4.2.

Table 4.2 – Combined Uncertainty of Assessment

Parameter	Uncertainty dB(A)
Measurement of noise sources – Type 1 Microphone	± 0.5
Measurement vs Modelled Results at NSRs	± 3.0
Noise Control Program Treatment Implementation	± 1.8
Variation in Noise Sources	± 1.5
Combined Uncertainty	**± 3.8**

4.4.2 Modelling Uncertainty on Treated Site Predicted Results

With the uncertainty of the assessment being approximately 3.8 dB, it is predicted that once noise controls have been implemented, the facility with the maximum uncertainty would result in compliant noise levels at all residents under the noise control program condition.

5 Discussion

Results of the assessment show that the noise emissions from the proposed composting facility are able to be compliant with the Noise Protocol noise targets. The predicted results are under downwind conditions in all directions, representing typical worst-case conditions.

NSR locations surround the site to the south and west and meteorological effects can also influence noise levels. Down wind conditions can increase noise levels at NSRs, while up wind conditions can decrease noise levels.

The predicted noise emissions of the composting facility have been compared against the Noise Protocol Part I noise limits for NSRs surrounding the site, with outcomes as follows:

- Condition 1 – Proposed Condition:
  - Day time period noise targets achieved for all locations, with a low likelihood of complaint.

- Condition 2 – Noise Control Program Condition:
  - Day time period noise targets achieved for all locations, with a very low likelihood of complaint.

The dominant noise sources were investigated and a noise control treatment option in the form of a 5m tall earth bund were recommended in Section 4.1.3 of this report.

With noise targets predicted to be achieved, it is projected that noise emissions from the proposed composting facility will generally pose a low risk to human health and the environment. If the noise control treatments are implemented, this can be downgraded to a very low risk to human health and the environment.

APPENDIX I – Glossary of Terms

ABL	The Assessment Background Level (ABL) is the single figure background level representing each assessment period (daytime, evening and night-time) for each day. It is determined by calculating the 10th percentile (lowest 10 percent) background level (L_{A90}) for each period.
Adverse meteorological conditions	Meteorological conditions under which noise propagation is enhanced. This typically includes the presence of wind and temperature inversions.
A-weighting	Refers to an adjustment made to the noise level reading to take into account the tonal composition of a noise relative to the ear's response to the various tones that make up the noise. A-weighting is done to make sure that the noise level reading properly reflects the loudness of the noise as perceived by the "average" human ear.
Ambient Noise	Noise level of the environment without the influence of the site or facility in question on measurement results.
Background Noise	Background noise is the underlying hum of the noise environment without the influence of the site or facility in question on measurement results. It is characterised by the L_{90} descriptor meaning it is the arithmetic average of the quietest 10% of measured sounds of the measured period.
dB(A)	Decibel level with an applied A-weighting.
dB(Lin)	Decibel level with a Linear weighting i.e., no frequency weighting applied.
Decibel, dB	Decibel is a logarithmic unit used to describe the ratio of a signal level relative to a reference level and is used to describe sound pressure and sound power magnitudes.

Effective Noise Level	As defined by the Noise Protocol the Effective Noise Level is the level of noise emitted from the commercial, industrial or trade premises and adjusted if appropriate for character and duration.
Extraneous Noise	Extraneous noise is any noise which is not part of the noise being measured/assessed i.e., from the facility, premises or venue. Extraneous noise can include wind on vegetation or on the microphone, aircraft noise and wildlife.
L_1	The L_1 level is the noise level which is exceeded for 1% of the sample period. During the sample period, the noise level is below the L_1 level for 99% of the time.
L_{10}	The L_{10} level is the noise level which is exceeded for 10% of the sample period. During the sample period, the noise level is below the L_{10} level for 90% of the time. The L_{10} is a common noise descriptor for environmental noise and road traffic noise.
L_{50}	The L_{50} level is the noise level which is exceeded for 50% of the sample period. During the sample period, the noise level is below the L_{50} level for 50% of the time.
L_{90}	The L_{90} level is the noise level which is exceeded for 90% of the sample period. During the sample period, the noise level is below the L_{90} level for 10% of the time. This measure is commonly referred to as the background noise level.
L_{eq}	The equivalent continuous sound level (L_{eq}) is the energy average of the varying noise over the sample period and is equivalent to the level of a constant noise which contains the same energy as the varying noise environment. This measure is also a common measure of environmental noise and road traffic noise.
L_{max}	The maximum noise level over a sample period is the maximum level, measured on fast response, during the sample period.
L_n	The level exceeded for N% of the monitoring time.

Neutral meteorological conditions	Meteorological conditions under which no enhancements to noise propagation are presents, i.e., temperature inversions and windy conditions.
RBL	The Rating Background Level (RBL) for each period is the median value of the ABL values for the period over all of the days measured. There is therefore an RBL value for each period – daytime, evening and night-time.
Noise Limit	The Noise Limit is defined by the Noise Protocol as the maximum effective noise level allowed at a measurement point at a Noise Sensitive Receiver location.
Noise Protocol	EPA Victoria released Publication 1826 – N*oise limit and assessment protocol for the control of noise from commercial, industrial and trade premises and entertainment venues* (Noise Protocol), which is the governing policy for assessing environmental noise impacts in Victoria. The Noise Protocol supersedes NIRV, SEPP N-1 and SEPP N-2. The Noise Protocol has two different assessment methodologies for assessing commercial industry or trade premises or entertainment venues. The Noise Protocol sets out how to establish noise limits, background noise levels and effective noise levels. The Environmental Protection Regulations 2021 sets out what constitutes day, evening and night time periods, what is considered unreasonable or aggravated noise and base noise limits.
Noise Sensitive Receptor (NSR)	A Noise Sensitive Receptor (NSR) is an identified location where sensitive personal and/or activity are located, usually a dwelling where people sleep.
Octave & 1/3 octave bands	The spectrum of the sound split into distinct logarithmic frequencies in Hertz (HZ).
Sound Power Level (SWL)	A logarithmic measure of source acoustic power expressed in dB. The sound power level is fixed and inherent to the source similar to how electric power is inherent to an electrical device. The resulting sound pressure level due to a given sound power level is dependent

	on various environmental factors such as distance, acoustic shielding, meteorological factors etc.
Sound Pressure Level (SPL)	The sound pressure level is the logarithmic measure of the sound pressure measured at a specific point. Specifically, it is the logarithmic ratio of the reference pressure to the pressure of interest. The reference pressure is equivalent to the smallest fluctuation in pressure human ears can typically sense as sound. The intention of the SPL is to provide a measure of the sound pressure typically experienced by human ears.
Stability Class	The system of classifying atmospheric stability using considerations of solar radiation, surface wind speed, cloud cover and temperature lapse rate. The scale ranges from A (strongly unstable) to F (moderately stable)
Temperature Inversion	An atmospheric condition when the temperature gradient in the air is inverted so that sound waves are refracted in the air back towards the ground, enhancing the distance over which noise propagates.
Tonal Noise	Tonal noise is defined as a significant variation between a 1/3 octave band relative to its adjacent bands. An example would be a whistle blowing, where a large portion of the sound energy is focused into a narrow part of the noise spectrum.

The following table presents example activities with their typical sound pressure level in dB(A).

Sound Pressure Level dB(A)	Example Activity
120	Jet airplane take off at 100m
110	Amplified rock concert
100	Pneumatic drill/jackhammer at 1 metre
80	Heavy vehicle passes close by
60	Normal conversation at 1 to 2 metres
40	Quiet business office
20	Quiet bedroom at night
	Threshold of hearing

APPENDIX II – Planning Map

APPENDIX III – Noise Source Data

Table AIII.1 – Noise Source Sound Power Data

Source	Weighting	Noise Source Type	Lw dB	Frequency dB								
				63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	16 kHz
Front End Loader	A	Line	103	85	89	90	95	98	97	93	85	
Tractor	A	Line	108	81	83	98	100	106	99	90	82	
Windrow Turner	A	Line	108	95	98	99	103	103	100	98	89	
Trommel	A	Point	109	86	94	99	104	102	103	100	91	
Truck Movements	A	Moving Line	104	79	88	92	97	100	98	91	84	
Blower	A	Point	83	64	65	69	73	77	78	77	64	
Sorting Shed Walls Breakout	A	Area	85	62	76	78	79	83	73	66	54	
Sorting Shed Roof Breakout	A	Area	89	66	81	83	84	88	78	71	58	
Sorting Shed Openings Breakout	A	Area	95	59	76	83	88	93	85	79	70	
Slow Speed Grinder	A	Point	107	72	92	97	100	106	97	93	85	