ÖKOLOGIE CONSULTING

Greater Geelong Planning Scheme Amendment C401: Mt Duneed Community Care Accommodation Facility

Expert Witness Statement

Date of Statement: 11 May 2020

Statement Prepared For:
St Quentin Consulting

On Behalf Of:
Foundation 61 Inc

AUTHOR'S STATEMENT

Experts name and address

This Witness Statement has been prepared by Mr Mark Stockdale, Principal Ecologist, Okologie Consulting, of 32 Nicholson Crescent, Jan Juc, Victoria.

Qualifications and experience

I have over 15 years' experience as a consultant ecologist in Victoria and New South Wales. My current role is Principal Ecologist and Director of Okologie Consulting.

My project experience has included small to large-scale flora and fauna surveys, vegetation mapping, environmental impact assessments, habitat hectare assessments, pest plant and animal assessment and targeted surveys for threatened species. This work has included key road and infrastructure projects for Commonwealth and State government bodies and land development projects for private industry sectors. I have extensive working knowledge of flora species and ecological communities of southeastern Australia, with particular experience in the survey of native grasslands and grassy woodlands communities, providing specialist advice on their management and rehabilitation post construction.

I hold a Bachelor of Applied Science and a Bachelor of Natural Resource Management (Honours – Applied Ecology). I am an accredited assessor in Vegetation Quality Assessments (Registration Number: HH026).

Areas of expertise

- Plant identification.
- Flora and fauna surveys.
- Vegetation mapping.
- Habitat hectare assessments.
- Bushire hazard assessment.
- Land and environmental management plans.
- Pest plant and animal management plans.
- Strategic land use planning advice.
- Due diligence assessments.

Expertise to make the report

This statement has been prepared by Mr Mark Stockdale, Principal Ecologist, Okologie Consulting, of 32 Nicholson Crescent, Jan Juc, Victoria. This statement is based on the findings from previous investigations the author. My full curriculum vitae is attached as Appendix A. Relevant past experience includes:

- Expert evidence at VCAT and Planning Panel hearings for proposed developments including Planning Scheme Amendment C243 for New Corio Estate, 1030 Craigieburn Road, Craigieburn and 95 Devon Road, Devon Meadows.
- Completed over 1300 ecological investigations/assessments throughout Victoria and New South Wales.
- Author of over 1200 project reports, including several key infrastructure and development projects throughout Victoria.

Instructions in relation to this matter

I have been instructed by Brendan O'Loan of St Quentin Consulting to:

- To prepare an expert witness statement for Planning Panels Victoria for Amendment C401 on the ecological values of the site and the extent of native vegetation removal based on the development plan.
- Review the relevant objections for Amendment C401.

Facts, matters and assumptions upon which the report is based

I visited the site on 18 October 2018, 30 March 2020 and 4 May 2020. The field work undertaken on the site included an ecological assessment and a bushfire site hazard assessment. A native vegetation removal application was prepared based on the findings of the ecological assessment and the development plan.

A bushfire hazard assessment report was prepared to address to address Clause 13.02 *Bushfire Planning*. The expert evidence statement does not include any review of the bushfire hazard assessment report.

A copy of the Ecological Assessment (Okologie Consulting 2018a) is provided as Appendix B. A copy of the Native Vegetation Removal Application (Okologie Consulting 2020) is provided as Appendix C. A copy of the Bushfire Hazard Assessment (Okologie Consulting 2018b) is provided as Appendix D.

Documents and other materials taken into account

The following ecological reports, development plans and other relevant information were examined during the preparation of this Witness Statement, including:

- DELWP 2019. Planning Scheme Amendment C401. Proposal: Apply specific overlay controls; Include an incorporated document and make changes to Clauses 72.03 and 72.04 to allow for the Use and Development of a Community Care Accommodation Facility (Resident Alcohol and Drug Rehabilitation Facility), 120 Russells Road, Mount Duneed. Letter to City of Greater Geelong. Department of Environment, Land, Water and Planning.

- Geelong Field Naturalists Club 2019. Submission: Amendment C401: Russells Road Mount Duneed. Geelong Field Naturalists Club Inc. November 2019.

- Mark J Gratwick Architects 2020. Site Plan (Revision C). Proposed Development Womens Rehabilitation Centre.

- Okologie Consulting 2018a. 'Ecological Assessment for 120 Russells Road, Mount Duneed.' Report prepared by Okologie Consulting Pty Ltd for St Quentin Consulting.

- Okologie Consulting 2018b. 'Bushfire Hazard Assessment for 120 Russells Road, Mount Duneed.' Report prepared by Okologie Consulting Pty Ltd for St Quentin Consulting.

- Okologie Consulting 2020. 'Native Vegetation Removal Application for Greater Geelong Planning Scheme Amendment C401: Mount Duneed Community Care Accommodation Facility.' Report prepared by Okologie Consulting Pty Ltd for St Quentin Consulting.

Summary of the opinion of the expert

Ecological Assessment

The findings of the ecological assessment are detailed in Okologie Consulting (2018). I completed the field assessment on 18 October 2018. The objective of the assessment was to determine the extent of native vegetation and ascertain the presence/absence of any threatened flora or fauna species or associated habitats within the project area. The survey included assessment of Russells Road reserve.

The assessment identified the site was highly modified from agriculture use and comprised areas of exotic dominated grassland, interspersed with planted exotic trees present along the property boundary. Native vegetation consisted of two scattered trees and several modified patches of Grassy Woodland within the property and along Russells Road reserve. A revegetation area is partially located within the project area and extends onto the adjacent property to the east. No listed threatened flora or fauna species were recorded, and none are considered likely to occur due to the absence of suitable habitat (Okologie Consulting 2018).

The report recommended that the development design apply the principles of 'avoid and minimise' to reduce impacts to native vegetation (wherever practicable) during the planning phase. The effort to avoid and minimise impacts to native vegetation should focus on areas of native vegetation that have the most value (Okologie Consulting 2018).

The results and key assumptions of the ecological assessment are considered accurate and no changes to this report are required.

Native vegetation removal report

The findings of the native vegetation removal report are detailed in Okologie Consulting (2020). The report was prepared to address the application requirements for a permit under Clause 52.17 (Native Vegetation) and the *Guidelines for the removal, destruction or lopping of native vegetation* (the Guidelines) (DELWP 2017). The proposed removal of native vegetation was informed by the Site Plan (Revision C) (Mark J Gratwick Architects 2020).

The report identified the applicant had applied the principles of avoid and minimise during the design process. The original design identified the removal of 0.233 hectares of Grassy Woodland and two large scattered trees. The location of the effluent disposal area and carpark were amended to reduce the impact to 0.101 hectares of native vegetation. The amended design will retain 0.036 hectares of Grassy Woodland and two large trees (Okologie Consulting 2020).

The rehabilitation centre and proposed access road was located in the eastern section of the property to avoid impacting the historical archaeological site in the north western section. The development layout was amended to further reduce the impact to native vegetation, and there are no feasible opportunities to further avoid removal or minimise impacts to native vegetation without compromising the proposed development design (Okologie Consulting 2020).

The proposed removal of 0.101 hectares of native vegetation requires a permit under Clause 52.17 of the Greater Geelong Planning Scheme. An intermediate assessment pathway application was prepared to meet the requirements of the Guidelines. A permit will be required to remove native and exotic vegetation within the property under Environmental Significance Overlay – Schedule 1. A permit will not be required to remove planted native vegetation under Vegetation Protection Overlay – Schedule 1 (Okologie Consulting 2020).

The native vegetation removal report identified a general offset of 0.063 general habitat units is required. The general offset must have a minimum strategic biodiversity value score of 0.542 and be within the Corangamite Catchment Management Authority area or Greater Geelong City Council. The offset has been sourced as an allocated credit extract (third party offset) through the Native Vegetation Credit Register. Evidence of offset availability has been provided (Okologie Consulting 2020).

The results and key assumptions of the native vegetation removal report are considered accurate and no changes to this report are required.

Table 1: Response to Objector

Objector	Issue	Response
Geelong Field Naturalists Club	The proposed site contains healthy intact native grassland that extends further east towards Mt Duneed. The area forms part of the Victorian Volcanic Plain Bioregion and is designated as Grassy Woodland (EVC 175), one of the most threatened plant communities in the state and is listed as endangered in the relevant regulations	• NatureKit modelling identified the pre-1750 Ecological Vegetation Class (EVC) mapping for the site would have predominantly comprised of Plains Grassland (EVC 132), with Grassy Woodland (EVC 175) in the immediate surrounds (DELWP 2020). Native vegetation at the site was attributed to Grassy Woodland (EVC 175) based on floristic, life form and ecological characteristics, and soil type, and vegetation in the surrounding area. • Native grassland relates to *Heavier-soils* Plains Grassland (EVC 132-61) which is not present on the site itself. The DELWP bioregion and EVC mapping are subject to inherently broad environmental and ecological parameters used in the mapping process. Where the observed EVC was not reflective of what would be expected from EVC mapping and classification, it was attributed to the most appropriate EVC based on combination of its floristic, life form and ecological characteristics, and particular environmental conditions. • The Geelong Field Naturalists Club reference to 'healthy intact native grassland' is contradicted by identifying the site supports Grassy Woodland. Native grasses, forbs and herbs are an understorey component of the Grassy Woodland EVC. • The understorey vegetation on the site is modified from previous agricultural use and weed invasion, and does not represent an intact example of Grassy Woodland or Plains

Objector	Issue	Response
		Grassland, when comparing the condition and quality of the vegetation to the EVC benchmark for these communities.
Geelong Field Naturalists Club	The Greater Geelong Planning Scheme states "The native vegetation of the Victorian Volcanic Plain bioregion is one of the most depleted in the State. Only 4.5 per cent of the State still has a cover of native vegetation, and less than 1.2 per cent is in formal reserves." An ESO4 (Environmental Significance Overlay) has been applied to the Volcanic Plains north of the city to prevent the decline in extent and quality of native vegetation. Such an overlay would grant this site and the reserve at Mt Duneed, the same protection status.	• This statement relates to Schedule 4 to Clause 42.01 Environmental Significance Overlay (ESO4) Grasslands within the Werribee Plains Hinterland (DELWP 2020). The application of ESO4 is considered inappropriate in this instance, as the site does not support Plains Grassland EVC. • The site is subject to Schedule 1 to Clause 42.01 Environmental Significance Overlay (ESO1) Areas of Flora and Fauna Habitat and of Geological and Natural Interest (DELWP 2020). ESO1 relates to *significant flora and fauna habitats and areas of geological and natural interest*, which covers all vegetation (native and exotic) on the site.
Geelong Field Naturalists Club	Recent site surveys have shown that the site contains the best stand of *Arthropodium strictum* (Chocolate Lily) in Mt Duneed and Armstrong Creek. Five wildflower species were identified on site during October 2019 that were not included in Okologie Consulting's report. These include: *Burchardia umbellata* (Milkmaids), *Eryngium vesiculosum* (Prickfoot), *Veronica gracilis* (Slender Speedwell), *Calocephalus lacteus* (Milky Beauty-heads) and *Tricoryne elatior* (Yellow Rush-lily). All species listed above are	• Chocolate Lily *Arthropodium strictum* was recorded on site (Okologie Consulting 2018). It is acknowledged that individuals of species will be impacted by the proposed development. • Native flora species Milky Beauty-heads and Prickfoot do not occur on the site. They do, however, occur on the land to the immediate east of the site. The presence of these species on the adjacent land was confirmed on 4 May 2020. • Milkmaids, Slender Speedwell and Yellow Rush-lily were not observed on the site during the 2018 ecological assessment,

Objector	Issue	Response
	uncommon within the City of Greater Geelong area.	despite the survey being undertaken during spring. Flora surveys provide a 'snapshot' of vegetation at a point in time; however, the limitations of seasonal influence on the presence/absence of flora species (particularly annuals or cryptic species) must be considered. • These species are not listed as rare or threatened in Victoria under the *Advisory List of Rare or Threatened Plants in Victoria* (DEPI 2014).
Geelong Field Naturalists Club	The proposed development shows the intention to remove grasslands from the site. Removal would mean that the integrity of the larger grassland patch on adjacent land to the east is diminished.	• The site does not support Plains Grassland EVC. • The Grassy Woodland EVC for removal on the site covers 0.101 hectares. The removal of this vegetation will have minimal impact on the integrity of native vegetation to the east, which has been modified by previous agricultural use and regular slashing/mowing.
Geelong Field Naturalists Club	It is the GFNC view that the site and adjacent reserve comprising the endangered EVC, Grassy Woodland (EVC 175), should be granted protection based on City of Greater Geelong's Biodiversity Strategy. The report states (on page 5): *Biodiversity resources on private lands include some of the rarest and most threatened flora and fauna populations and vegetation types within the region - resources which are often not represented or poorly*	• The native vegetation to the east of the site comprises a highly modified and simplified cover of Common Wallaby-grass *Rytidosperma caespitosum*, Bristly Wallaby-grass *Rytidosperma setaceum* and Striped Wallaby-grass *Rytidosperma racemosum*, interspersed with exotic species. • The site is subject to ESO1 for *significant flora and fauna habitats and areas of geological and natural interest*, which covers Grassy Woodland EVC present on the site.

Objector	Issue	Response
	represented on public lands.	• The reference to Grassy Woodland EVC contradicts the previous reference to 'healthy intact native grassland' on the site.
Geelong Field Naturalists Club	The approach recommended in the Biodiversity Strategy to such areas (page 19) includes: • Identification and inclusion of secondary conservation areas into the Open Space Networks Strategy. • Identify areas of secondary biodiversity significance on private land and protect these areas through planning instruments, overlays, zoning, policy and other methods to protect those areas identified. • Apply Environmental Significance Overlays or Vegetation Protection Overlays to these areas.	• The site is subject to ESO1 for *significant flora and fauna habitats and areas of geological and natural interest*, which covers Grassy Woodland EVC present on the site. • The proposed development will retain 0.036 hectares of Grassy Woodland and two large scattered trees within the site.

Statement identifying any questions falling outside the expert's expertise; and a statement indicating whether the report is incomplete or inaccurate in any respect.

This report does not address any questions falling outside my expertise and I do not believe the report is incomplete or inaccurate in any respect.

Author's Declaration

I, Mark Stockdale, I have made all the inquiries that I believe are desirable and appropriate and no matters of significance which I regard as relevant have to my knowledge been withheld from the Panel.

Mark Stockdale
Director/Principal Ecologist
Okologie Consulting Pty Ltd

Appendix A: Curriculum Vitae

Mark Stockdale
Curriculum Vitae

32 Nicholson Crescent, Jan Juc, Victoria
0419 786 533 (03) 5261 5374
mark@okologie.com.au

Current Position

Director/Principal Ecologist – Okologie Consulting

Education

Bachelor of Applied Science – University of Melbourne
Bachelor of Science (Natural Resource Management), Honours (Applied Ecology) – University of Melbourne

Fields of Competence

- Flora and fauna surveys
- Vegetation quality assessments
- Strategic land use planning advice
- Offset management plans
- Vegetation mapping
- Bushfire management plans
- Due diligence assessments
- Kangaroo management plans
- Environment management plans
- Project management

Recent Employment Profile

- 2013 – Current Principal Ecologist – Okologie Consulting
- 2009 – 2013 Senior Ecologist/Resource Manager (Geelong) – Ecology and Heritage Partners
- 2006 – 2009 Project Ecologist/Senior Ecologist/Team Leader – AECOM Australia
- 2004 – 2006 Self-employed environmental consultant (NSW)
- 2003 – 2004 Field Ecologist – James Warren and Associates

Mark Stockdale
Curriculum Vitae

32 Nicholson Crescent, Jan Juc, Victoria
0419 786 533 (03) 5261 5374
mark@okologie.com.au

Professional Experience

Mark has over 13 years ecological consulting experience in Victoria and New South Wales. He has an extensive knowledge of flora and fauna species and ecological communities, and has worked on a wide variety of projects for Commonwealth and State government bodies and private industry sectors.

Mark's project experience has included small to large-scale ecological assessments, environmental impact assessments, vegetation quality assessments, vegetation mapping, pest plant and animal assessment and targeted surveys for threatened species. Mark has been the lead author and project manager of several key infrastructure and development projects throughout Victoria, including large scale land development, rail and road development and wind farms.

Selection of Consulting Reports

Mark was the primary author on the following reports:

- Ecological Assessment for Geelong Bacchus Marsh Road Upgrade, Balliang East. Report prepared by Okologie Consulting for VicRoads (2016).
- Ecological assessment for the proposed roundabout on the intersection of Surf Coast Highway, South Beach Road and Messmate Road, Torquay. Report prepared by Okologie Consulting for VicRoads (2016).
- Significant Residential Tree Project for Ocean Grove. Report prepared by Okologie Consulting for City of Greater Geelong (2015).
- Terrestrial Ecological Assessment, Beaumaris Motor Yacht Squadron Safe Harbour Redevelopment Project (Environmental Effects Statement). Report prepared by Okologie Consulting for Beaumaris Motor Yacht Squadron (2014).
- Terrestrial Ecological Assessment for Council Land at 690 Batman Road and Freehold Land at Glenrana Drive, Indented Head. Report prepared by Okologie Consulting for City of Greater Geelong (2014).
- Native Vegetation Precinct Plan, Horseshoe Bend Precinct. Published report to St Quentin Consultanting Pty Ltd (2013).
- Flora and Fauna Assessment and Net Gain Analysis, Horseshoe Bend Precinct, Armstrong Creek Growth Area. Published Report for St Quentin Consulting (2012).
- Native Vegetation Precinct Plan, Geelong Ring Road Employment Precinct. Published report to the City of Greater Geelong (2011).

Mark Stockdale
Curriculum Vitae

32 Nicholson Crescent, Jan Juc, Victoria
0419 786 533 (03) 5261 5374
mark@okologie.com.au

- Flora survey and condition monitoring of over 400 sites on public land throughout Victoria. Department of Sustainability and Environment (2012).
- Net Gain Assessment of Geelong Ring Road Employment Precinct. Published report to the City of Greater Geelong (2010).
- Vegetation Assessment Report for the Wyndham Vale Precinct Structure Area 40. Published report to the Growth Areas Authority by AECOM Australia (2009).
- Vegetation Assessment Report for the Truganina Precinct Structure Area 37 (Truganina Precinct Area). Published report to the Growth Areas Authority by AECOM Australia (2009).

Appendix B: Ecological Assessment

ÖKOLOGIE CONSULTING

Ecological Assessment

120 Russells Road, Mount Duneed

Prepared for:
St Quentin Consulting

Table of Contents

Document Information

Ecological Assessment for 120 Russells Road, Mount Duneed

Report prepared by Okologie Consulting Pty Ltd for St Quentin Consulting

Okologie Consulting Pty Ltd
32 Nicholson Crescent
Jan Juc, Victoria, 3228

ACN: 618 785 336
Web: www.okologie.com.au
Email: mark@okologie.com.au
Phone: 0419 786 533

Document Control

Version	Review	Author	Approval	Date
M506_RussellsRoad_Ecological_Assessment_20112018_V1	Luke Hynes	Mark Stockdale	Mark Stockdale	20/11/2018

Summary

Okologie Consulting Pty Ltd was engaged by St Quentin Consulting to undertake an ecological assessment for the property at 120 Russells Road, Mount Duneed.

The property is proposed for development as a Residential Alcohol and Drug Rehabilitation Centre. The ecological assessment was undertaken to determine the extent of native vegetation and ascertain the presence/absence of any threatened flora or fauna species or associated habitats within the project area.

The project area was highly modified from agriculture use and comprised areas of exotic dominated grassland, interspersed with planted exotic trees present along the property boundary. Native vegetation consisted of two scattered trees and several modified patches of Grassy Woodland within the property and along Russells Road reserve. A revegetation area is partially located within the project area and extends onto the adjacent property to the east.

No listed threatened flora or fauna species were recorded and none are considered likely to occur due to the absence of suitable of habitat. An *Environment Protection Biodiversity Conservation Act 1999* referral will not be required, as no Matters of National Environmental Significance are present, or likely to be significantly impacted by future works within the project area. A *Flora and Fauna Guarantee Act 1988* permit will be required if any protected flora species (Golden Wattle) are proposed for removal along Russells Road reserve.

The removal, destruction or lopping of any native vegetation will require a permit under Clause 52.17 (Native Vegetation) of the Greater Geelong Planning Scheme. A permit to remove native vegetation within the property will also be required under Environmental Significance Overlay – Schedule 1.

Russells Road reserve is subject to Vegetation Protection Overlay – Schedule 1, and it is recommended that future access design through Russells Road reserve review the provision to the overlay to determine the requirement for a permit to remove native vegetation.

The proposed removal of any patches of Plains Grassy Woodland or scattered indigenous trees will require a biodiversity application and associated offsets in accordance with the *Guidelines for the removal, destruction or lopping of native vegetation*.

It is recommended that the development design applies the principles of 'avoid and minimise' to reduce impacts to native vegetation (wherever practicable) during the planning phase. The effort to avoid and minimise impacts to native vegetation should focus on areas of native vegetation that have the most value.

1 Introduction

1.1 Project Background

Okologie Consulting Pty Ltd was engaged by St Quentin Consulting to undertake an ecological assessment for the property at 120 Russells Road, Mount Duneed.

The property is proposed for development as a Residential Alcohol and Drug Rehabilitation Centre. The ecological assessment was undertaken to determine the extent of native vegetation and ascertain the presence/absence of any threatened flora or fauna species or associated habitats within the project area.

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

1.2 Objectives

The objectives of the assessment were to:

- Assess terrestrial ecological values (i.e. vegetation communities, flora and fauna species and associated habitats) within the project area.
- Ensure ecological values are identified in the early planning phase.
- Identify environmental legislation and policy requirements.

1.3 Site Description

The project area comprises property at 120 Russells Road, Mount Duneed (Allot. L2 Sec. 21 Parish Of Duneed) and Russells Road reserve (Figure 1). It is bound by Russells Road to the north and the Mount Duneed Recreation Reserve to the south, east and west.

The topography consists of low undulating slopes. The project area was previously used for agriculture, and sections of the property comprise a modified landform and substrate. The surrounding land use includes agriculture and recreation. The site contains a revegetation area and planted exotic trees on the western and northern boundaries.

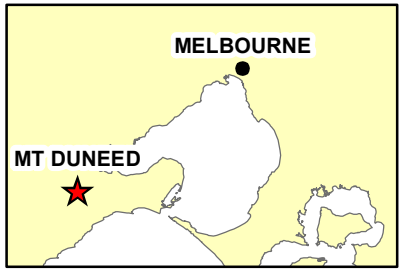
The project area occurs within the Victorian Volcanic Plain bioregion, the Corangamite Catchment Management Authority boundary and the City of Greater Geelong municipality (DELWP 2018a). The Native Vegetation Location mapping shows the project area occurs within Location 1 and 2 (DELWP 2018b).

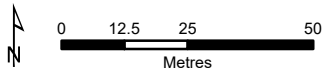
The project area is zoned Farming Zone (FZ) and is subject to Environmental Significance Overlay – Schedule 1 (ESO1), and is within a Designated Bushfire Prone Area. Russells Road reserve is subject to Vegetation Protection Overlay – Schedule 1 (VPO1) under the Greater Geelong Planning Scheme (DELWP 2018c).

Figure 1
Site Location
Russells Road, Mt Duneed

Legend

Subject Site





ÖKOLOGIE CONSULTING

2 Methodology

2.1 Species Information

Scientific and common names of flora species follow the Australian Plant Census (Australian National Botanic Gardens 2018). The names of terrestrial vertebrate fauna follow the Victorian Biodiversity Atlas (VBA) (DELWP 2018d). Vegetation communities follow the Ecological Vegetation Class (EVC) bioregion benchmarks (DELWP 2018a).

Native flora and fauna referred to as 'threatened' include species:

- Listed as critically endangered, endangered or vulnerable under the *Environment Protection Biodiversity Conservation Act 1999* (EPBC Act) (DoEE 2018).
- Listed as Threatened under the *Flora and Fauna Guarantee Act 1988* (FFG Act) (DELWP 2015).
- Listed as critically endangered, endangered, vulnerable or rare on Victoria's rare or threatened flora and fauna advisory lists (DEPI 2014; DSE 2013).

2.2 Desktop Assessment

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

- NatureKit for modelled biodiversity data (DELWP 2018a).
- Native Vegetation Information Management system (NVIM) (DELWP 2018b).
- Planning Schemes Online for planning information (DELWP 2018c).
- The VBA for threatened flora and fauna species records (DELWP 2018d).
- The Protected Matters Search Tool (PMST) for information relating to Matters of National Environmental Significance (MNES) (listed species and communities) under the EPBC Act (DoEE 2018).
- Relevant environmental legislation, policies and strategies.

2.3 Field Assessment

The field assessment was undertaken on 18 October 2018. The project area was traversed on foot to determine the extent of native vegetation and ascertain the presence of any listed threatened flora or fauna species or associated habitats. The extent of native vegetation was mapped using a Trimble Juno differential GPS (accuracy ± one metre post processing), with coordinates recorded to GDA 94 (WGS 84). EVCs were determined by reference to the relevant bioregion pre-1750 and extant EVC mapping and benchmarks descriptions (DELWP 2018a), and review of remnant vegetation in the local area.

Additional site based information collected during the field assessment included *the extent of native vegetation, large trees, native vegetation condition, Ecological Vegetation Class (EVC) and sensitive wetlands and coastal areas* (where present):

- The extent of native vegetation is the area of land covered by a patch and/or a scattered tree, and is measured in hectares.
- A large tree can be either a large scattered tree or a large tree contained within a patch. It is a native canopy tree with a Diameter at Breast Height (DBH) greater than or equal to the large tree benchmark for the relevant bioregional EVC.
- Native vegetation condition is a value based on a 'Habitat score' of between 0 and 1 that describes how close native vegetation is to its mature natural state.
- An Ecological Vegetation Class (EVC) is a native vegetation type classified on the basis of a combination of its floristics, lifeforms, and ecological characteristics, and follow the relevant bioregion benchmarks.
- Sensitive wetlands and coastal areas consist of
    - wetlands designated under the Convention on Wetlands of International Importance (the Ramsar Convention).
    - wetlands listed in the Directory of Important Wetlands of Australia.
    - Internationally important sites for Migratory Shorebirds of the East Asian-Australasian Flyway (DELWP 2017).

2.4 Assessment Guidelines

The *Guidelines for the removal, destruction or lopping of native vegetation* (the Guidelines) (DELWP 2017) has been incorporated into the Victoria Planning Provisions and all planning schemes in Victoria. The purpose of the Guidelines is to set out, and describe the application of Victoria's statewide policy in relation to assessing and compensating for the removal of native vegetation in response to permit applications under Clause 52.16 or 52.17.

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

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

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

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

A patch of native vegetation is:

- An area of vegetation where at least 25 per cent of the total perennial understorey plant cover is native[1]; or
- Any area with three or more native canopy trees[2] where the drip line[3] of each tree touches the drip line of at least one other tree, forming a continuous canopy; or
- Any mapped wetland included in the Current wetlands map.

A scattered tree is:

- A native canopy tree that does not form part of a patch (DELWP 2017).

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

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

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

Table 1: Assessment pathways

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

Source: DELWP (2017).

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

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

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

2.5 Limitations

The preferred survey period for undertaking vegetation assessments in Victoria is spring, which maximises the likelihood of detecting all flora species within a site. Flora surveys provide a valuable 'snapshot' of vegetation at a point in time; however, the limitations of seasonal influence on the presence/absence of flora species (particularly annuals or cryptic species) must be considered. The short duration of the assessment limited the opportunity to observe migratory, transitory or uncommon fauna species.

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

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

3 Results

3.1 Ecological Vegetation Classes

NatureKit modelling identifies the pre-1750 EVC mapping for the project area would have predominantly comprised of Plains Grassland (EVC 132), with Grassy Woodland (EVC 175) in the immediate surrounds. Extant (2005) EVC mapping shows a modified cover of Plains Grassland (DELWP 2018a).

Remnant vegetation within the project area was attributed to Grassy Woodland based on floristic, life form and ecological characteristics, and soil type.

3.2 Vegetation Condition

The project area was highly modified from agriculture use and comprised areas of exotic dominated grassland, interspersed with planted exotic trees present along the property boundary. Native vegetation consisted of two scattered trees and several modified patches of Grassy Woodland within the property, and along Russells Road reserve. The revegetation area is partially located within the project area and extends onto the adjacent property to the east (Figure 2).

Grassy Woodland

Grassy Woodland is described as *variable open eucalypt woodland to 15 metres tall or occasionally Sheoak/Acacia woodland to 10 metres tall over a diverse ground layer of grasses and herbs. The shrub component is usually sparse. It occurs on gentle slopes or undulating hills on a range of geologies* (DELWP 2018a).

The project area comprised numerous modified patches of Grassy Woodland dominated by Hedge Wattle *Acacia paradoxa*, with Sweet Bursaria *Bursaria spinosa* also present. The ground layer included a modified cover of indigenous Kangaroo Grass *Themeda triandra*, Kneed Spear-grass *Austrostipa bigeniculata*, Common Wallaby-grass *Rytidosperma caespitosum*, Bristly Wallaby-grass *Rytidosperma setaceum*, Variable Sword-sedge *Lepidosperma laterale*, Wattle Mat Rush *Lomandra filiformis*, Chocolate Lily *Arthropodium strictum* and Bidgee-Widgee *Acaena novae-zelandiae*. Exotic species included Sweet Vernal-grass *Anthoxanthum odoratum*, Cocksfoot *Dactylis glomerata*, Perennial Ryegrass *Lolium perenne*, Couch Grass *Cynodon dactylon*, Onion Grass *Romulea rosea,* Panic Veldt-grass *Ehrharta erecta* and Paspalum *Paspalum dilatatum.* Several Sugar Gum *Eucalyptus cladocalyx* trees were also present (Plates 1 and 2). Two scattered Drooping Sheoak *Allocasuarina verticillata* trees were also present.

Patches of Grassy Woodland along Russells Road reserve comprised a modified cover of Golden Wattle *Acacia pycnantha* and Hedge Wattle shrubs, with an understorey of

Soft Spear-grass *Austrostipa mollis*, Kneed Spear-grass, Common Wallaby-grass and Striped Wallaby-grass *Rytidosperma racemosum.* Exotic Perennial Veldt-grass *Ehrharta calycina*, Soursob *Oxalis pes-caprae* Yorkshire Fog-grass *Holcus lanatus*, Panic Veldt-grass *Ehrharta erecta*, Cocksfoot, Galenia *Galenia pubescens*, Bridal Creeper *Asparagus asparagoides*, Wild Radish *Raphanus raphanistrum* and Ribwort *Plantago lanceolata* were also present (Plates 3 and 4).

Planted Vegetation

Planted native trees and shrubs in the revegetation area included Sugar Gum, Swamp Gum *Eucalyptus ovata,* Black Wattle *Acacia mearnsii* and Silver Wattle *Acacia dealbata* (Plate 5). Planted exotic Radiata Pine *Pinus radiata* trees were present along the western and northern boundaries over an exotic dominated ground layer (Plate 6).

Predominantly Introduced Vegetation

Areas of exotic dominated grassland throughout the project area typically comprised Brown-top Bent *Agrostis capillaris*, Kikuyu *Cenchrus clandestinus*, Toowoomba Canary-grass *Phalaris aquatica*, Prairie Grass *Bromus catharticus*, Sweet Vernal-grass, Yorkshire Fog-grass, Perennial Ryegrass, Cocksfoot, Onion Grass, Couch Grass, Cape Weed *Arctotheca calendula* and Cat's Ear *Hypochoeris radicata*. A sparse cover (<5% overall perennial cover) of indigenous Bristly Wallaby-grass, Striped Wallaby-grass and Kangaroo Grass were occasionally present (Plates 7 and 8). This vegetation has been mapped as predominantly introduced vegetation (Figure 2).

3.3 Threatened Flora Species

No threatened flora species were recorded during the field assessment. The VBA (DELWP 2018d) contains records of five listed threatened flora species in local area (within a five kilometre radius of the project area). The PMST (DoEE 2018) identified 13 EPBC Act listed flora species or species habitats as likely to occur within the local area (Appendix 3; Figure 3). There is a low likelihood of occurrence for any listed threatened flora species due to the highly modified condition of habitat.

3.4 Fauna Survey Results

Twelve fauna species were recorded during the field assessment, comprising 10 native and two introduced species (all birds). Species observed included Wedge-tailed Eagle *Aquila audax*, Australian Magpie *Cracticus tibicen*, Australian Raven *Corvus coronoides*, Magpie-lark *Grallina cyanoleuca*, Superb Fairy-wren *Malurus cyaneus*, Grey Shrike-thrush *Colluricincla harmonica*, Welcome Swallow *Hirundo neoxena*, Willie Wagtail *Rhipidura leucophrys*, Grey Fantail *Rhipidura albiscapa*, and Australasian Pipit *Anthus novaeseelandiae*, as well as exotic Common Blackbird *Turdus merula* and European Skylark *Alauda arvensis*. The paucity of fauna species

recorded during the assessment was attributed to the highly modified condition of habitat.

3.5 Threatened Fauna Species

No listed threatened fauna species were recorded during the field assessment. The VBA (DELWP 2018d) contains records of 15 listed threatened fauna species in the local area. The PMST (DoEE 2018) identified 23 EPBC Act listed fauna species or species habitats (terrestrial) as likely to occur within the local area. There is a low likelihood of occurrence for any listed threatened fauna species due to the absence of suitable habitat (Appendix 4; Figure 4).

3.6 Fauna Habitat

The project area supports three main habitat types: shrubland, planted trees and shrubs, and exotic grassland.

Shrubland habitat typically provides perching, roosting and foraging habitat for smaller passerine bird species such as Brown Thornbill, Grey Fantail, New Holland Honeyeater, Grey Shrike-thrush and Superb Fairy-wren. Planted trees (i.e. Sugar Gum) provide habitat for common birds associated with modified habitats, including Australian Raven, Magpie-lark, Australian Magpie and Grey Shrike-thrush. Planted shrubs provide habitat for smaller birds such as Grey Fantail and Brown Thornbill. Areas of exotic grassland provides habitat for species such as Australasian Pipit, Galah, Welcome Swallow and Willie Wagtail.

3.7 Threatened Ecological Communities

Review of the PMST (DoEE 2018) identified four EPBC Act listed ecological communities may or are known to occur within the local area:

- *Grassy Eucalypt Woodland of the Victorian Volcanic Plain* (Critically Endangered).
- *Natural Temperate Grassland of the Victorian Volcanic Plain* (Critically Endangered).
- Natural Damp Grassland of the Victorian Coastal Plains (Critically Endangered).
- *White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland* (Critically Endangered).

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

3.8 Biodiversity Value of Native Vegetation

A summary of the biodiversity values within the project area is as follows:

- The project area supports 0.168 hectares of Grassy Woodland and two large scattered trees.
- Grassy Woodland has a bioregional conservation status of Endangered in the Victorian Volcanic Plain bioregion.
- The native vegetation condition modelling indicates areas of moderate value with condition scores of 0.41-0.60.
- The strategic biodiversity value modelling indicates areas of higher value with scores of 0.61-0.80 (DELWP 2018b).

Plate 1: Modified Grassy Woodland within the property

Plate 2: Modified Grassy Woodland within the property

Plate 3: Modified Grassy Woodland along Russells Road reserve

Plate 4: Modified Grassy Woodland along Russells Road reserve

Plate 5: Revegetation area

Plate 6: Planted exotic trees along the western boundary

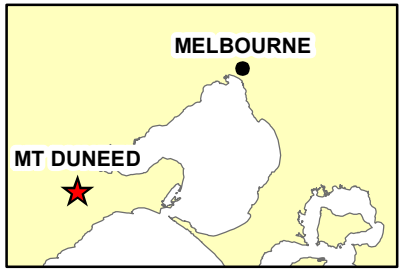
Plate 7: Exotic dominated vegetation

Plate 8: Exotic dominated vegetation

Figure 2
Ecological Values
120 Russells Road,
Mt Duneed

Legend

- Subject Site
- Grassy Woodland
- Planted Vegetation
- Revegetation Area
- Predominantly Introduced Vegetation
- Large Scattered Tree



N
0 5 10 20
Metres

ÖKOLOGIE CONSULTING

4 Environmental Legislation and Policy Implications

4.1 Environment Protection and Biodiversity Conservation Act 1999

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

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

No EPBC Act listed threatened flora or fauna species were recorded within the project area, and none are considered likely to occur due to the absence of suitable habitat resulting from previous agricultural use. Native vegetation within the project area does not meet the criteria for any EPBC Act listed ecological communities.

An EPBC Act referral to the Commonwealth Environment Minister is not required as no MNES are present or likely to be significantly impacted by future development of the project area.

4.2 Flora and Fauna Guarantee Act 1988

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

A permit is required from DELWP to 'take' (kill, injure, disturb or collect) listed flora species, flora species that are members of listed threatened communities or protected flora from public land. Protected flora species includes all members of the following plant families Asteraceae (Daisies), Epacridaceae (Heaths) and Orchidaceae (Orchids), all clubmosses, ferns and fern allies (excluding *Pteridium esculentum*). All species of the following genera are also protected: *Acacia* (excluding *Acacia dealbata, Acacia decurrens, Acacia implexa, Acacia melanoxylon* and *Acacia paradoxa*), *Baeckea*, *Calytrix*, *Correa*, *Darwinia*, *Eremophila*, *Eriostemon, Gompholobium, Grevillea, Prostanthera, Sphagnum, Thryptomene, Thysanotus* and *Xanthorrhoea* (DELWP 2015).

One FFG Act listed protected flora species (Golden Wattle) was recorded along Russells Road reserve and within the property. An FFG Act permit will be required if any Golden Wattle shrubs are proposed for removal along Russells Road reserve. An FFG Act permit is generally not required for removal of protected flora species on private property.

4.3 Planning and Environment Act 1987

The purpose of the *Planning and Environment Act 1987* is to establish a framework for planning the use, development and protection of land in Victoria. Native vegetation clearance is managed under the Act and through municipal planning schemes (DELWP 2018c).

A permit is required under Clause 52.17 (Native Vegetation) to remove, destroy or lop native vegetation, including dead vegetation, unless the action is exempt. A permit application must be categorised as a basic, intermediate or detailed assessment pathway as specified in the Guidelines (DELWP 2017a). Each assessment pathway has specific application requirements and decision guidelines that must be considered by the responsible authority.

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

- To remove, destroy or lop native vegetation in the Detailed Assessment Pathway
- To remove, destroy or lop native vegetation if a Property Vegetation Plan applies to the site.
- To remove, destroy or lop native vegetation on Crown land, which is occupied or managed by the responsible authority (DELWP 2017a).

Clause 52.17 – Native Vegetation

The project area supports 0.168 hectares of Grassy Woodland and two scattered indigenous trees (Figure 2). Areas of exotic pasture that contain scattered indigenous grasses (<5% overall perennial cover) do not meet the cover threshold for a patch under the Guidelines (DELWP 2017).

The proposed removal, destruction or lopping of any native vegetation will require a permit under Clause 52.17 (Native Vegetation) of the Greater Geelong Planning Scheme (DELWP 2018c). The proposed removal of any patches of native vegetation (Grassy Woodland) or scattered indigenous trees will require a biodiversity application in accordance with the Guidelines (DELWP 2017). The project area is mapped as Location 1 and 2, which requires either a basic, intermediate or detailed biodiversity application, depending on the location and extent of native vegetation proposed for removal (DELWP 2018a).

It is recommended that the development design applies the principles of 'avoid and minimise' to reduce impacts to native vegetation (where practicable) during the planning phase. The effort to avoid and minimise impacts to native vegetation should focus on areas of native vegetation that have the most value (refer to Section 3.8).

Environmental Significance Overlay – Schedule 1

The property is subject to ESO1 (Areas Of Flora And Fauna Habitat And Of Geological And Natural Interest). The provision to ESO1 specifies a permit is not required to remove, destroy or lop vegetation that is:

- Listed within the incorporated document: Environmental Weeds, City of Greater Geelong, September 2008.
- Exotic and native vegetation if within 10 metres of a dwelling on a lot exceeding 0.4 hectares.

A permit will be required to removal vegetation (native or exotic) under ESO1 in this instance, as the permit exemption will not apply to the proposed development.

Vegetation Protection Overlay – Schedule 1

Russells Road reserve is subject to VPO1 (Significant Roadsides And Linear Reserves). The provision to VPO1 specifies a permit is required to remove, destroy or lop any vegetation except where:

- The removal of vegetation is carried out in conjunction with an approved development in accordance with an endorsed plan.
- The removal of vegetation is to enable the formation of a single crossing and access driveway with a maximum width of 4.2 metres. Consultation is still required with the responsible authority to minimise the loss of significant indigenous vegetation.
- The vegetation presents an immediate risk of personal injury or damage to property including the culling of single trees within 3 metres of a dwelling or outbuilding.
- Any tree or branch of a tree impairs the access of motor vehicles along any existing or approved access track, provided that such access track has a width no greater than 4 metres.
- It is not native vegetation or listed within the incorporated document Environmental Weeds, City of Greater Geelong, September 2008

It is recommended that future access design through Russells Road reserve review the provision to VPO1 to determine the requirement for a permit to remove native vegetation.

5 Conclusion

The project area was highly modified from agriculture use and comprised areas of exotic dominated grassland, interspersed with planted exotic trees present along the property boundary. Native vegetation consisted of several modified patches of Grassy Woodland within the property and along Russells Road reserve. The revegetation area is partially located within the project area and extends onto the adjacent property to the east.

No listed threatened flora or fauna species were recorded and none are considered likely to occur due to the absence of suitable of habitat. An EPBC Act referral will not be required, as no MNES are present, or likely to be significantly impacted by future works within the project area. A FFG Act permit will be required if any protected flora species (Golden Wattle) are proposed for removal along Russells Road reserve.

The removal, destruction or lopping of any native vegetation will require a permit under Clause 52.17 (Native Vegetation). A permit to remove native vegetation within the property will also be required under ESO1 of the Greater Geelong Planning Scheme. It is recommended that future access design through Russells Road reserve review the provisions under VPO1 to determine the requirement for a permit to remove native vegetation.

The removal of any patches of Grassy Woodland or scattered indigenous trees will also require a biodiversity application and associated offsets in accordance with the Guidelines.

It is recommended that the development design applies the principles of 'avoid and minimise' to reduce impacts to native vegetation (where practicable) during the planning phase. The effort to avoid and minimise impacts to native vegetation should focus on areas of native vegetation that have the most value.

6 References

Australian National Botanic Gardens 2018. Australian Plant Census. http://www.anbg.gov.au/cpbr/databases/apni-search-full.html

DELWP 2017. *Guidelines for the removal, destruction or lopping of native vegetation*. Department of Environment, Land, Water and Planning.

DELWP 2018a. NatureKit. Department of Environment, Land, Water and Planning: http://maps.biodiversity.vic.gov.au

DELWP 2018b. Native Vegetation Information Management system tool. Department of Environment, Land, Water and Planning: https://nvim.delwp.vic.gov.au

DELWP 2018c. Planning Schemes Online. Department of Environment, Land, Water and Planning: http://planning-schemes.delwp.vic.gov.au

DELWP 2018d. Victorian Biodiversity Atlas. Version 3.2.5. Publication date: 30 October 2018. Department of Environment, Land, Water and Planning: https://vba.dse.vic.gov.au

DEPI 2013. *Flora and Fauna Guarantee Act - Victorian Threatened Communities*. Department of Environment and Primary Industries: http://www.depi.vic.gov.au

DEPI 2014. *Advisory List of Rare or Threatened Plants in Victoria*. Department of Sustainability and Environment, Victoria.

DOE 2013. *Matters of National Environmental Significance – Significant Impact Guidelines: Significant impact guidelines 1.1.* Environment Protection and Biodiversity Conservation Act 1999. Department of the Environment, Canberra: http://www.environment.gov.au

DoEE 2018. Protected Matters Search Tool. Department of Environment: http://www.environment.gov.au/epbc/pmst/

DSE 2013. Advisory List of Threatened Vertebrate Fauna in Victoria. Department of Environment and Primary Industries: http://www.dse.vic.gov.au

Appendices

Appendix 1 – Likelihood of Occurrence

One or more of the following criteria was used to establish the likelihood of occurrence for threatened flora and fauna species within the project area.

Present: Recorded during the field survey.

High likelihood:

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

Moderate likelihood:

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

Low Likelihood:

- Species likely to occur as a rare or opportunistic visitor.
- Few previous records within the local area.
- Habitat within the site is highly modified and does represent the species preferred habitat.

Unlikely:

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

The outcome of the assessment of likelihood of occurrence for threatened flora is Appendix 3 and Appendix 4 for threatened fauna.

Appendix 2 – Flora Species Recorded

Table 2: Flora species recorded during the field assessment

Scientific Name	Common Name
Acacia dealbata	Silver Wattle#
Acacia mearnsii	Black Wattle#
Acacia paradoxa	Hedge Wattle
Acacia pycnantha	Golden Wattle
Acaena echinata	Sheep's Burr
Acaena novae-zelandiae	Bidgee-widgee
Agrostis capillaris	Brown-top Bent*
Aira caryophyllea subsp. *caryophyllea*	Silvery Hair-grass*
Allocasuarina verticillata	Drooping Sheoak
Arthropodium strictum	Chocolate Lily
Arctotheca calendula	Cape Weed*
Austrostipa bigeniculata	Kneed Spear-grass
Austrostipa mollis	Soft Spear-grass
Avena fatua	Wild Oat*
Brassica fruticulosa	Twiggy Turnip*
Bromus catharticus	Prairie Grass*
Bromus hordeaceus subsp. *hordeaceus*	Soft Brome*
Bursaria spinosa	Sweet Bursaria
Chenopodium murale	Sowbane*
Cirsium vulgare	Spear Thistle**
Cynodon dactylon var. *dactylon*	Couch*
Dactylis glomerata	Cocksfoot*
Dianella admixta	Black-anther Flax-lily
Ehrharta erecta var. *erecta*	Panic Veldt-grass*
Eucalyptus camaldulensis	River Red-gum#
Eucalyptus cladocalyx	Sugar Gum#
Eucalyptus ovata	Swamp Gum#
Eucalyptus spp.	Eucalyptus #
Galenia pubescens var. *pubescens*	Galenia*
Genista monspessulana	Cape Broom**
Helminthotheca echioides	Ox-tongue*
Holcus lanatus	Yorkshire Fog*
Hordeum murinum	Barley-grass*
Hypochaeris radicata	Flatweed*
Juncus subsecundus	Finger Rush
Lachnagrostis filiformis	Common Blown-grass
Lepidosperma laterale	Variable Sword-sedge
Lolium perenne	Perennial Rye-grass*

Scientific Name	Common Name
Lomandra filiformis	Wattle Mat Rush
Lycium ferocissimum	African Boxthorn**
Medicago polymorpha	Burr Medic*
Nassella trichotoma	Serrated Tussock**
Oxalis pes-caprae	Soursob**
Paspalum dilatatum	Paspalum*
Paspalum distichum	Water Couch*
Phalaris aquatica	Toowoomba Canary-grass*
Plantago coronopus	Buck's-horn Plantain*
Plantago lanceolata	Ribwort*
Pinus radiata	Radiata Pine*
Rosa rubignosa	Briar Rose**
Romulea rosea	Onion Grass*
Rumex crispus	Curled Dock*
Rytidosperma caespitosum	Common Wallaby-grass
Rytidosperma racemosum var. *racemosum*	Slender Wallaby-grass
Rytidosperma setaceum	Bristly Wallaby-grass
Sonchus asper s.l.	Rough Sow-thistle*
Sonchus oleraceus	Common Sow-thistle*
Themeda triandra	Kangaroo Grass
Trifolium angustifolium var. *angustifolium*	Narrow-leaf Clover*
Trifolium striatum	Knotted Clover*
Trifolium subterraneum	Subterranean Clover*
Vulpia bromoides	Squirrel-tail Fescue*
Vulpia myuros	Rat's-tail Fescue*

Notes: *Exotic species; #Planted species; **Listed noxious weed;

Appendix 3 – Threatened Flora Records

Table 3. Threatened flora records

Scientific Name	Common Name	Status	Records#	Likely Occurrence	Comments
Eucalyptus X studleyensis	Studley Park Gum	en	1	U	No suitable habitat present
Cladium procerum	Leafy Twig-sedge	r	4	U	No suitable habitat present
Coronidium gunnianum	Pale Swamp Everlasting	vu	1	U	No suitable habitat present
Eucalyptus leucoxylon subsp. *connata*	Melbourne Yellow-gum	vu X	88	U	No suitable habitat present
Eucalyptus leucoxylon subsp. *bellarinensis*	Bellarine Yellow-gum	en L	5	U	No suitable habitat present

Notes: Threatened species records were sourced from the VBA (DELWP 2018d), within a 5 km radius of the project area. Likelihood of occurrence: P = Present; H = High likelihood; M = Moderate likelihood; L = Low likelihood; U = Unlikely to occur (Appendix 1).

EPBC Act listed species (DoEE 2018)
Cr Critically Endangered
En Endangered
V Vulnerable

FFG Act listed species (DELWP 2015)
L Listed as Threatened

DEPI listed species (DEPI 1014):
cr Critically endangered
e Endangered
v Vulnerable
r Rare

Appendix 4 – Threatened Fauna Records

Table 4. Threatened fauna records

Scientific Name	Common Name	Status	Records#	Likely Occurrence	Comments
Porzana pusilla	Baillon's Crake	vu L	1	U	Absence of suitable habitat
Sternula nereis	Fairy Tern	VU en L	1	U	Absence of suitable habitat
Grus rubicunda	Brolga	vu L	2	U	Absence of suitable habitat
Ardea alba	Great Egret	vu L	6	U	Absence of suitable habitat
Botaurus poiciloptilus	Australasian Bittern	EN en L	1	U	Absence of suitable habitat
Aythya australis	Hardhead	vu	2	U	May flyover occasionally
Oxyura australis	Blue-billed Duck	en L	1	U	May flyover occasionally
Biziura lobata	Musk Duck	vu	1	U	May flyover occasionally
Accipiter novaehollandiae	Grey Goshawk	vu L	2	U	Absence of suitable habitat
Ninox connivens	Barking Owl	en L	2	U	Absence of suitable habitat
Ninox strenua	Powerful Owl	vu L	1	U	Absence of suitable habitat
Lathamus discolor	Swift Parrot	CR en L	1	U	Absence of suitable habitat
Hirundapus caudacutus	White-throated Needletail	vu	2	U	May flyover occasionally
Pteropus poliocephalus	Grey-headed Flying-fox	VU vu L	1	U	Absence of suitable habitat
Litoria raniformis	Growling Grass Frog	VU en L	1	U	Absence of suitable habitat

Notes: Threatened species records were sourced from the VBA (DELWP 2018d), within a 5 km radius of the project area. Likelihood of occurrence: H = High likelihood; M = Moderate likelihood; L = Low likelihood; U = Unlikely to occur (Appendix 1).

EPBC Act listed species (DoEE 2018)
Cr Critically Endangered
En Endangered
V Vulnerable

FFG Act listed species (DELWP 2015)
L Listed as Threatened

DEPI listed species (DSE 2013):
cr Critically endangered
e Endangered
v Vulnerable
r Rare

Figure 3
Threatened Flora Species within 5km of Subject Site
Russells Road, Mt Duneed

Legend

- Subject Site
- Bellarine Yellow-gum
- Leafy Twig-sedge
- Melbourne Yellow-gum
- Mugga
- Pale Swamp Everlasting
- Studley Park Gum

N

0 425 850 1,700
Metres

ÖKOLOGIE CONSULTING

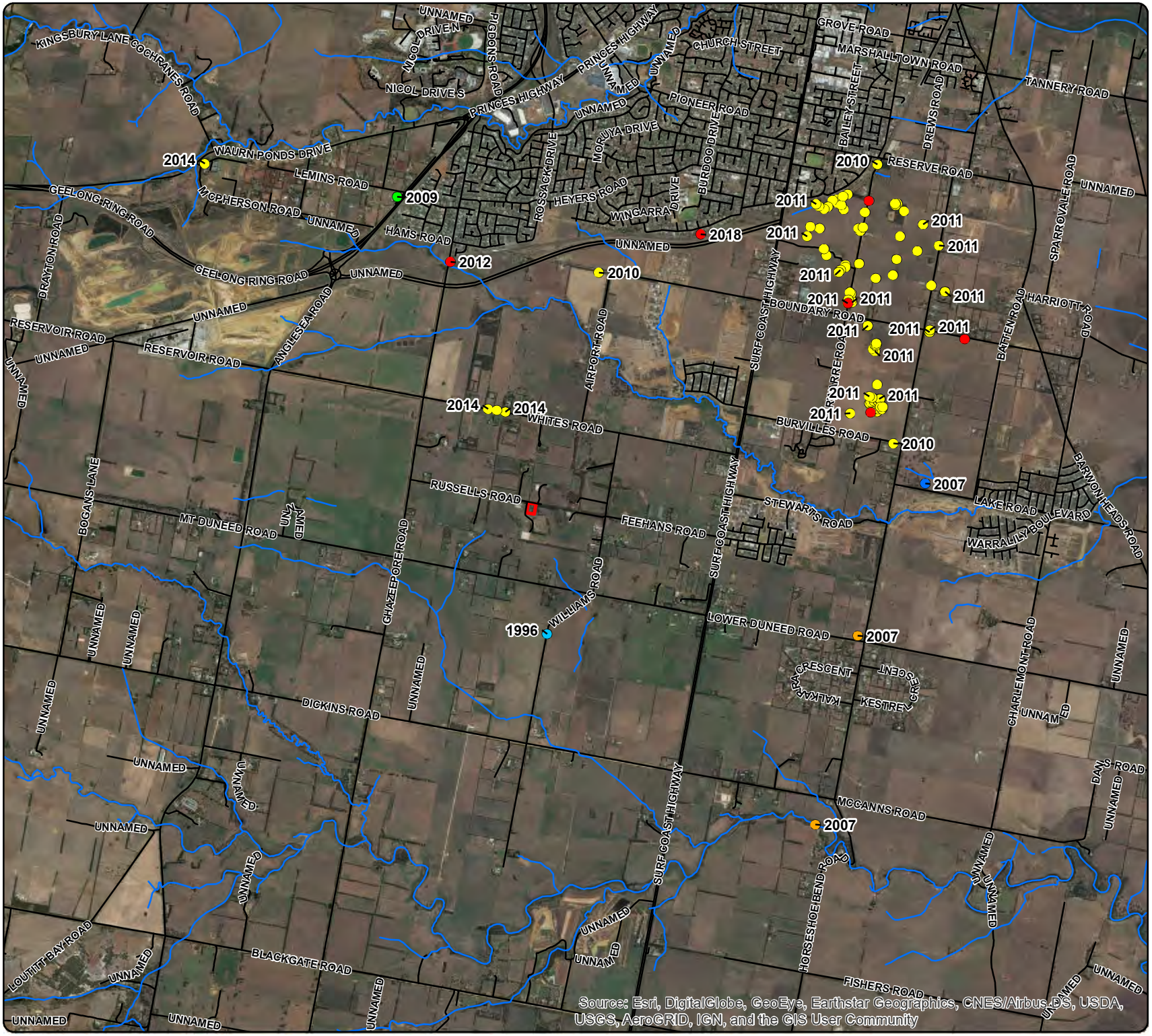
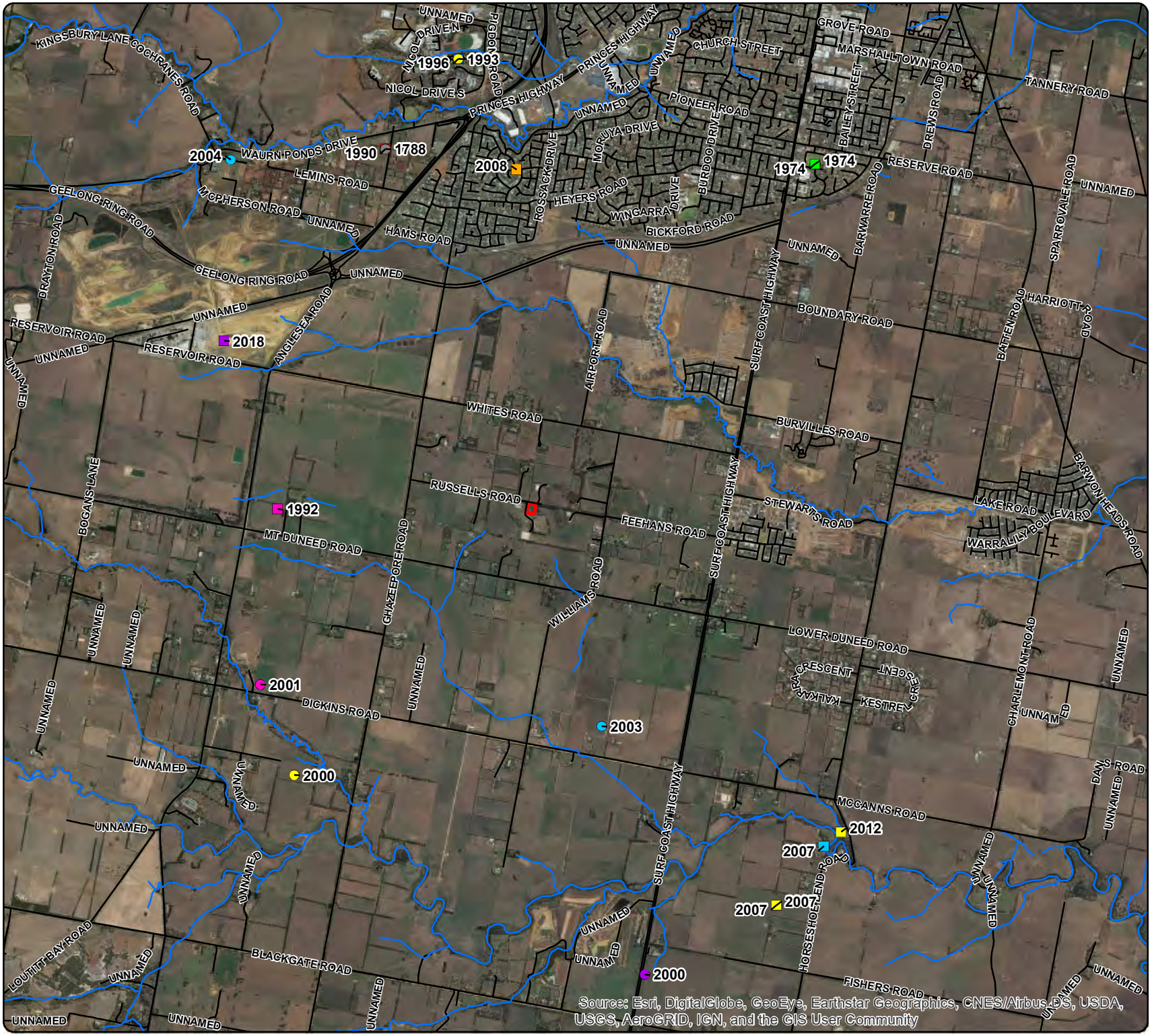


Figure 4
Threatened Fauna Species within 5km of Subject Site
Russells Road, Mt Duneed



Legend

- Subject Site
- Australasian Bittern
- Baillon's Crake
- Barking Owl
- Blue-billed Duck
- Brolga
- Fairy Tern
- Great Egret
- Grey Goshawk
- Grey-headed Flying-fox
- Growling Grass Frog
- Hairy Burrowing Crayfish
- Hardhead
- Musk Duck
- Powerful Owl
- Swift Parrot
- Tussock Skink
- White-throated Needletail

0 425 850 1,700
Metres

ÖKOLOGIE CONSULTING

Appendix C: Native Vegetation Removal Application

ÖKOLOGIE CONSULTING
www.okologie.com.au

8 May 2020

Brendan O'Loan
MPIA/Senior Town Planner
St Quentin Consulting
51 Little Fyans Street
Geelong, VIC, 3220

Native Vegetation Removal Application for Greater Geelong Planning Scheme Amendment C401: Mount Duneed Community Care Accommodation Facility

Introduction

Okologie Consulting Pty Ltd was engaged by St Quentin Consulting on behalf of Foundation 61 Inc to prepare a native vegetation removal application for the Greater Geelong Planning Scheme Amendment C401: Mount Duneed Community Care Accommodation Facility.

The proposed Community Care Accommodation Facility is subject to a planning scheme amendment under the Greater Geelong Planning Scheme. Okologie Consulting previously completed an ecological assessment and bushfire hazard assessment of the property, which identified the extent of ecological values and the bushfire hazard for a site within a designated bushfire prone area (Okologie Consulting 2018a; 2018b).

The proposed removal of native vegetation requires a permit under Clause 52.17 (Native Vegetation) of the Greater Geelong Planning Scheme. This report has been prepared to respond to the application requirements under the *Guidelines for the removal, destruction or lopping of native vegetation* (the Guidelines) (DELWP 2017).

Site Description

The project area comprises property at 120 Russells Road, Mount Duneed (Allot. L2 Sec. 21 Parish of Duneed) and Russells Road reserve (Figure 1). It is bound by Russells Road to the north and the Mount Duneed Recreation Reserve to the south, east and west.

The topography consists of low undulating slopes. The project area was previously used for agriculture, and sections of the property comprise a modified landform and substrate. The surrounding land use includes agriculture and recreation. The property contains a revegetation area and planted exotic trees.

The project area occurs within the Victorian Volcanic Plain bioregion, the Corangamite Catchment Management Authority boundary and the City of Greater Geelong municipality (DELWP 2020a). The Native Vegetation Location mapping shows the project area occurs within Location 1 and 2 (DELWP 2020b).

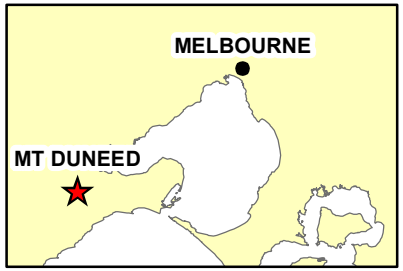
The project area is zoned Farming Zone (FZ) and is subject to Environmental Significance Overlay – Schedule 1 (ESO1) and is within a Designated Bushfire Prone

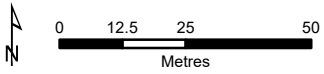
Area. Russells Road reserve is subject to Vegetation Protection Overlay – Schedule 1 (VPO1) under the Greater Geelong Planning Scheme (DELWP 2020c).

Figure 1
Site Location
120 Russells Road,
Mt Duneed

Legend

Subject Site





ÖKOLOGIE CONSULTING

Methodology

Field Assessment

The field assessment was undertaken on 18 October 2018 (Okologie Consulting 2018a). The extent of native vegetation was mapped using a Trimble Catalyst DA1 differential GPS (sub-metre accuracy post-processing) and recorded to MGA 94, Zone 55 coordinate system. Ecological Vegetation Classes (EVCs) were determined by reference to the relevant bioregion EVC mapping and benchmarks descriptions (DELWP 2020a).

Assessment Guidelines

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

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

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

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

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

A patch of native vegetation is:

- An area of vegetation where at least 25 per cent of the total perennial understorey plant cover is native[1]; or
- Any area with three or more native canopy trees[2] where the drip line[3] of each tree touches the drip line of at least one other tree, forming a continuous canopy; or
- Any mapped wetland included in the Current wetlands map.

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

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

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

A scattered tree is:

- A native canopy tree that does not form part of a patch (DELWP 2017).

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

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

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

Table 1: Assessment pathways

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

Source: DELWP (2017).

Limitations

The project area has been subject to a previous ecological assessment (Okologie Consulting 2018a), which included threatened species information and environmental legislative requirements. As a result, this information has not been readdressed in this report. The information outlined in this report relies on the accuracy of ecological database information, GIS layers and spatial imagery. To minimise potential errors, the most current available data was obtained from relevant sources.

Results

Ecological Vegetation Classes

NatureKit modelling identifies the pre-1750 EVC mapping for the project area would have predominantly comprised of Plains Grassland (EVC 132), with Grassy Woodland (EVC 175) in the immediate surrounds. Extant (2005) EVC mapping shows a modified cover of Plains Grassland (DELWP 2020a). Remnant vegetation within the project area was attributed to Grassy Woodland based on floristic, life form and ecological characteristics, and soil type.

Vegetation Assessment

The project area was highly modified from agriculture use and comprised areas of exotic dominated grassland, interspersed with planted exotic trees present along the property boundary. Native vegetation consisted of two scattered trees and several modified patches of Grassy Woodland within the property, and along Russells Road reserve. The revegetation area is partially located within the project area and extends onto the adjacent property to the east (Figure 2).

The project area comprised numerous modified patches of Grassy Woodland dominated by Hedge Wattle *Acacia paradoxa*, with Sweet Bursaria *Bursaria spinosa* also present. The ground layer included a modified cover of indigenous Kangaroo Grass *Themeda triandra*, Kneed Spear-grass *Austrostipa bigeniculata*, Common Wallaby-grass *Rytidosperma caespitosum*, Bristly Wallaby-grass *Rytidosperma setaceum*, Variable Sword-sedge *Lepidosperma laterale*, Wattle Mat Rush *Lomandra filiformis*, Chocolate Lily *Arthropodium strictum* and Bidgee-Widgee *Acaena novae-zelandiae*. Exotic species included Sweet Vernal-grass *Anthoxanthum odoratum*, Cocksfoot *Dactylis glomerata*, Perennial Ryegrass *Lolium perenne*, Couch Grass *Cynodon dactylon*, Onion Grass *Romulea rosea,* Panic Veldt-grass *Ehrharta erecta* and Paspalum *Paspalum dilatatum.* Several Sugar Gum *Eucalyptus cladocalyx* trees were also present (Plates 1 and 2). Two scattered Drooping Sheoak *Allocasuarina verticillata* trees were also present.

Patches of Grassy Woodland along Russells Road reserve comprised a modified cover of Golden Wattle *Acacia pycnantha* and Hedge Wattle shrubs, with an understorey of Soft Spear-grass *Austrostipa mollis*, Kneed Spear-grass, Common Wallaby-grass and Striped Wallaby-grass *Rytidosperma racemosum.* Exotic Perennial Veldt-grass *Ehrharta calycina*, Soursob *Oxalis pes-caprae* Yorkshire Fog-grass *Holcus lanatus*, Panic Veldt-grass *Ehrharta erecta*, Cocksfoot, Galenia *Galenia pubescens*, Bridal Creeper *Asparagus asparagoides*, Wild Radish *Raphanus raphanistrum* and Ribwort *Plantago lanceolata* were also present (Plates 3 and 4).

Native Vegetation Proposed for Removal

The project design indicates the development will require the removal of 0.101 hectares of native vegetation (Grassy Woodland) (Plates 1 to 4) (Figure 2).


Plate 1: Modified Grassy Woodland for removal


Plate 2: Modified Grassy Woodland for removal


Plate 3: Modified Grassy Woodland for removal


Plate 4: Planted vegetation for removal on Russells Rd for removal

Plate 5: Revegetation area proposed for removal

Plate 6: Grassy Woodland on Russells Rd reserve for retention

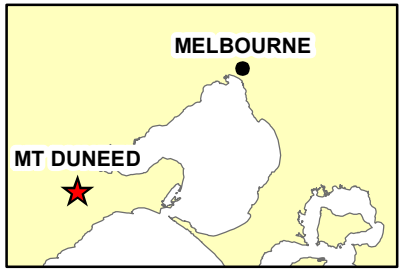
Plate 7: Grassy Woodland within the site for retention

Plate 8: Scattered trees (Drooping Sheoak) for retention

Figure 2
Ecological Features
120 Russells Road,
Mt Duneed

Legend

- Subject Site
- Grassy Woodland
- Planted Vegetation
- Revegetation Area
- Predominantly Introduced Vegetation
- Vegetation for Removal
- Large Scattered Tree



N
0 5 10 20
Metres

ÖKOLOGIE CONSULTING

Environmental Legislation and Policy Implications

Flora and Fauna Guarantee Act 1988

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

A permit is required from DELWP to 'take' (kill, injure, disturb or collect) listed flora species, flora species that are members of listed threatened communities or protected flora from public land. Protected flora species includes all members of the following plant families Asteraceae (Daisies), Epacridaceae (Heaths) and Orchidaceae (Orchids), all clubmosses, ferns and fern allies (excluding *Pteridium esculentum*). All species of the following genera are also protected: *Acacia* (excluding *Acacia dealbata, Acacia decurrens, Acacia implexa, Acacia melanoxylon, Acacia paradoxa*), *Baeckea*, *Calytrix*, *Correa*, *Darwinia*, *Eremophila*, *Eriostemon, Gompholobium, Grevillea, Prostanthera, Sphagnum, Thryptomene, Thysanotus* and *Xanthorrhoea* (DELWP 2020e).

No listed threatened flora species was recorded within the project area. One protected flora species (Golden Wattle) is present along Russells Road reserve; however, an FFG Act permit application will not be required in this instance as no protected flora species will require removal.

Planning and Environment Act 1987

The purpose of the *Planning and Environment Act 1987* is to establish a framework for planning the use, development and protection of land in Victoria. Native vegetation clearance is managed under the Act and through municipal planning schemes (DELWP 2020c).

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

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

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

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

- To remove, destroy or lop native vegetation in the Detailed Assessment Pathway
- To remove, destroy or lop native vegetation if a Property Vegetation Plan applies to the site.
- To remove, destroy or lop native vegetation on Crown land, which is occupied or managed by the responsible authority (DELWP 2020c).

Clause 52.17 – Native Vegetation

The project area comprised areas of exotic dominated grassland interspersed with planted exotic trees present along the property boundary. Native vegetation consisted of two scattered trees and several modified patches of Grassy Woodland within the property and along Russells Road reserve. Areas of exotic grassland that contain scattered indigenous grasses (<5% overall perennial cover) do not meet the criteria for a patch under the Guidelines (DELWP 2017).

The applicant has applied the principles of avoid and minimise during the design process. The original design identified the removal of 0.233 hectares of Grassy Woodland and two large scattered trees. The location of the effluent disposal area and carpark were amended to reduce the impact to 0.101 hectares of native vegetation. The amended design will retain 0.036 hectares of Grassy Woodland and two large trees.

The rehabilitation centre and proposed access road was located in the eastern section of the property to avoid impacting the historical archaeological site in the north western section. The development layout was amended to further reduce the impact to native vegetation, and there are no feasible opportunities to further avoid removal or minimise impacts to native vegetation without compromising the proposed development design.

A permit to remove 0.101 hectares of native vegetation is required under Clause 52.17 of the Greater Geelong Planning Scheme (DELWP 2020c). The native vegetation removal report (Appendix 1) identified an intermediate assessment pathway application is required in accordance with the Guidelines (DELWP 2017) (Table 2).

Planted Vegetation

The design indicates the development will partially remove the revegetation area (Figure 2). This planted vegetation was subject to public funding for conservation purposes under the City's Adopt A Park Program in late 2003. However, Council has provided written permission for the removal of this vegetation to the minimum extent required to facilitate the proposed development.

This permission from meets the exemption under Clause 52.17-7 Planted Vegetation: *Native vegetation that is to be removed, destroyed or lopped that was either planted or grown as a result of direct seeding. This exemption does not apply to native vegetation planted or managed with public funding for the purpose of land protection or enhancing biodiversity unless the removal, destruction or lopping of the native*

vegetation is in accordance with written permission of the agency (or its successor) that provided the funding (DELWP 2020c).

Table 2: Intermediate assessment pathway application

Number	Application Requirement	Response
1.	The assessment pathway and reason for the assessment pathway. This includes the location category of the native vegetation to be removed.	The application is under the intermediate assessment pathway as the vegetation removal occurs in Location 2. The assessment pathway is for development of the site that requires the removal of native vegetation. The location of native vegetation for removal is shown on Figure 2.
	A description of the native vegetation to be removed that includes: • Whether it is a patch or a scattered tree (or both). • The extent (in hectares). • The number and circumference (in centimetres measured at 1.3 metres above ground level) of any large trees within a patch. • The number and circumference (in centimetres measured at 1.3 metres above ground level) of any scattered trees, and whether each tree is small or large. • The strategic biodiversity value score • The condition score. • If it includes endangered Ecological Vegetation Classes. • If it includes sensitive wetland or coastal areas.	• The native vegetation proposed for removal is classified as a patch under the Guidelines. • The extent of the patch of native vegetation (Grassy Woodland) for removal comprises 0.101 hectares. • No large trees in a patch require removal. • No scattered indigenous trees require removal. • The strategic biodiversity value score of all mapped vegetation is 0.677. • The condition score of all mapped vegetation is 0.499. • Grassy Woodland is listed as an endangered EVC in the Victorian Volcanic Plain bioregion. • The site does not include any sensitive wetland or coastal areas.
	Maps showing the native vegetation and property in context and containing: • Scale, north point and property boundaries. • Location of any patches of native vegetation and the number of	• The location of the remnant patch of native vegetation proposed for removal is shown on Figure 2. • No large trees in a patch require removal. • No scattered indigenous trees

Number	Application Requirement	Response
	large trees within the patch proposed to be removed. • Location of scattered trees proposed to be removed, including their size.	require removal.
	The offset requirement, determined in accordance with section 5 of the Guidelines, that will apply if the native vegetation is approved to be removed	The offset requirement is for a general offset amount of 0.063 general habitat units. The general offset must have a minimum strategic biodiversity value score of 0.542 and be within the Corangamite Catchment Management Authority area or Greater Geelong City Council.
2.	Topographic and land information relating to the native vegetation to be removed, showing ridges, crests and hilltops, wetlands and waterways, slopes of more than 20 percent, drainage lines, low lying areas, saline discharge areas, and areas of existing erosion, as appropriate. This may be represented in a map or plan.	The site topography comprises low undulating slopes. It does not contain any low-lying areas, drainage lines or wetlands, or areas of existing erosion.
3.	Recent photographs of the native vegetation to be removed.	Photographs of the native vegetation proposed for removal are shown on Page 7.
4.	Details of any other native vegetation approved to be removed, or that was removed without the required approvals, on the same property or on contiguous land in the same ownership as the applicant, in the five-year period before the application for a permit is lodged.	No permitted removal of other native vegetation has been undertaken on the same contiguous parcel of land within the past five years.
5.	An avoid and minimise statement. The statement describes any efforts to avoid the removal of and minimise the impacts on the biodiversity and other values of native vegetation, and how these efforts focussed on areas of native vegetation that have the most value. The statement should include a description of the following:	The site has not been subject to a strategic planning process. The applicant has applied the principles of avoid and minimise during the design process. The original design identified the removal of 0.233 hectares of Grassy Woodland and two large scattered trees. The location of the effluent disposal area and carpark were amended to reduce the impact to 0.101 hectares of native

Number	Application Requirement	Response
	• Strategic level planning – any regional or landscape scale strategic planning process that the site has been subject to that avoided and minimised impacts on native vegetation across a region or landscape. • Site level planning – how the proposed use or development has been sited or designed to avoid and minimise impacts on native vegetation. • That no feasible opportunities exist to further avoid and minimise impacts on native vegetation without undermining the key objectives of the proposal.	vegetation. The amended design will retain 0.036 hectares of Grassy Woodland and two large trees. The rehabilitation centre and proposed access road was located in the eastern section of the property to avoid impacting the historical archaeological site in the north western section. The development layout was amended to further reduce the impact to native vegetation, and there are no feasible opportunities to further avoid removal or minimise impacts to native vegetation without compromising the proposed development design.
6.	A copy of any Property Vegetation Plan contained within an agreement made pursuant to section 69 of the Conservation, Forests and Lands Act 1987 that applies to the native vegetation to be removed.	A property vegetation plan does not apply to the site.
7.	Where the removal of native vegetation is to create defendable space, a written statement explaining why the removal of native vegetation is necessary. This statement must have regard to other available bushfire risk mitigation measures. This statement is not required when the creation of defendable space is in conjunction with an application under the Bushfire Management Overlay.	The application to remove native vegetation is not associated with defendable space management requirements.
8.	If the application is under Clause 52.16, a statement that explains how the proposal responds to the Native Vegetation Precinct Plan considerations at decision guideline 8.	The application to remove native vegetation is not associated with Clause 52.16

Number	Application Requirement	Response
9.	An offset statement providing evidence that an offset that meets the offset requirements for the native vegetation to be removed has been identified and can be secured in accordance with the Guidelines. A suitable statement includes evidence that the required offset: Is available to purchase from a third party or will be established as a new offset and has the agreement of the proposed offset provider or can be met by a first party offset.	The offset has been sourced as an allocated credit extract (third party offset) through the Native Vegetation Credit Register. Evidence of the offset availability has been provided (Appendix 3).

Environmental Significance Overlay – Schedule 1

The property is subject to ESO1 (Areas of Flora and Fauna Habitat and of Geological and Natural Interest). The provision to ESO1 specifies a permit is not required to remove, destroy or lop vegetation that is:

- Listed within the incorporated document: Environmental Weeds, City of Greater Geelong, September 2008.
- Exotic and native vegetation if within 10 metres of a dwelling on a lot exceeding 0.4 hectares.

A permit will be required to removal vegetation (native and exotic) on the property under ESO1 in this instance, as the permit exemption will not apply to the proposed development. The decision guidelines under ESO1 are outlined in Table 3.

Table 3: Decision guidelines under ESO1

Decision Guidelines	Response
The environmental values of the land	Vegetation proposed for removal includes a modified cover of Grassy Woodland that has colonised the site following previous disturbance from agricultural use. Native vegetation is considered to be of low environmental value and of low value for native fauna species. The development will also partially remove the revegetation area on the property.
The effect of any proposed building or works on the environmental values of the land and its immediate locality.	The development of the site will result in the removal of 0.101 hectares of native vegetation (Grassy Woodland). However, this vegetation is highly modified and is considered to be of low environmental value. The revegetation area is of low environmental value.

Decision Guidelines	Response
The need to control the siting, shape and height of any buildings or extensions.	The buildings have been designed and located with consideration of the surrounding environment.
The extent to which the materials, colours and external finishes of buildings conform in appearance and character with adjacent buildings and with the character and appearance of the area generally.	The buildings have been designed with consideration of the surrounding environment.
The reason for removing any vegetation and the practicality of any alternative options which do not require removal of remnant vegetation.	The vegetation for removal comprises understorey vegetation in poor condition. The original design identified the removal of 0.233 hectares of Grassy Woodland and two large scattered trees. The location of the effluent disposal area and carpark were amended to reduce the impact to 0.101 hectares of native vegetation. The amended design will retain 0.036 hectares of Grassy Woodland and two large trees within the site. The rehabilitation centre and proposed access road was located in the eastern section of the property to avoid impacting the historical archaeological site in the north western section. The development layout was amended to further reduce the impact to native vegetation, and there are no feasible opportunities to further avoid removal or minimise impacts to native vegetation without compromising the proposed development design.
The importance of the natural environment including any important landscape or conservation characteristics of the area and the suitability of the proposed development	Native vegetation within the property is highly modified from previous agricultural use and considered to be of low environmental value.
Whether appropriate management practices are proposed including the control of environmental weeds and pest animals, the fencing of animals, prevention of soil erosion, fire prevention measures, and revegetation of degraded areas with indigenous plant species.	The future development of the site will require ongoing management of weeds and pest animals. Bushfire management measures are detailed in the Bushfire Hazard Assessment report (Okologie Consulting 2018b). Revegetation is not considered appropriate in this instance to reduce the bushfire risk. Any landscaping will incorporate the CFA Landscaping for Bushfire Guidelines to reduce the bushfire risk to the development.
The necessity of retaining a buffer strip of vegetation in the vicinity of water courses, roads and property boundaries	Areas of existing vegetation along the property boundary and Russells Road will be retained where practicable.
The objectives and guidelines of the Armstrong Creek West Precinct Structure Plan, September 2012.	The proposed development of the site as a Community Care Accommodation Facility is consistent with the development and use of land specified in the structure plan.

Vegetation Protection Overlay – Schedule 1

Russells Road reserve is subject to VPO1 (Significant Roadsides and Linear Reserves). The provision to VPO1 specifies a permit is required to remove, destroy or lop any vegetation except where:

- The removal of vegetation is carried out in conjunction with an approved development in accordance with an endorsed plan.
- The removal of vegetation is to enable the formation of a single crossing and access driveway with a maximum width of 4.2 metres. Consultation is still required with the responsible authority to minimise the loss of significant indigenous vegetation.
- The vegetation presents an immediate risk of personal injury or damage to property including the culling of single trees within 3 metres of a dwelling or outbuilding.
- Any tree or branch of a tree impairs the access of motor vehicles along any existing or approved access track, provided that such access track has a width no greater than 4 metres.
- It is not native vegetation or listed within the incorporated document Environmental Weeds, City of Greater Geelong, September 2008.

A permit will not be required to remove planted native vegetation under VPO1, as the construction of an access road through Russells Road reserve will be less than 4.2m wide.

Conclusion

The project area was highly modified from agriculture use and comprised areas of exotic dominated grassland, interspersed with planted exotic trees present along the property boundary. Native vegetation consisted of two scattered trees and several modified patches of Grassy Woodland within the property, and along Russells Road reserve. The revegetation area is partially located within the project area and extends onto the adjacent property to the east. No listed threatened flora or fauna species were recorded, and none are considered likely to occur due to the absence of suitable habitat.

The applicant has applied the principles of avoid and minimise during the design process. The original design identified the removal of 0.233 hectares of Grassy Woodland and two large scattered trees. The location of the effluent disposal area and carpark were amended to reduce the impact to 0.101 hectares of native vegetation. The amended design will retain 0.036 hectares of Grassy Woodland and two large trees.

The rehabilitation centre and proposed access road was located in the eastern section of the property to avoid impacting the historical archaeological site in the north western section. The development layout was amended to further reduce the impact to native vegetation, and there are no feasible opportunities to further avoid removal or minimise impacts to native vegetation without compromising the proposed development design.

The proposed removal of 0.101 hectares of native vegetation requires a permit under Clause 52.17 of the Greater Geelong Planning Scheme. An intermediate assessment pathway application has been prepared to meet the requirements of the Guidelines.

A permit will be required to remove native and exotic vegetation within the property under ESO1. A permit will not be required to remove planted native vegetation under VPO1, as the construction of an access road through Russells Road reserve will be less than 4.2m wide.

The native vegetation removal report identified a general offset of 0.063 general habitat units is required. The general offset must have a minimum strategic biodiversity value score of 0.542 and be within the Corangamite Catchment Management Authority area or Greater Geelong City Council. The offset has been sourced as an allocated credit extract (third party offset) through the Native Vegetation Credit Register.

Please contact me on 0419 786 533 if you require any further information.

Yours sincerely,

Mark Stockdale
Principal Ecologist

Okologie Consulting Pty Ltd
ACN: 618 785 336
32 Nicholson Crescent
Jan Juc, Victoria, 3228

References

DELWP 2017. *Guidelines for the removal, destruction or lopping of native vegetation*. Department of Environment, Land, Water and Planning.

DELWP 2020a. NatureKit. Department of Environment, Land, Water and Planning: http://maps.biodiversity.vic.gov.au

DELWP 2020b. Native Vegetation Information Management System. Department of Environment, Land, Water and Planning: https://nvim.delwp.vic.gov.au

DELWP 2020c. Planning Schemes Online. Department of Environment, Land, Water and Planning: http://planning-schemes.delwp.vic.gov.au

DELWP 2020d. *Flora and Fauna Guarantee Act 1988*. Department of Environment, Land, Water and Planning.

DELWP 2020e. *Native vegetation removal report*. Department of Environment, Land, Water and Planning.

Okologie Consulting 2018a. Ecological Assessment for 120 Russells Road, Mount Duneed. Report prepared by Okologie Consulting Pty Ltd for St Quentin Consulting.

Okologie Consulting 2018b. Bushfire Hazard Assessment for 120 Russells Road, Mount Duneed. Report prepared by Okologie Consulting Pty Ltd for St Quentin Consulting.

Native vegetation removal report

A report to support an application to remove, destroy or lop native vegetation in the **Intermediate** Assessment Pathway using the modelled condition score

This report provides information to support an application to remove native vegetation in accordance with the *Guidelines for the removal, destruction or lopping of native vegetation*. The report is not an assessment by DELWP or local council of the proposed native vegetation removal. Biodiversity information and offset requirements have been calculated using modelled condition scores contained in the *Native vegetation condition map*.

Date and time: **08 May 2020 14:32 PM**

Lat./Long.: -38.2393439214788,144.311693424646

Native vegetation report ID: 327-20200508-015

Address: 130A RUSSELLS ROAD MOUNT DUNEED 3217
130 RUSSELLS ROAD MOUNT DUNEED 3217
120 RUSSELLS ROAD MOUNT DUNEED 3217

Assessment pathway

The assessment pathway and reason for the assessment pathway

Assessment pathway	**Intermediate Assessment Pathway**
Extent of past plus proposed native vegetation removal	0.101 hectares
No. large trees	0 large tree(s)
Location category	Location 2 The native vegetation is in an area mapped as an Endangered Ecological Vegetation Class. Removal of less than 0.5 hectares of native vegetation will not have a significant impact on any habitat for a rare or threatened species.

Offset requirement

The offset requirement that will apply if the native vegetation is approved to be removed

Offset type	General offset
Offset amount	0.063 general habitat units
Offset attributes	
Vicinity	Corangamite Catchment Management Authority (CMA) or Greater Geelong City Council
Minimum strategic biodiversity value score	0.542
Large trees	0 large tree(s)

Biodiversity information about the native vegetation

Description of any past native vegetation removal

Any native vegetation that was approved to be removed, or was removed without the required approvals, on the same property or on contiguous land in the same ownership, in the five year period before the application to remove native vegetation is lodged is detailed below.

Permit/PIN number	Extent of native vegetation (hectares)
None entered	0 hectares

Description of the native vegetation proposed to be removed

Extent of all mapped native vegetation	0.101 hectares
Condition score of all mapped native vegetation	0.499
Strategic biodiversity value score of all mapped native vegetation	0.677
Extent of patches native vegetation	0.101 hectares
1	0.004 hectares
2	0.019 hectares
3	0.076 hectares
4	0.002 hectares
Extent of scattered trees	0 hectares
No. large trees within patches	0 large tree(s)
No. large scattered trees	0 large tree(s)
No. small scattered trees	0 small tree(s)

Additional information about trees to be removed, shown in Figure 1

Tree ID	Tree circumference (cm)	Benchmark circumference (cm)	Scattered / Patch	Tree size
N/A				

Other information

Applications to remove, destroy or lop native vegetation must include all the below information. If an appropriate response has not been provided the application is not complete.

Photographs of the native vegetation to be removed

Recent, dated photographs of the native vegetation to be removed must be provided with the application. All photographs must be clear, show whether the vegetation is a patch of native vegetation or scattered trees, and identify any large trees. If the area of native vegetation to be removed is large, provide photos that are indicative of the native vegetation.

Ensure photographs are attached to the application. If appropriate photographs have not been provided the application is not complete.

Topographical and land information

Description of the topographic and land information relating to the native vegetation to be removed, including any ridges, crests and hilltops, wetlands and waterways, slopes of more than 20 percent, drainage lines, low lying areas, saline discharge areas, and areas of existing erosion, as appropriate. This may be represented in a map or plan. **This is an application requirement and your application will be incomplete without it.**

The site topography comprises low undulating slopes. The site does not contain any ridges, hilltops, drainage lines, wetlands or waterways, low lying areas, saline areas or areas of existing erosion.

Avoid and minimise statement

This statement describes what has been done to avoid the removal of, and minimise impacts on the biodiversity and other values of native vegetation. **This is an application requirement and your application will be incomplete without it.**

The site has not been subject to a strategic planning process. The applicant has applied the principles of avoid and minimise during the design process. The original design identified the removal of 0.233 hectares of Grassy Woodland and two large scattered trees. The location of the effluent disposal area and carpark were amended to reduce the impact to native vegetation. The rehabilitation centre and proposed access road was designed to ensure the impact to native vegetation was minimised as much as practicable and has been located in a modified area of Grassy Woodland. There are no feasible opportunities to further avoid removal or minimise impacts to native vegetation without compromising the proposed development design.

Defendable space statement

Where the removal of native vegetation is to create defendable space, a written statement explaining why the removal of native vegetation is necessary. This statement must have regard to other available bushfire risk mitigation measures. This statement is not required if your application also includes an application under the Bushfire Management Overlay.

Not applicable.

Offset statement

An offset statement that demonstrates that an offset is available and describes how the required offset will be secured. **This is an application requirement and your application will be incomplete without it.**

The offset has been sourced as an allocated credit extract (third party offset) through the Native Vegetation Credit Register. Evidence of the offset availability has been provided.

Next steps

Applications to remove, destroy or lop native vegetation must address all the application requirements specified in *Guidelines for the removal, destruction or lopping of native vegetation.*If you wish to remove the mapped native vegetation you are required to apply for a permit from your local council. This *Native vegetation removal report*must be submitted with your application and meets most of the application requirements. The following needs to be added as applicable.

Property Vegetation Plan

Landowners can manage native vegetation on their property in the longer term by developing a Property Vegetation Plan (PVP) and entering in to an agreement with DELWP.

If an approved PVP applies to the land, ensure the PVP is attached to the application.

Applications under Clause 52.16

An application to remove, destroy or lop native vegetation is under Clause 52.16 if a Native Vegetation Precinct Plan (NVPP) applies to the land, and the proposed native vegetation removal is not in accordance with the relevant NVPP. If this is the case, a statement that explains how the proposal responds to the NVPP considerations must be provided.

If the application is under Clause 52.16, ensure a statement that explains how the proposal responds to the NVPP considerations is attached to the application.

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

Figure 1 – Map of native vegetation to be removed, destroyed or lopped

Figure 2 – Map of property in context

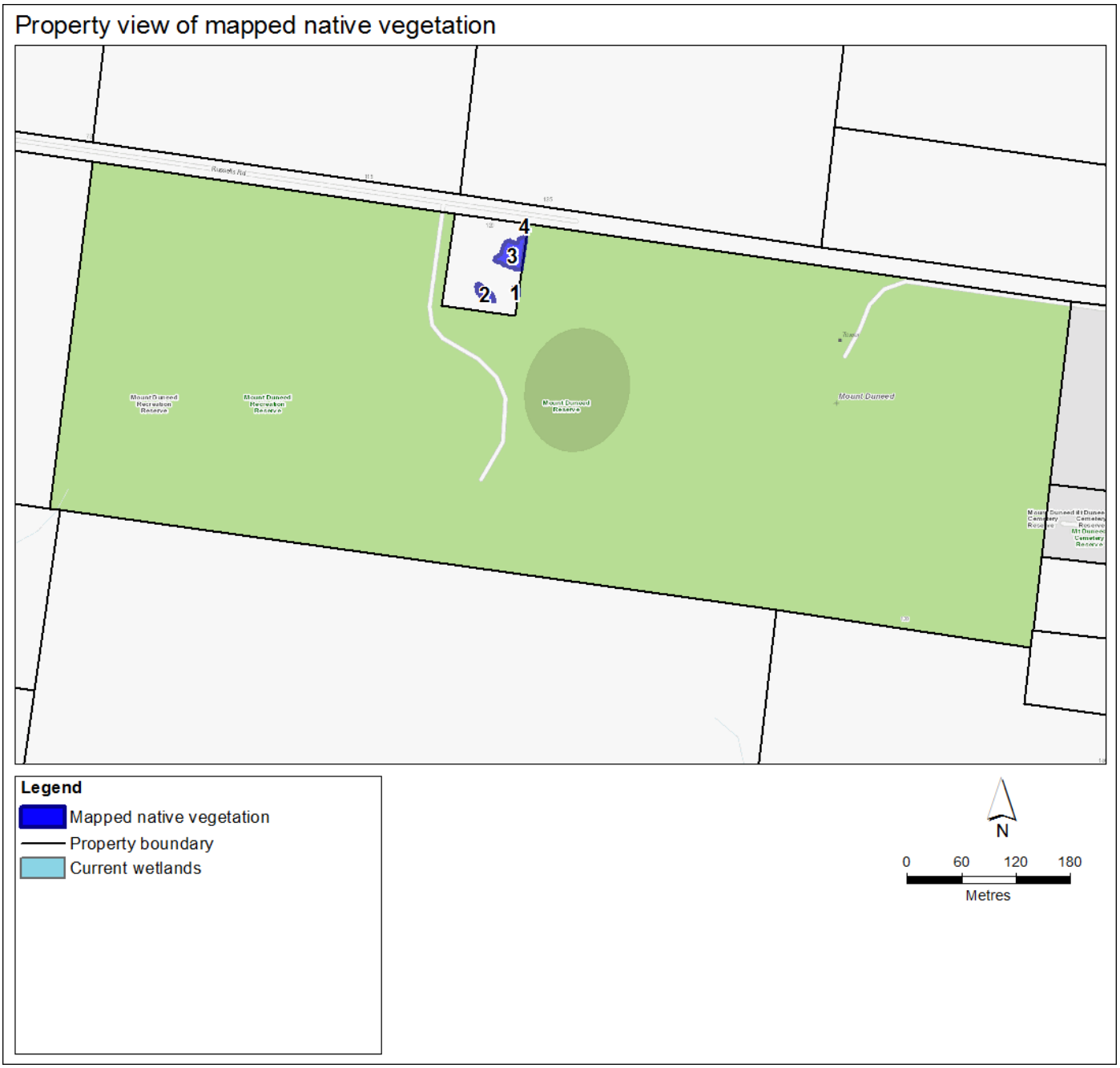
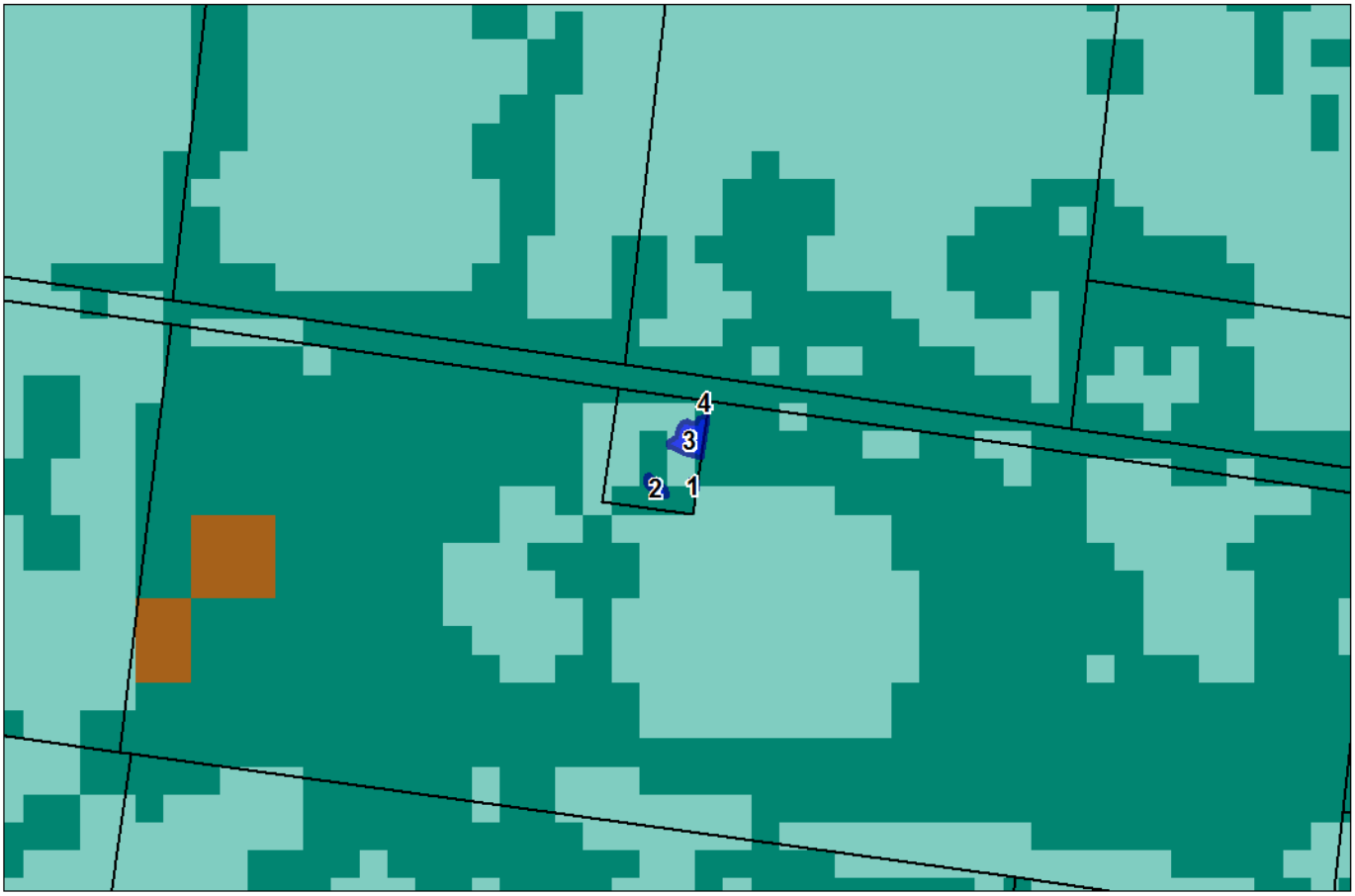


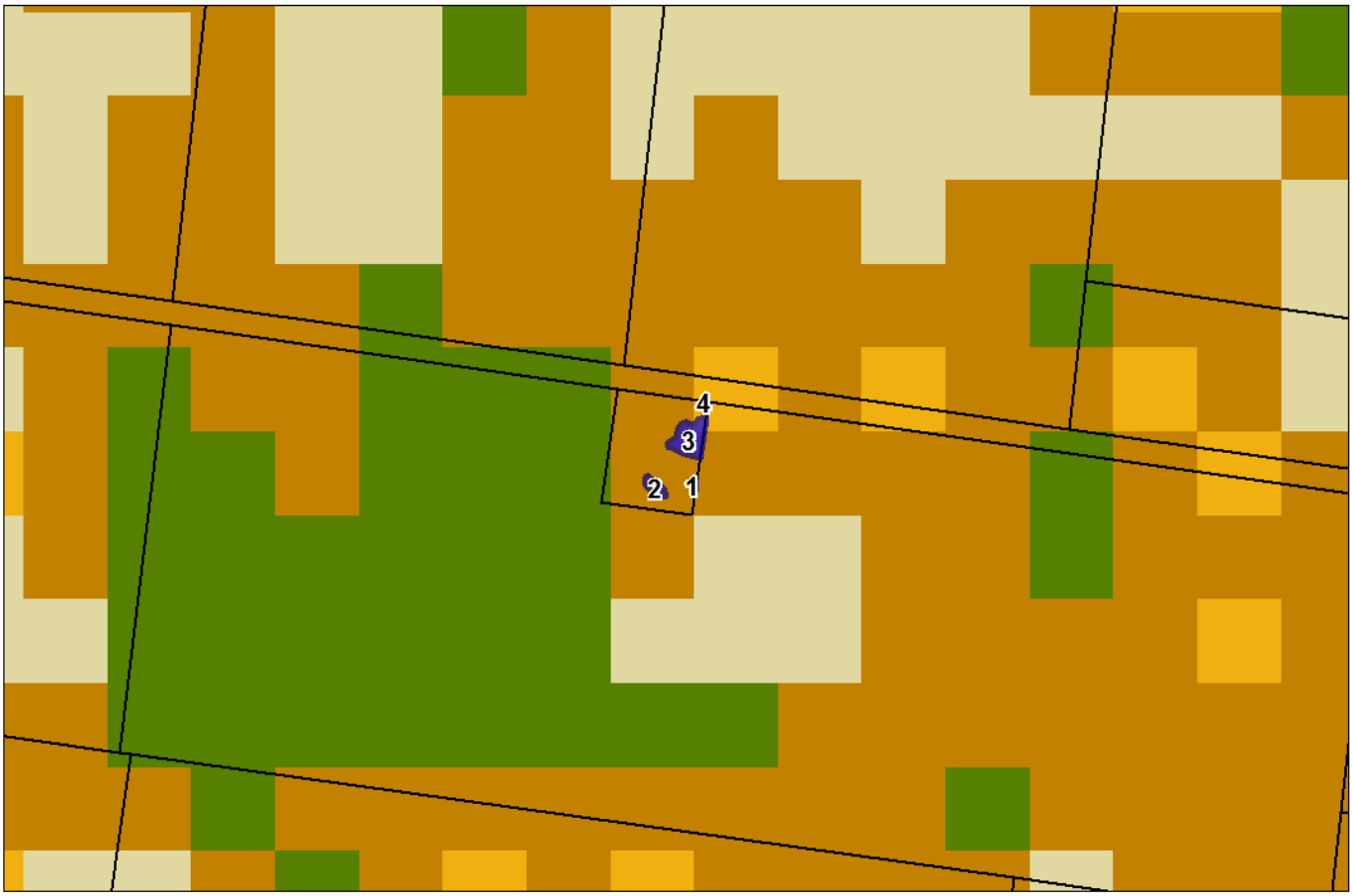
Figure 3 – Biodiversity information maps

Mapped native vegetation and the *Native vegetation location map*



Native vegetation removal report

Mapped native vegetation and the *Native vegetation condition map*



Legend

- Mapped native vegetation
- Property boundary

Native vegetation condition*

- 0.81 - 1.00
- 0.61 - 0.80
- 0.41 - 0.60
- 0.21 - 0.40
- 0.00 - 0.20

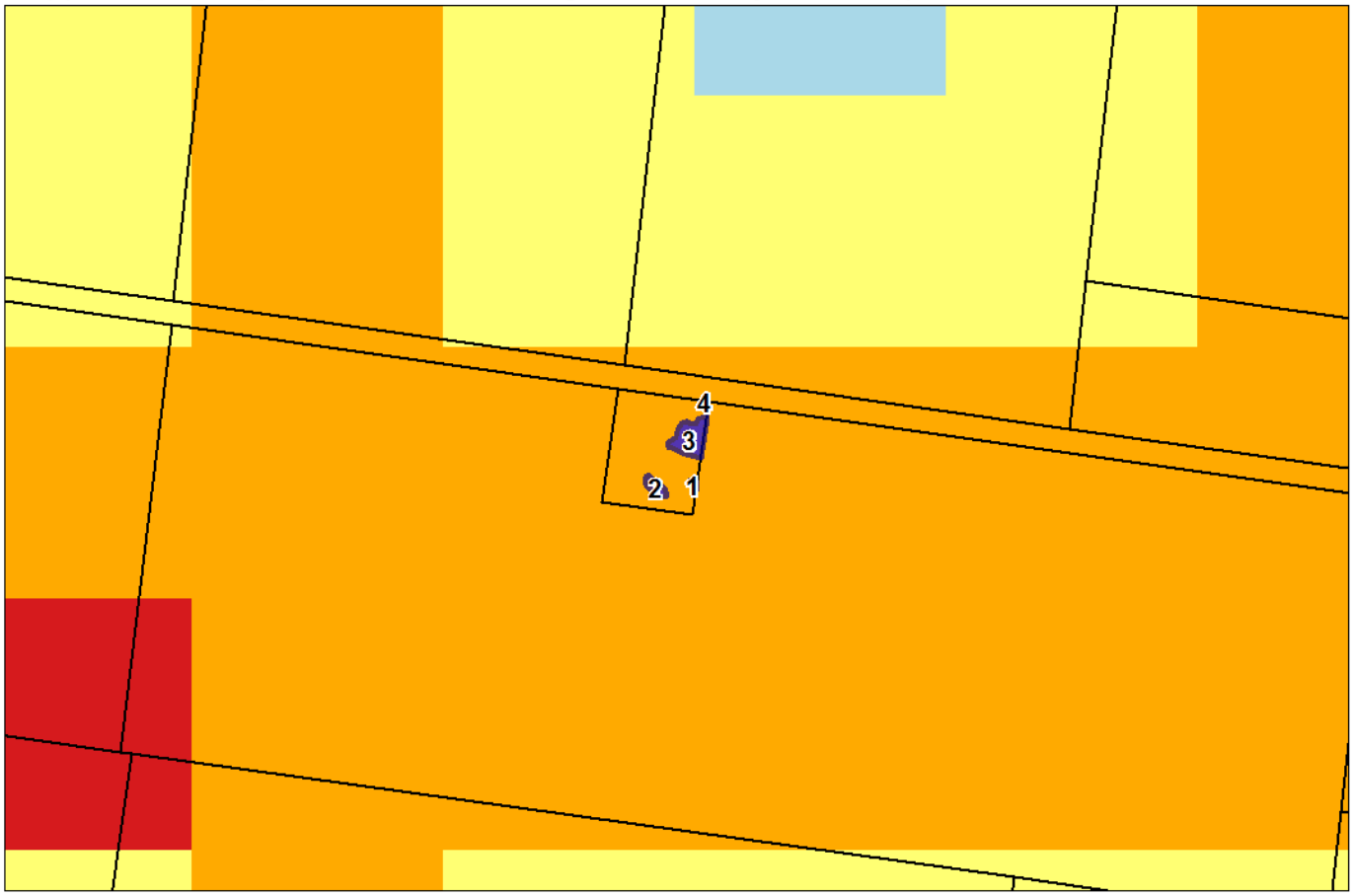
* These classes are for display purposes only

N

0 60 120 180

Metres

Mapped native vegetation and the *Strategic biodiversity value map*



Legend

- Mapped native vegetation
- Property boundary

Strategic biodiversity value*

- 0.81 - 1.00
- 0.61 - 0.80
- 0.41 - 0.60
- 0.21 - 0.40
- 0.00 - 0.20

* These classes are for display purposes only

N

0 60 120 180

Metres

Appendix 1 - Details of offset requirements

Native vegetation to be removed

Extent of all mapped native vegetation (for calculating habitat hectares)	0.101	The area of land covered by a patch of native vegetation and/or a scattered tree, measured in hectares. Where the mapped native vegetation includes scattered trees, each tree is assigned a standard extent and converted to hectares. A small scattered tree is assigned a standard extent defined by a circle with a 10 metre radius and a large scattered tree a circle with a 15 metre radius. The extent of all mapped native vegetation is an input to calculating the habitat hectares.
Condition score*	0.499	The condition score of native vegetation is a site-based measure that describes how close native vegetation is to its mature natural state. The condition score is the weighted average condition score of the mapped native vegetation calculated using the *Native vegetation condition map.*
Habitat hectares	0.050	Habitat hectares is a site-based measure that combines extent and condition of native vegetation. It is calculated by multiplying the extent of native vegetation by the condition score: ***Habitat hectares = extent x condition score***
Strategic biodiversity value score	0.677	The strategic biodiversity value score represents the complementary contribution to Victoria's biodiversity of a location, relative to other locations across the state. This score is the weighted average strategic biodiversity value score of the mapped native vegetation calculated using the *Strategic biodiversity value map*.
General landscape factor	0.839	The general landscape factor is an adjusted strategic biodiversity value score. It has been adjusted to reduce the influence of landscape scale information on the general habitat score.
General habitat score	0.042	The general habitat score combines site-based and landscape scale information to obtain an overall measure of the biodiversity value of the native vegetation. The general habitat score is calculated as follows: ***General habitat score = habitat hectares x general landscape factor***

* **Offset requirements for partial removal:** If your proposal is to remove parts of the native vegetation in a patch (for example only understorey plants) the condition score must be adjusted. This will require manual editing of the condition score and an update to the calculations that the native vegetation removal tool has provided: habitat hectares, general habitat score and offset amount.

Offset requirements

Offset type	General offset	A general offset is required when the removal of native vegetation does not have a significant impact on any habitat for rare or threatened species. All proposals in the Basic and Intermediate assessment pathways will only require a general offset.
Offset multiplier	1.5	This multiplier is used to address the risk that the predicted outcomes for gain will not be achieved, and therefore will not adequately compensate the biodiversity loss from the removal of native vegetation.
Offset amount (general habitat units)	0.063	The general habitat units are the amount of offset that must be secured if the application is approved. This offset requirement will be a condition to any permit or approval for the removal of native vegetation. ***General habitat units required = general habitat score x 1.5***
Minimum strategic biodiversity value score	0.542	The offset site must have a strategic biodiversity value score of at least 80 per cent of the strategic biodiversity value score of the native vegetation to be removed. This is to ensure offsets are located in areas with a strategic biodiversity value that is comparable to the native vegetation to be removed.
Vicinity	Corangamite CMA or Greater Geelong City Council	The offset site must be located within the same Catchment Management Authority boundary or municipal district as the native vegetation to be removed.
Large trees	0 large tree (s)	The offset site must protect at least one large tree for every large tree removed. A large tree is a native canopy tree with a Diameter at Breast Height greater than or equal to the large tree benchmark for the local Ecological Vegetation Class. A large tree can be either a large scattered tree or a large patch tree.

8 April 2020

Our Reference: ESLS-4264-B
Your Reference: 120 Russells Road, Mount Duneed

Mark Stockdale
Okologie Consulting Pty Ltd
By Email: mark@okologie.com.au

Dear Mark,

RE: Quotation for the supply of Native Vegetation Credits

Vegetation Link is an accredited offset provider with the Department of Environment, Land, Water & Planning (DELWP). We offer a specialised brokerage service to enable permit holders and developers to identify suitable native vegetation credits to meet their planning permit offset requirements.

Based upon the information you provided, I understand you require the following native vegetation offset:

Offset Type	Attributes	General Habitat Units (GHU)	Minimum Strategic Biodiversity Value Score (SBV)	Large Trees
General	Corangamite CMA	0.063	0.542	0

To meet your offset requirements, you can purchase native vegetation credits from a third party as per the option quoted below[1]. This quotation is valid for 14 days, subject to credit availability and landholder pricing.

Fixed Price Trade Pathway - offset site located in Moorabool Shire Council area (approx. 2-3 week turnaround from acceptance of quote)	
Cost of Native Vegetation Credits	$6,167.70
Transaction Fees	$790.00
Total (ex GST)	**$6,957.70**
Total (Inc. GST)	$7,653.47

If you would like to purchase credits let us know by email that you accept the quote, and return the attached Purchaser Table to offsets@vegetationlink.com.au.

Upon receipt of the Purchaser Table, we will begin the process to prepare a Credit Trading Agreement to enable the transfer of the credits to you or your nominee. Further details of the process for credit allocation is in the FAQ below.

Should you have any queries, please do not hesitate to contact us on (03) 5470 5232 or email offsets@vegetationlink.com.au.

Sincerely,

Lisa Gormley
Biodiversity Offset Broker

[1] Note that the Transaction Fee includes DELWP NVOR transfer and allocation fees and a Vegetation Link fee

FAQs:

What is a third party offset?

A third party offset is an offset site owned by another landowner who manages and protects native vegetation on their land. Landowners who establish these offset sites are required to:

- Enter into a Landowner Agreement for the specified offset site. A landowner agreement is in perpetuity and is binding upon the current and future landowners of the site. It permanently restricts use of the site for many purposes.
- Implement a detailed 10-year Management Plan endorsed by the DELWP Native Vegetation Offset Register to manage and improve the biodiversity values of the site.

How is the price of Native Vegetation Offset Credits (GHUs, GBEUs etc.) determined?

Landowners who own offset sites set their own price for native vegetation credits. They determine the price based on numerous factors. This includes but not limited to site establishment, the cost to manage the site in perpetuity (e.g., maintain fencing, control pest species), foregone use cost, and administrative costs. Depending on how the site is registered, the credit fee may be paid to either DELWP or directly to the landowner.

Further information about the work some of our landowners are doing can be found here:

https://www.vegetationlink.com.au/landowner-profiles

Further information on pricing can be found here:

https://www.environment.vic.gov.au/__data/assets/pdf_file/0030/329466/Info-sheet-Pricing-native-vegetation-credits.pdf

What is the process after I accept the Quote?

After you accept the quote and return the Purchaser Table, the following steps will be undertaken:

1. We will set up a contract between the parties involved and send the contract out for signing by all parties.
2. Once the contract is signed by all parties, invoices will be issued for the fees listed in the quotation. In most cases, we will send you two invoices, one for Vegetation Link transaction fee and one for the credit fee (usually to be paid to DELWP or the landowner). If you pay by EFT to DELWP, we recommend you provide evidence of your payment to Vegetation Link so we may forward this onto DELWP for actioning.
3. Once payments are received, Vegetation Link will send you an Allocated Credit Extract from the Native Vegetation Offset Register and your Executed Contract as evidence that you have purchased the offset.

How long will the process take? When will I get my credits?

Generally the process from quote acceptance to having evidence of allocated credits takes between 2-6 weeks. This is dependent on a range of factors including the type of landholder agreement, contract types and organisational workflows. We work as quickly as possible to get your credits to you within this time period.

We note that you cannot remove vegetation until you have been given permission by the Responsible Authority (usually the Council that has issued your permit).

What happens if I don't have a permit yet?

When people are buying credits before a permit is issued the following three options are most common:

1. You can pay for the offsets before the planning permit is available, and then the offsets are allocated to the permit when it is available. This will incur an additional $50 fee from DELWP. When considering this option, it is important to realise that your estimated offset requirements may be different than the actual permit requirements.
2. You can wait for the planning permit to be approved first and then request a quote to meet the requirements in your permit. Should credits be available, you can then start the offset purchase process. We then use the planning permit number for allocating the credits. Allocating credits to the permit is evidence that you have purchased your offset.
3. You can request a quote to confirm availability and to get an idea of the cost of offsetting before you apply for a permit. Once you receive the planning permit you can request an updated quote. It is at this point that you can then go through the offset purchase process.

We cannot guarantee credit availability until a) contracts are executed, or b) credits have been held via a pending trade lodged with DELWP Native Vegetation Offset Register.

We cannot guarantee price until a) a quote has been accepted within 14 days, and b) a Credit Trading Agreement is signed within 21 days, and c) the invoice for the Credits is paid within 28 days of the date the invoice is issued.

If I sign the contract, does that mean I MUST pay for the credits?

Yes, you have entered into a contract agreeing to pay for the offset credits therein and are required to pay for those credits. The Credits must be paid for within 28 days of the date of the invoice.

Can you hold the credits for me, as I want to pay later?

We are unable to hold credits for later payment. If you do not wish to proceed in purchasing credits now, but will at a later date, we suggest you request an updated quotation when you are ready to purchase credits.

Please also see 'What happens if I don't have a permit yet?' above.

For further information, see our website or look at the DELWP website:

http://www.vegetationlink.com.au/

https://www.environment.vic.gov.au/native-vegetation/native-vegetation/offsets-for-the-removal-of-native-vegetation

Appendix D: Bushfire Hazard Assessment

ÖKOLOGIE CONSULTING

Bushfire Hazard Assessment

120 Russells Road, Mount Duneed

Prepared for:
St Quentin Consulting

ÖKOLOGIE CONSULTING
www.okologie.com.au

Document Information

Bushfire Hazard Assessment for 120 Russells Road, Mount Duneed

Report prepared by Okologie Consulting Pty Ltd for St Quentin Consulting

Okologie Consulting Pty Ltd
32 Nicholson Crescent
Jan Juc, Victoria, 3228

ACN: 618 785 336
Web: www.okologie.com.au
Email: mark@okologie.com.au
Phone: 0419 786 533

Document Control

Version	Author	Review	Approval	Date
M561_BHA_120Russells Road_22022019_V1	Mark Stockdale	Luke Hynes	Mark Stockdale	22/02/2019

Table of Contents

Summary

This Bushfire Hazard Assessment has been prepared to support a planning permit application for the proposed development of 120 Russells Road, Mount Duneed. The assessment was undertaken to inform the bushfire risk and management response to reduce this risk to appropriate levels.

City of Greater Geelong requires development applications in a bushfire prone area (not subject to the Bushfire Management Overlay) to address Clause 13.02 (Bushfire Planning). This includes preparation of a bushfire site hazard and landscape hazard assessment and implementation of appropriate bushfire protection measures to address the identified bushfire risk.

One classifiable vegetation type (Grassland) was recorded within the 150-metre assessment area. The assessment area also included areas of modified vegetation and low-threat vegetation consisting of planted windbreaks, cropped vegetation, grassland (grazed) managed in a minimal fuel condition and non-vegetated areas (i.e. roads and buildings).

The surrounding landscape was identified as Broader Landscape Type One. The property is located in a highly modified agricultural area, adjacent to the local road network, town water supply and existing cleared areas. Areas of grassland to the north and west of the site represent a potential bushfire risk to the local area, however this threat is considered to be low through the presence of surrounding agricultural land and low-threat vegetation managed in a minimum fuel condition.

The bushfire hazard site assessment identified the development is capable of achieving BAL-12.5 defendable space and construction in accordance with Table 2 to Clause 53.02-5. Alternative Measure 3.6 has been applied to the defendable space and construction requirement due to the presence of modified vegetation to the east, and low-threat vegetation to the north, south and west. The use of Alternative Measure 3.6 has regard to the bushfire hazard landscape assessment and includes provision of a bushfire emergency management plan.

The bushfire risk to the development from the landscape beyond the site can be mitigated to an acceptable level, as the required defendable space can be managed entirely within the property boundary.

The property is located in a low bushfire risk area and the proposed development will not increase the bushfire risk to the local community. Implementing the required bushfire protection measures may also assist in reducing the risk to adjacent residential dwellings.

1 Introduction

1.1 Background

Okologie Consulting Pty Ltd was engaged by St Quentin Consulting to prepare a Bushfire Hazard Assessment for the proposed development of 120 Russells Road, Mount Duneed.

City of Greater Geelong requires development applications in designated bushfire prone areas (not subject to the Bushfire Management Overlay) to address Clause 13.02 *Bushfire Planning* (DELWP 2018a). This includes preparation of a bushfire hazard site assessment, landscape hazard assessment and implementation of appropriate bushfire protection measures to address the identified bushfire risk.

The relevant information provided with this application comprises:

- A bushfire hazard site assessment, which calculates the defendable space from the bushfire hazard as informed by the methodology of AS 3959-2009 *Construction of buildings in bushfire prone areas* (Australian Standard 2009).
- A bushfire hazard landscape assessment including a plan that describes the bushfire hazard of the general locality more than 150-metres from the site.
- Review of Clause 13.02 to shows how the development responds to the identified bushfire risk.

2 Site Description

2.1 Site Details

The site comprises property at 120 Russells Road, Mount Duneed (Allot. L2 Sec. 21 Parish Of Duneed) and Russells Road reserve (Figure 1). The site covers approximately 0.8 hectares, and is bound by Russells Road to the north and the Mount Duneed Recreation Reserve to the south, east and west.

The development proposal is for a Residential Alcohol and Drug Rehabilitation Centre. Access to the site is from Russells Road, which extends west through to Ghazeepore Road. The surrounding land use includes semi-rural development, agriculture and recreation.

The site topography is generally flat with low undulating slopes towards the southwest of the assessment area. The site is highly modified from agriculture use and comprises areas of exotic dominated grassland, interspersed with planted exotic trees present along the property boundary. Native vegetation was limited to a modified cover of Grassy Woodland and two scattered indigenous trees. Russells Road reserve contains planted trees, which extends onto the property to the east. A revegetation area is partially located within the site and extends onto the adjacent property to the east. A farm dam is located to the east of the site.

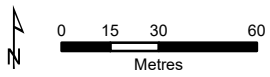
The site located in the City of Greater Geelong municipality and occurs within a designated bushfire prone area. It is zoned Farming Zone (FZ) and is subject to Environmental Significance Overlay – Schedule 1 (ESO1) under the Greater Geelong Planning Scheme (DELWP 2018b).

Figure 1
Site Location
Russells Road, Mt Duneed

Legend

Subject Site

150m Assessment Area



ÖKOLOGIE CONSULTING

3 Methodology

3.1 Desktop Assessment

The desktop assessment included review of relevant databases including:

- Planning Schemes Online for planning information (DELWP 2018b).
- NatureKit for modelled vegetation, topography and bushfire history (DELWP 2018c) of the surrounding area.
- Aerial photographs of the site and surrounding areas.

State planning provisions and relevant literature were also reviewed, including:

- State Planning Policy Framework 13.02 *Bushfire planning* (DELWP 2018a).
- Clause 53.02 *Bushfire Planning* (DELWP 2018d).
- Clause 44.06 *Bushfire Management Overlay* (DELWP 2018e).
- Planning Advisory Note 68: Bushfire State Planning Policy Amendment VC140 (DELWP 2018f).
- Practice Note 65: Preparing and Assessing a Planning Application Under the Bushfire Provisions in Planning Schemes (DTPLI 2014).
- CFA guideline 'Applying the Bushfire Hazard Landscape Assessment in Bushfire Management' (CFA 2015).
- Planning for Bushfire Victoria: Version 2. (CFA 2012).
- The Australian Standard: *AS 3959-2009 Construction of buildings in bushfire prone areas* (Australian Standards 2009).

3.2 Bushfire Hazard Site Assessment

A bushfire hazard site assessment was undertaken on 18 October 2018. The assessment involved determining the classifiable vegetation and effective slope within a 150-metre radius of the proposed development using the method described by AS3959-2009 (Australian Standards 2009). The Bushfire Attack Level (BAL) is calculated by identifying classifiable vegetation type, the effective slope under classifiable vegetation and distances between vegetation (the hazard) and the proposed development.

The bushfire hazard site assessment process is used to determine how far away from unmanaged vegetation a building would need to be to receive less than a certain level of radiant heat (e.g. a building constructed to BAL-12.5 has been designed to withstand a radiant heat flux of 12.5 kW/m2). The higher the BAL, the higher the exposure to the effects of flame, radiant heat and ember attack from a bushfire (Plate 1).

The development BAL also includes consideration of the bushfire hazard landscape assessment to ensure defendable space provides an adequate safety zone around buildings (CFA 2015).

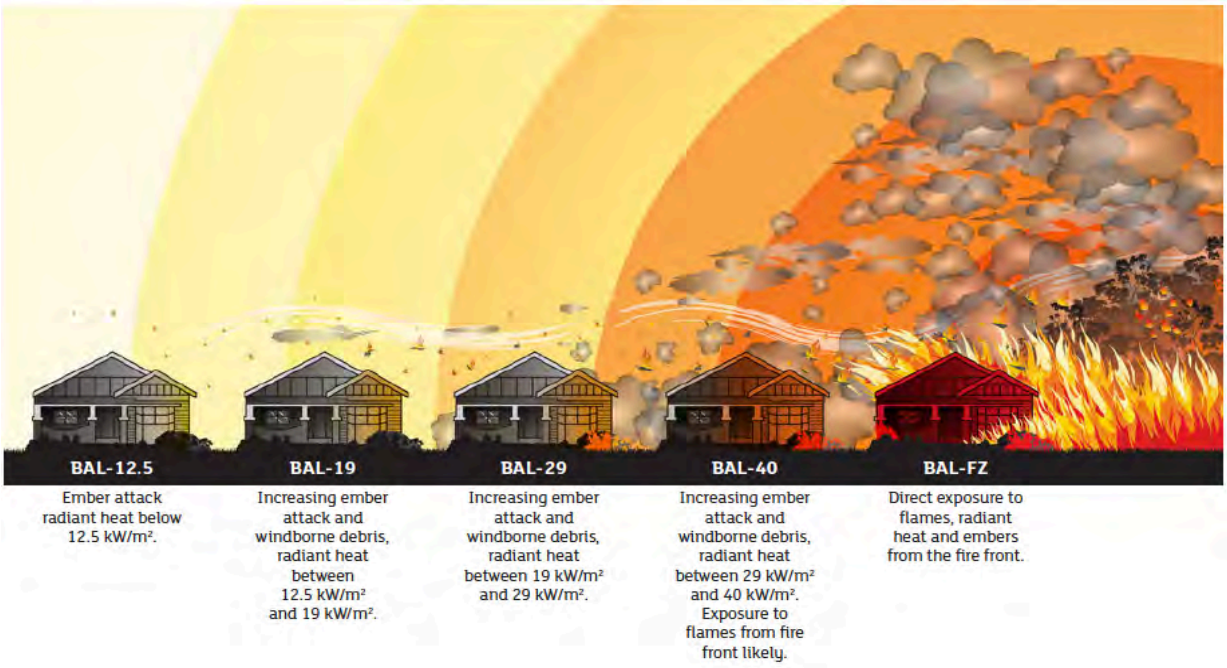


Plate 1. Bushfire Attack Levels and hazards associated with bushfire threats (Source: CFA 2012).

3.3 Vegetation

For the purposes of determining the defendable space and construction requirements, classified vegetation is vegetation that constitutes a bushfire hazard within 150 metres of the development in accordance with the classification system of AS 3959-2009 (Australian Standards 2009) and Table 1 or Table 2 of Clause 53.02 (DELWP 2018d). If more than one classified vegetation type is present the 'worst case scenario' is applied to determine the BAL (Standards Australia, 2009).

Areas of low-threat vegetation are described as:

- Non-vegetated areas, including waterways, roads, footpaths, buildings and rocky outcrops.
- Low-threat vegetation, including grassland managed in a minimal fuel condition, maintained lawns, golf courses, maintained public reserves and parklands, vineyards, orchards, cultivated gardens, commercial nurseries, nature strips and windbreaks (Standards Australia 2009).

Modified vegetation refers to vegetation that is different from the other vegetation classifications in AS3959 (the standard) because it:

- Has been modified, altered or is managed due to urban development, or gardening;
- Has different fuel loads from those assumed in the standard;
- Has limited or no understorey vegetation; or

- Is not low-threat or low-risk vegetation as defined in the standard (DELWP 2018b).

3.4 Topography

The site topography was assessed within the 150-metre assessment area, to determine the effective slope under classified vegetation in accordance with AS 3959-2009 (Australian Standards 2009). For the landscape assessment, the effective slope is determined on worst case rather than an average (CFA 2015).

Topography (or slope) influences the rate of spread and intensity of a bushfire. Fire burns faster uphill as the slope increases so does the speed of the fire and its intensity. As a general rule, for every 10° slope, the fire will double its speed. Fires tend to move more slowly as the slope decreases, and for every 10° of downhill slope, the fire will halve its speed (CFA 2012).

3.5 Defendable Space

Defendable space is one of the most effective ways of reducing the impact of bushfire on a building. It comprises an area of land around a building (inner zone and outer zone) where vegetation is modified and managed to reduce the effects of flame contact, radiant heat and embers associated with bushfire (Plate 2) (CFA 2015).

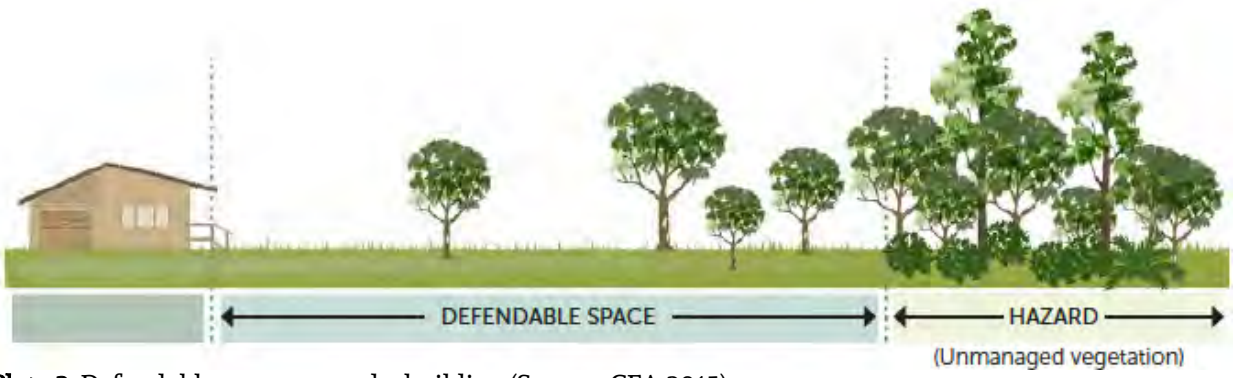


Plate 2. Defendable space around a building (Source: CFA 2015).

3.6 Construction Standards

Construction requirements for buildings relating to a calculated BAL are prescribed in AS3959-2009 (Standards Australia 2009). Building construction and design can be used to minimise the impacts of ember attack and radiant heat on a building. The materials and design of a building can be used to prevent the accumulation of debris and entry of embers. Appropriate construction helps the building to withstand the potential exposure from a bushfire as the fire front passes (CFA 2015).

3.7 Bushfire Hazard Landscape Assessment

The bushfire hazard landscape assessment provides information on the bushfire hazard more than 150 metres away from a development site (CFA 2015). The landscape assessment followed CFA guidelines (2015) and included review of aerial photographs to determine the vegetation extent in the broader locality; the proximity of the site to township areas or fire refuges; vegetation and slope, site access, defendable space and construction, local bushfire history and consideration of the likely bushfire scenarios.

3.8 Limitations

The information outlined in this report relies on the accuracy of GIS layers and spatial imagery. To minimise potential errors, the most current available data was obtained from relevant sources. The bushfire hazard within the local area was determined from interpretation of aerial photography, as access to all private property was not available. Determination of vegetation classification was based on relevant standards and guidelines, and vegetation condition and extent observed during the site assessment.

4 Bushfire Hazard Landscape Assessment

4.1 Site and Landscape Context

The site is located within Mount Duneed. Access to the site is via Russells Road, which extends west to Ghazeepore Road. Mount Duneed contains a mix of semi-rural development, agricultural land and recreational use associated with the Mount Duneed Recreation Reserve. No neighbourhood safer place is listed for Mount Duneed; however, the Mount Duneed Recreation Reserve is located immediately adjacent to the site and contains ovals and carpark areas that may provide protection from the impact of bushfire conditions.

4.2 Vegetation Extent in the Locality

Vegetation within the surrounding landscape (within one kilometre) is highly modified and dominated by agricultural land that includes grazed exotic grassland and cropped vegetation, interspersed with planted trees along road reserves, windrows and around properties. The majority of surrounding properties are small farmlets used for agricultural purposes. Native vegetation is generally limited to small, isolated patches in paddocks and along road reserves.

4.3 Recent Bushfire History

NatureKit (DEWLP 2018c) contains data on the bushfire history for the local area from 1970. A 311-hectare bushfire occurred approximately seven-kilometres east of the site in 2007, a 49 hectares bushfire occurred 6.5 kilometres north of the site in 2014 and a two-hectare bushfire occurred three-kilometres northeast of the site in 2012 (DEWLP 2018c) (Figure 2).

4.4 Potential Bushfire Scenario

The bushfire risk to the site has been assessed at the landscape scale by identifying likely bushfire scenarios and mechanisms of a bushfire that may impact the proposed development. The mechanisms of bushfire attack on a building can be a combination of sparks and embers, direct flame contact or radiant heat (CFA 2012).

Bushfire Scenario 1

The potential bushfire scenario with the highest probable impact on the site involves managed Grassland vegetation in areas of agricultural land located north of Russells Road. Northerly winds generally associated with high-threat or extreme bushfire conditions could potentially drive a grassfire (approaching from the north) that would likely result from local ignition. Potential fire runs to the north are generally less than

one-kilometre and the presence of local roads, and managed (low-risk) vegetation between unmanaged Grassland and the site would reduce the potential for direct flame contact (Figure 2). Ember attack represents the main bushfire threat to the site under this bushfire scenario.

Bushfire Scenario 2

Grassland vegetation is located to the west/southwest of the site in agricultural land. West or southwest winds can result from a northerly wind change during high-threat or extreme bushfire conditions. The change in wind direction can create a new fire front from an established fire. However, fire runs in this direction generally extend for less than one kilometre, and are mitigated by local roads and managed (low-risk) vegetation to the south and west of the site. This type of fire would most likely result from local ignition, and ember attack represents the greatest type of threat to the site under this bushfire scenario.

4.5 Landscape Type

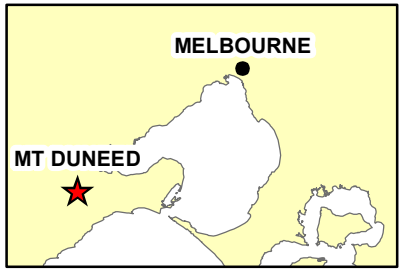
The site corresponds to Broader Landscape Type One as specified in Practice Note 65 (DTPLI 2014) as it meets the following criteria:

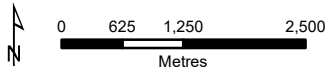
- Vegetation beyond 150 metres of the site comprises is highly modified and comprises crops, agricultural grasslands, modified and low-threat vegetation.
- Extreme bushfire behaviour is not possible.
- The type and extent of vegetation (agricultural grassland) is unlikely to result in neighbourhood-scale destruction of property.
- Immediate access is available to a place that provides shelter from bushfire (Mount Duneed Recreation Reserve located immediately adjacent to the south of the property).

Figure 2
Landscape Hazard Assessment
Russells Road,
Mt Duneed

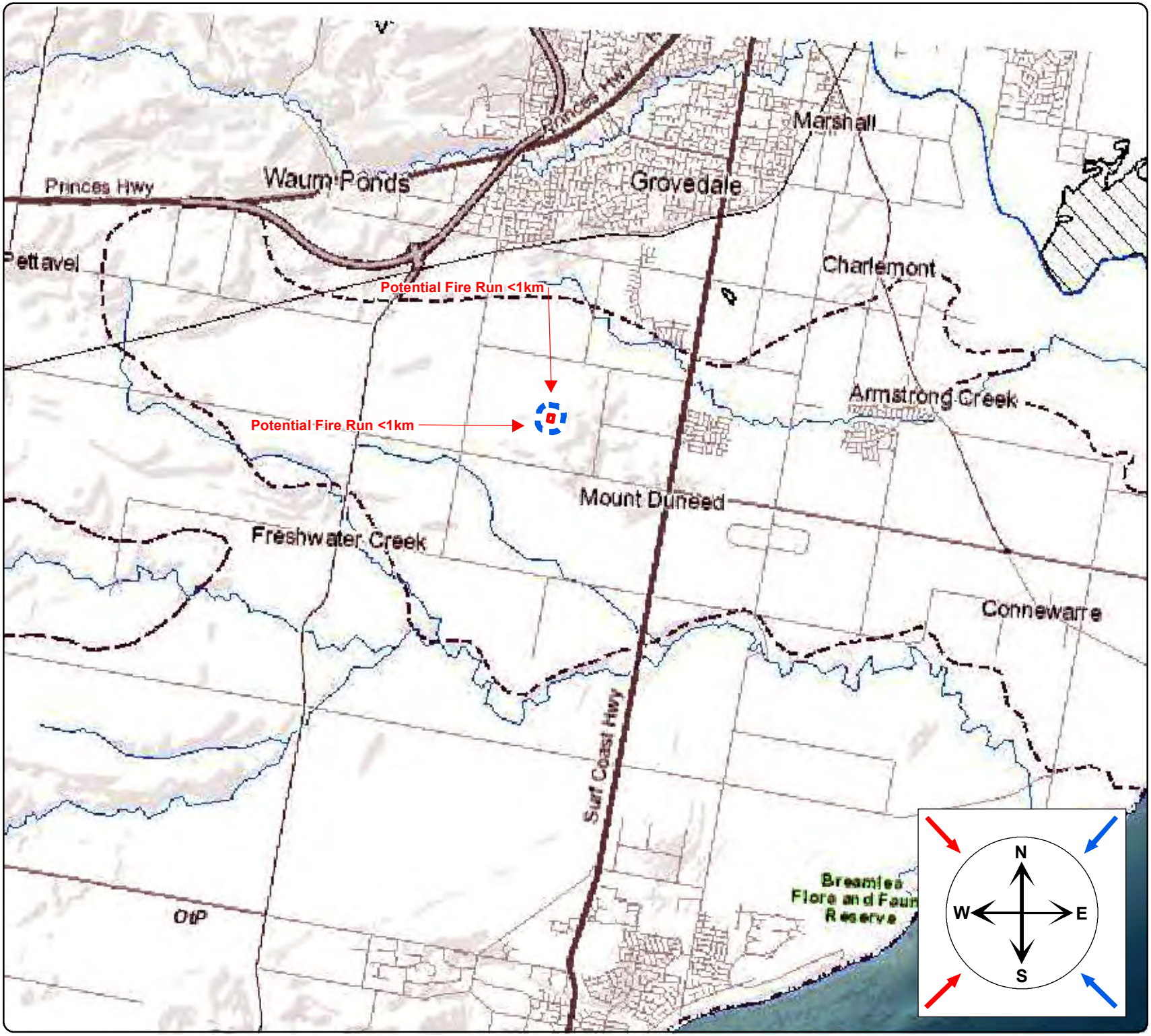
Legend

- Subject Site
- 150m
- Recent Bushfires from 1970





ÖKOLOGIE CONSULTING



5 Bushfire Hazard Site Assessment

5.1 Vegetation Assessment

One classifiable vegetation type (Grassland) was recorded within the 150-metre assessment area. The assessment area also included areas of modified vegetation and low-threat vegetation consisting of grassland managed in a minimal fuel condition, planted windbreaks, and non-vegetated areas (i.e. roads and buildings) (Figure 3). A description of the vegetation types within the 150-metre assessment area is outlined below.

Grassland Vegetation

Areas of open grassland in the property to the north and east of the site meet the Grassland vegetation classification under AS 3959-2009. The majority of this vegetation is subject to grazing and slashing. Grassland vegetation was dominated by exotic pasture species such as Perennial Ryegrass *Lolium perenne*, Cocksfoot *Dactylis glomerata*, Brown-top Bent *Agrostis capillaris*, Onion Grass *Romulea rosea* and Yorkshire Fog-grass *Holcus lanatus* (Plates 1 and 2).

Modified Vegetation

A revegetation area is partially located within the project area and extends onto the adjacent property to the east. Planted native trees and shrubs in the revegetation area included Sugar Gum *Eucalyptus cladocalyx*, Swamp Gum *Eucalyptus ovata,* Black Wattle *Acacia mearnsii* and Silver Wattle *Acacia dealbata*, with minimal understorey cover (<5%) (Plate 3).

Areas dominated by Hedge Wattle *Acacia paradoxa* shrubs have colonised the paddocks within the site and adjacent property. The ground layer under the shrubs generally comprised a sparse grass (5%) cover of native Common Wallaby-grass *Rytidosperma caespitosum*, Bristly Wallaby-grass *Rytidosperma setaceum* and exotic Sweet Vernal-grass *Anthoxanthum odoratum*, Perennial Ryegrass *Lolium perenne*, Couch Grass *Cynodon dactylon* and Onion Grass *Romulea rosea* (Plate 4).

This vegetation was considered modified vegetation as it was sufficiently varied from vegetation classifications under AS 3959-2009, as it comprised limited or no understorey cover, in a minimal fuel condition (DTPLI 2014).

Low-threat Vegetation

Areas of open grassland throughout the site and adjacent Mount Duneed Recreation Reserve were generally managed in a minimal fuel condition (slashed to 100mm) and were considered to meet the low-threat vegetation criteria (DTPLI 2014). Slashed grassland comprised exotic pasture species such as Perennial Ryegrass, Couch Grass,

Onion Grass, Yorkshire Fog-grass and Brown-top Bent (Plates 5 and 6). The adjacent Mount Duneed Recreation Reserve and property to the north also supported planted windbreaks and non-vegetated areas (i.e. roads and building).

Russells Road reserve contains planted Sugar Gum trees with a highly modified ground layer that generally comprised a sparse cover of exotic and native grasses (~5% cover) (Plate 7). The western boundary of the site comprised planted exotic Radiata Pine *Pinus radiata* trees over an exotic dominated ground layer (Plate 8). These areas were considered to meet the low-threat vegetation criteria (DTPLI 2014).

Plate 1: Grassland vegetation - northerly aspect

Plate 2: Grassland vegetation - easterly aspect

Plate 3: Modified vegetation (revegetation area)

Plate 4: Modified vegetation – easterly aspect


Plate 5: Low-threat grassland southerly aspect


Plate 6: Low-threat grassland westerly aspect


Plate 7: Low-threat vegetation along Russells Road reserve


Plate 8: Low-threat planted vegetation westerly aspect

Figure 3
Bushfire Site Hazard Assessment
Russells Road,
Mt Duneed

Legend

Subject Site

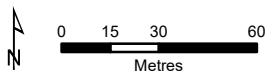
150m Assesment Area

Classifiable Vegetation

Grassland

Modified Vegetation

Low Threat Vegetation



ÖKOLOGIE CONSULTING

5.2 Bushfire Hazard Site Assessment Results

The results of the site assessment in conjunction with Table 2 under Clause 53.02 were used to determine the appropriate BAL and associated defendable space and construction standard.

The bushfire hazard site assessment identified the development is capable of achieving BAL-12.5 defendable space and construction in accordance with Table 2 to Clause 53.02-5. Alternative Measure 3.6 (AltM 3.6) (*A building used for accommodation (other than a dwelling or dependent person's unit)* has been applied to the defendable space and construction requirement due to the presence of modified vegetation to the east, and low-threat vegetation to the north, south and west (Table 1).

The use of AltM 3.6 includes an integrated approach to risk management through provision of a bushfire emergency management plan (Appendix 2).

The application of AltM 3.6 has regard to the bushfire hazard landscape assessment (Broader Landscape Type One). The development is located in a highly modified agricultural area, adjacent to the local road network, town water supply and existing cleared areas. Areas of grassland to the north and west of the site represent a potential bushfire risk to the local area, however this threat is considered to be low through the presence of surrounding agricultural land and low-threat vegetation managed in a minimum fuel condition.

Table 1. Bushfire Hazard Site Assessment Results

Orientation	Classified Vegetation#	Effective Slope	Distance to Classified Vegetation*	Defendable Space**	BAL
North	Low-threat	Flat/Upslope	0 metres	Property boundary	12.5
East	Modified Vegetation	Flat/Upslope	0 metres	Property boundary	12.5
South	Low-threat	Flat/Upslope	0 metres	Property boundary	12.5
West	Low-threat	Downslope 0-5 degrees	0 metres	Property boundary	12.5

#Modified vegetation refers to vegetation that is sufficiently varied from the vegetation classification in AS3959: 2009 *Distance from the property boundary; ** Defendable space is to be provided for a distance of 50 metres, or the property boundary whichever is the lesser, for buildings constructed to all bushfire attack levels. The minimum construction standard is BAL 12.5 (DELWP 2018b).

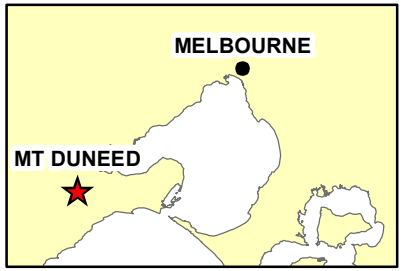
Figure 4
Bushfire Management Plan
Russells Road, Mt Duneed

Legend

- Subject Site
- 150m Assesment Area
- BAL 12 Defendable Space (Property Boundary)

Classifiable Vegetation

- Grassland
- Modified Vegetation
- Low Threat Vegetation



N
0 25 50 100
Metres

ÖKOLOGIE CONSULTING

Defendable Space Management

- Grass must be short cropped and maintained during the declared fire danger period.
- All leaves and vegetation debris must be removed at regular intervals during the declared fire danger period.
- Within 10 metres of a building, flammable objects must not be located close to the vulnerable parts of the building.
- Plants greater than 10 centimetres in height must not be placed within 3m of a window or glass feature of the building.
- Shrubs must not be located under the canopy of trees.
- Individual and clumps of shrubs must not exceed 5 sq. metres in area and must be separated by at least 5 metres.
-Trees must not overhang or touch any elements of the building.
- The canopy of trees must be separated by at least 5 metres.
- There must be a clearance of at least 2 metres between the lowest tree branches and ground level.

Water Supply and Access

- Water hydrants for fire fighting will be specified in the plan of subdivision.

- There are no access design and construction requirements as the length of access is less than 30 metres.

Construction Requirements

- Each dwelling is to be constructed to BAL-12.5 in accordance with AS3959 requirements.

Landscaping

- Any landscaping will conform to the CFA Landscaping for Bushfire Guidelines to reduce the bushfire risk

6 Clause 13.02 Bushfire Planning

6.1 Application Requirements

Clause 13.02 (Bushfire Planning) requires development applications in bushfire prone areas to address the objectives and application requirements of this policy at the planning permit application stage. The objective of Clause 13.02 *is to strengthen the resilience of settlements and communities and prioritise protection of human life*. The relevant application requirements of Clause 13.02 are addressed in Table 2.

Table 2. Response to Clause 13.02

Protection of Human Life	
Strategy	**Response**
Prioritising the protection of human life over all other policy considerations.	The development proposal is for a Residential Alcohol and Drug Rehabilitation Centre. The site is highly modified as a result of previous agricultural land use activities. The site is located in an area of semi-rural development, with agricultural and recreational land use in the immediate surrounds. There is adequate access to the local road network, town water supply and existing cleared areas. Areas of grassland to the north and east of the site represent a potential bushfire risk to the local area, however this threat to human life is considered to be low. The bushfire risk to human life can be mitigated to an acceptable level through the layout, siting and design of the development and implementation of bushfire protection measures.
Directing population growth and development to low risk locations and ensuring the availability of, and safe access to, areas where human life can be better protected from the effects of bushfire.	The proposed development is located within the suburb of Mount Duneed, with semi-rural development, agricultural and recreational land use in the immediate surrounds. Access to the site is via Russells Road, which provides clear and ready access for residents and emergency services. No nearest neighbourhood safer place is listed for Mount Duneed. The Mount Duneed Recreation Reserve is located immediately adjacent to the site and contains ovals and carpark areas that may provide protection from the impact of bushfire conditions.
Reducing the vulnerability of communities to bushfire through the consideration of bushfire risk in decision-making at all stages of the planning process.	The proposed development will not increase the bushfire risk to the local community or the adjacent area and it is located in a low bushfire risk area. Implementing bushfire protection measures may assist in reducing the bushfire risk to adjacent dwellings.

Bushfire hazard identification and assessment	
Strategy	**Response**
Applying the best available science to identify vegetation, topographic and climatic conditions that create a bushfire hazard.	The bushfire hazard has been reviewed using the most current available vegetation, topographic and climatic data, GIS layers and spatial imagery.
Considering the best available information about bushfire hazard including the map of designated bushfire prone areas prepared under the Building Act 1993 or regulations made under that Act.	The area surrounding the development is identified as a bushfire prone area.
Applying the Bushfire Management Overlay in planning schemes to areas where the extent of vegetation can create an extreme bushfire hazard.	The site is located in a highly modified agricultural area, where the existing vegetation cannot create an extreme bushfire risk.
Considering and assessing the bushfire hazard on the basis of: • Landscape conditions - meaning the conditions in the landscape within 20 kilometres and potentially up to 75 kilometres from a site. • Local conditions - meaning conditions in the area within approximately 1 kilometre from a site. • Neighbourhood conditions - meaning conditions in the area within 400 metres of a site; and the site for the development.	The bushfire hazard landscape assessment has address the bushfire hazard of the locality approximately 20 km from the site (Figure 2). The highest bushfire risk within the broader landscape comprises areas of unmanaged grassland vegetation on agricultural land; however, this threat is mitigated through the presence of low-risk vegetation managed in a minimum fuel condition. Extreme bushfire behaviour is not possible within these areas. The local bushfire conditions were addressed within the bushfire hazard landscape assessment (Figure 2). The bushfire risk within the local area comprises areas of unmanaged grassland vegetation on agricultural land; however, surrounding low-threat vegetation, residential development, the local road network, and modified agricultural land reduces this risk to the development. The surrounding landscape was identified as Broader Landscape Type One. The development is located in a highly modified agricultural area, adjacent to the local road network, town water supply and existing cleared areas. Areas of grassland to the north and west of the site represent a potential bushfire risk to the local area, however this threat is considered to be low through the presence of surrounding agricultural land and low-threat vegetation managed in a minimum fuel condition.
Consulting with emergency management agencies and the relevant fire authority early in the process to receive their recommendations and implement appropriate bushfire protection measures.	Consultation has been undertaken with CFA Fire Safety Officer Phillip Wall (Fire & Emergency Management).
Ensuring that strategic planning documents, planning scheme amendments, planning permit applications and development plan approvals properly assess bushfire risk and include appropriate bushfire protection measures.	This application has assessed the bushfire risk through preparation of a bushfire hazard site assessment, landscape hazard assessment, which includes appropriate bushfire protection measures.
Not approving development where a landowner or proponent has not satisfactorily demonstrated	The development can meet the required BAL 12.5 defendable space and construction as well

that the relevant policies have been addressed, performance measures satisfied or bushfire protection measures can be adequately implemented.	as the associated bushfire protection measures to reduce this risk to appropriate levels.
Settlement planning	
Strategy	**Response**
Directing population growth and development to low risk locations, being those locations assessed as having a radiant heat flux of less than 12.5 kilowatts/square metre under AS 3959-2009 Construction of Buildings in Bushfire-prone Areas (Standards Australia, 2009).	The bushfire hazard site assessment identified the development is capable of achieving BAL-12.5 defendable space and construction in accordance with Table 2 to Clause 53.02-5 Alternative Measure 3.6 (A building used for accommodation (other than a dwelling or dependent person's unit) has been applied to the defendable space and construction requirement due to the presence of modified vegetation to the east, and low-threat vegetation to the north, south and west The use of AltM 3.6 also considers the results of the bushfire hazard landscape assessment and provision of a bushfire emergency management plan.
Ensuring the availability of, and safe access to, areas assessed as a BAL-LOW rating under AS 3959-2009 Construction of Buildings in Bushfire-prone Areas (Standards Australia, 2009) where human life can be better protected from the effects of bushfire.	No nearest neighbourhood safer place is listed for Mount Duneed. The Mount Duneed Recreation Reserve is located immediately adjacent to the site and contains ovals and carpark areas that may provide protection from the impact of bushfire conditions.
Ensuring the bushfire risk to existing and future residents, property and community infrastructure will not increase as a result of future land use and development	The proposed development will not increase the bushfire risk to the local community or the adjacent area and it is located in a low bushfire risk area.
Achieving no net increase in risk to existing and future residents, property and community infrastructure, through the implementation of bushfire protection measures and where possible reduce bushfire risk overall.	The development is capable of managing the bushfire risk entirely within the property boundary. Implementing additional bushfire protection measures may assist in reducing the overall risk to adjacent properties.
Assessing and addressing the bushfire hazard posed to the settlement and the likely bushfire behaviour it will produce at a landscape, settlement, local, neighbourhood and site scale, including the potential for neighbourhood-scale destruction.	The bushfire risk to the development from the landscape beyond the site can be mitigated to an acceptable level, as the required defendable space vegetation management measures will be implemented with the ongoing use of the land.
Assessing alternative low risk locations for settlement growth on a regional, municipal, settlement, local and neighbourhood basis.	The development area is located on agricultural land that is considered a low bushfire risk location for settlement growth. It occurs within the existing town boundary, and is accessible from Russells Road.

Not approving any strategic planning document, local planning policy, or planning scheme amendment that will result in the introduction or intensification of development in an area that has, or will on completion have, more than a BAL-12.5 rating under AS 3959-2009.	The bushfire hazard site assessment identified the development is capable of achieving BAL-12.5 defendable space and construction in accordance with Table 2 to Clause 53.02-5.
Use and development control in a Bushfire Prone Area	
Strategy	**Response**
Consider the risk of bushfire to people, property and community infrastructure.	The bushfire risk has been assessed through preparation of a bushfire hazard site assessment, and landscape hazard assessment, which includes appropriate bushfire protection measures. The development is capable of achieving BAL-12.5 defendable space and construction, and is capable of managing the bushfire risk entirely within the property boundary.
Require the implementation of appropriate bushfire protection measures to address the identified bushfire risk.	The required defendable space vegetation management measures can be implemented with the ongoing use of the land.
Ensure new development can implement bushfire protection measures without unacceptable biodiversity impacts.	The site is highly modified as a result of agricultural use. However, it supports 0.168 hectares of native vegetation and two scattered indigenous trees. While the development plan has not been finalised, it is likely that future development of the site will impact this vegetation. However, the development will not result in unacceptable impacts to biodiversity as this native vegetation is highly modified and does not support any threatened species habitat.

7 References

CFA 2011. *Landscaping For Bushfire: Garden design and plant selection*. Country Fire Authority.

CFA 2012. *Planning For Bushfire: Guidelines for meeting Victoria's bushfire planning requirements*. Country Fire Authority.

CFA 2015. *Guideline: Applying the Bushfire Hazard Landscape Assessment in a Bushfire Management. Version 2.1.* Country Fire Authority.

DEWLP 2018a. State Planning Policy Framework 13.02 *Bushfire planning*: Department of Environment, Water, Land and Planning: http://planning-schemes.delwp.vic.gov.au/schemes/vpps

DEWLP 2018b. Planning Scheme Online. Department of Environment, Water, Land and Planning: http://mapshare.maps.vic.gov.au/

DEWLP 2018c. NatureKit. Department of Environment, Water, Land and Planning: http://maps.biodiversity.vic.gov.au/viewer/?viewer=NatureKit

DEWLP 2018d. Clause 53.02 Bushfire Planning. Department of Environment, Water, Land and Planning: http://planning-schemes.delwp.vic.gov.au/schemes/vppsDEWLP

DELWP 2017e. Clause 44.06 Bushfire Management Overlay. Department of Environment, Water, Land and Planning: http://planning-schemes.delwp.vic.gov.au/schemes/vpps

DELWP 2018f. Planning Advisory Note 68: Bushfire State Planning Policy Amendment VC140. Department of Environment, Water, Land and Planning: https://www.planning.vic.gov.au/publications/planning-advisory-notes

DTPLI 2014. *Practice Note 65: Preparing and Assessing a Planning Application Under the Bushfire Provisions in Planning Schemes*. Department of Transport, Planning and Local Infrastructure.

Standards Australia 2009. *Australian Standard: Construction of buildings in bushfire-prone areas AS 3959 – 2009*. Published by Standards Australia, Sydney, NSW.

Appendix 1: Defendable Space

Defendable space is to be managed in accordance with the following requirements:

- Grass must be short cropped and maintained during the declared fire danger period.
- All leaves and vegetation debris must be removed at regular intervals during the declared fire danger period.
- Within 10 metres of a building, flammable objects must not be located close to the vulnerable parts of the building.
- Plants greater than 10 centimetres in height must not be placed within 3m of a window or glass feature of the building.
- Shrubs must not be located under the canopy of trees.
- Individual and clumps of shrubs must not exceed 5 sq. metres in area and must be separated by at least 5 metres.
- Trees must not overhang or touch any elements of the building.
- The canopy of trees must be separated by at least 5 metres.
- There must be a clearance of at least 2 metres between the lowest tree branches and ground level.

Unless specified in a schedule or otherwise agreed in writing to the satisfaction of the relevant fire authority (DELWP 2017b).

Bushfire Emergency Management Plan
120 Russells Road, Mount Duneed

PREMISES DETAILS

This plan for 120 Russells Road, Mount Duneed has been designed to assist the accommodation management to protect life and property in the event of a bush fire.

This plan outlines procedures for both evacuation and shelter-in-place (remaining on site) to enhance the protection of occupants from the threat of a bush fire.

The primary action to follow under normal bush fire conditions is to evacuate.

Address: 120 Russells Road, Mount Duneed, Victoria.
Contact person: TBA
Position: Manager
Contact numbers: TBA

Facility Type: Residential Alcohol and Drug Rehabilitation Centre
Number of Buildings:
Number of Employees:
Number of Occupants:

ROLES AND RESPONSIBILITIES

The following outlines who has the responsibility of implementing the Emergency Procedures in the event of a bushfire.

Role	Person Responsible	Area of Responsibility	Contact
Chief Warden	Manager	Accommodation	TBA
Deputy Warden	Owner's Representative	Accommodation	TBA

COMMUNICATIONS PLAN / PHONE CONTACTS

Communications Plan

The communication plan will include the ability to monitor web sites, fire ready app, a local emergency broadcaster or contact the Victorian Bushfire Information Line (VBIL).

For all emergencies phone 000

Organisation	Phone Number
Country Fire Authority (CFA)	(03) 9262 8444
CFA District 7	(03) 5240 2700
Victorian Police Force – Torquay	(03) 5264 3400
Victorian Ambulance Service	(03) 5338 5000
Surf Coast Shire Council	(03) 5261 0600
State Emergency Service	132 500
Geelong Hospital	(03) 4215 0000
Victorian Bushfire Information Line	1800 240 667
Karuna Maya Medical Centre Jan Juc	(03) 5261 4146

Organisation	Contact Details
Victorian Bushfire Information Line (VBIL)	1800 240 667
Emergency Broadcaster	774 ABC Radio

Mobile Phone Coverage

Network	Mobile Phone Coverage	Mobile Data
Telstra	Yes/No	3G / 4G
Optus	Yes/No	3G / 4G
Vodafone	Yes/No	3G / 4G

Do you have phone coverage at the site for the above mobile phone carriers?

Websites

Organisation	Website Address	Type of Info provided
VicEmergency Management (Warnings, incidents and planned burns)	www.emergency.vic.gov.au	Warnings, incidents and planned burns are all displayed on the VicEmergency website - the single location for all emergency information in Victoria.
Country Fire Authority	http://www.cfa.vic.gov.au/	Fire related information warnings and fire restrictions, planning and preparing for fire,
Country Fire Authority	http://www.cfa.vic.gov.au/warnings-restrictions/information-services/	CFA link page to other Emergency related Web sites
Department of Environment, Land, Water and Planning (Old DEPI)	www.depi.vic.gov.au	Latest information on current fires on public land, including threat alerts, warnings and community meetings
Parks Victoria	www.parkweb.vic.gov.au	This site includes information about closures to roads, tracks, visitor sites and picnic areas
Emergency Alert (telephone warnings)	www.emergencyalert.gov.au	Emergency Alert is the national telephone warning system used by emergency services.
Bureau of Meteorology	www.bom.gov.au/vic/	Victorian Weather and Warnings
State Emergency Service (SES)	www.ses.vic.gov.au	Floods, severe storms, earthquakes, road accident rescue, search and rescue and other emergency support.
Ambulance Victoria	www.ambulance.vic.gov.au	
Australian Red Cross	www.redcross.org.au	Includes information about relief centres, registering and comforting evacuees and first aid care.
Energy Safe Victoria	www.esv.vic.gov.au	Includes information on electricity and gas safety advice during fires and incidents

	Accommodation Management Response & Actions		
Fire Danger Rating Central	**Potential Impact**	**Discussion**	**Actions**
Code Red	These are the worst conditions for a bush or grass fire. Avoid forested areas, thick bush or long, dry grass	Management to advise guests of requirement for temporary relocation from the site. Management monitoring Websites/Bushfire Info line for fire risk 4 days out/ 2 days out.	- All personnel on site are advised that relocation to an alternate 'safer" location is advised until the bush fire risk lessens to **"Severe and below".** - Appropriate signage in place - Management monitoring Websites/Bushfire Info line
Extreme	Expect extremely hot, dry and windy conditions. If a fire starts and takes hold, it will be uncontrollable, unpredictable and fast moving. Spot fires will start, move quickly and come from many directions.	Management to advise guests of requirement for temporary relocation from the site. Management monitoring Websites/Bushfire Info line for fire risk 4 days out/ 2 days out.	All personnel on site are advised that relocation to an alternate 'safer" location is advised until the bush fire risk lessens to **"Severe and below".** - Appropriate signage in place - Management monitoring Websites/Bushfire Info line
Severe	Expect hot, dry and possibly windy conditions. If a fire starts and takes hold it may be uncontrollable.	Management monitoring Websites/Bushfire Info line for fire risk 4 days out/ 2 days out and advise guests accordingly.	- Fuel reduction works maintained around the property to required prescriptions. - Appropriate signage in place - Management monitoring Websites/Bushfire Info line
Very High	If a fire starts, it can most likely be controlled in these conditions and homes can provide safety.	Management monitoring Websites/Bushfire Info line for fire risk 4 days out/ 2 days out and advise guests accordingly.	- Fuel reduction works maintained around the property to required prescriptions. - Appropriate signage in place - Management monitoring Websites/Bushfire Info line
High	If a fire starts, it can most likely be controlled in these conditions and homes can provide safety.	Management monitoring Websites/Bushfire Info line for fire risk 4 days out/ 2 days out and advise guests accordingly.	- Fuel reduction works maintained around the property to required prescriptions. - Appropriate signage in place - Management monitoring Websites/Bushfire Info line
Low/Moderate	If a fire starts, it can most likely be controlled in these conditions and homes can provide safety.	Management monitoring Websites/Bushfire Info line for fire risk 4 days out/ 2 days out and advise guests accordingly.	- Fuel reduction works maintained around the property to required prescriptions. - Appropriate signage in place - Management monitoring Websites/Bushfire Info line

Warnings & Advice

In some cases a voice message may be received on our landline or a text message on a mobile phone via the national "Emergency Alert System". The messaging comprises three levels of alerting.

Warning Level	Risk Level	Actions
Advice	There is a fire in your local area. Access information and monitor conditions.	Guests to contact management immediately for advice on appropriate response. Management to activate response plan as required.
Watch & Act	Fire is heading towards you. Conditions are changing and you may need to start taking action now to protect yourself.	Guests to contact management immediately for advice on appropriate response. Management to activate response plan as required. Consider evacuation to an alternate location **IF TIME PERMITS** or implement shelter in place option.
Emergency Warning	You are in imminent danger and need to take action immediately. You will be impacted by fire.	Guests to contact management immediately for advice on appropriate response. Management to activate response plan as required. It is likely **TOO LATE** to evacuate to an alternate location. Consider implementation of **Shelter In Place** option.

EVACUATION PROCEDURES

Evaluation of the safety of employees and occupants has determined that it would be safer for all persons to EVACUATE to a planned evacuation site.

Time required to evacuate premises: 15 Minutes

Designated Assembly Point: Immediately north of accommodation on gravel driveway.

Transportation Arrangements:

Number of vehicles required: TBC
Transportation provided by: Site vehicles

Planned Evacuation Site

Name of primary venue: Mount Duneed Recreation Reserve
Address of venue: Russells Road, Mount Duneed
Nearest cross-street: Ghazeepore Road
Drive time to site: 1 minute

Alternate Evacuation Site

Name of primary venue: Torquay Secondary College
Address of venue: 75 White St, Torquay
Nearest cross-street: Surf Coast Highway
Drive time to site: 10 minutes

EVACUATION ACTION STATEMENT

At the Commencement of the Bushfire Danger Period:

1. Ensure that manager and owner's representative are prepared in accordance with the Bushfire Emergency Plan.
2. Ensure that all persons are informed of the evacuation and fall back shelter-in-place procedures.
3. Ensure that all signage within the accommodation and onsite is up to date and is in place.
4. Ensure that all guests are provided with copies of the procedures on arrival, and that the manager explains these procedures to them.
5. Ensure that the accommodation is protected and maintained to a BAL-12.5 and the surrounding defendable spaces are maintained – being 60 metres north of the accommodation, 70 metres east, 85 metres south and 60 metres west.
6. Update contact details of manager and owner's representatives.
7. Contact and update emergency services of the premises contact details.
8. Contact off-site evacuation locations for potential use during a bush fire emergency.
9. Advise guests that they will be taken offsite on days declared a code red fire danger day.

During a Bushfire – Evacuation Procedures

In the event of a bushfire in the surrounding area, occupants of the premises shall follow the procedure outlined below.

When aware that a bushfire is in the local area the manager shall:

- Using the appropriate media i.e. Bushfire info Line, Website, Phone App etc, determine the current/predicted bushfire situation.
- Inform the guests of the fire situation.
- Ensure that the person in charge has a mobile phone and is contactable.
- Make arrangements for transportation in the unlikely event that the guests did not arrive in their own vehicles.

In the event of a bushfire threatening where it has been decided an evacuation will take place, the manager of the accommodation shall follow the procedure outlined below.

- Keep occupants inside with doors and widows closed.
- Remain calm and explain to guests what is happening, whether over the phone or in person.
- Inform emergency services of evacuation. If there was a fire running in the area
- Guests to proceed to the Designated Assembly Area (north of the accommodation on the gravel driveway).
- Ensure that all persons are accounted for (using list of occupants).
- Evacuate to the designated evacuation location.
- After all the occupants have been evacuated, the manager will commence contacting relevant families affected.

After the Bush Fire Emergency:

When the bushfire threat has passed and the area is deemed safe by emergency services:

- No person should re-enter any evacuated building until advised by the Officer in Charge of the emergency service.
- The manager to arrange the movement of occupants back to the site, using the same procedures for their initial relocation.
- All occupants are to be accounted for on their return.

SHELTER-IN-PLACE PROCEDURES

In the event of a bush fire in the nearby surrounding area where there is insufficient time to arrange an evacuation, occupants of the accommodation shall follow the procedure outlined below:

- Close all doors and windows, stay inside.
- Ensure all combustible items around the building eg outdoor furniture, door mats etc are brought inside/moved to a location well away from the building. Close valves on LPG cylinders, ensure cylinders are secured and relief valves are pointing away from any structures.
- Remain calm and explain to occupants what is happening either via phone or in person.
- Fill water points inside the building eg bath, laundry trough, kitchen sink.
- Ensure adequate drinking water for occupants in the building
- Ensure all occupants are wearing appropriate clothing ie all limbs covered, non synthetic materials
- Ensure all occupants are provided with appropriate protective equipment ie face mask (P2).
- Place dampened woollen blankets/towels in an easily accessible location.
- Ensure all occupants remain inside the building during the passage of the fire.
- Ensure that the occupants always have a point of exit from the building in whatever room they are sheltering in.
- If the building does catch fire close the door to the room that is on fire. Move to the other end of the building closing the doors behind you.
- As soon as it is safe to do so move outside away from the building onto **Burnt Ground.**
- If it is safe to do so extinguish any burning embers, materials up to and around the building.
- Ensure all persons are accounted for (using list of occupants)

INTERNAL FIRE PROCEDURES

On arrival at the accommodation, the accommodation manager will instruct the guests on operation of fire extinguishers and procedures.

In the event of an internal fire:

- Phone 000 and advise them that there is a fire on the site.
- If the manager is not present at the accommodation at the time of the fire, guests can endeavour to put out the fire with the fire equipment in the accommodation if they feel comfortable doing so.
- If the guests are unable to extinguish the fire, or are not comfortable doing so, the guests should assemble at the assembly point to the north of the accommodation on the gravel driveway.
- Ensure that all occupants are accounted for.
- Phone the manager or owner's representative and inform them of the situation.
- Do not return into the accommodation until the fire has been extinguished and the CFA has deemed it safe to enter.

ATTACHMENT 1: OCCUPANT/ EMPLOYEE LIST

Name of Person	Any Special Needs	Person Accounted For (Tick)

ATTACHMENT 2: EMERGENCY CONTACT DETAILS

Name of Person	Emergency Contact & Relationship	Emergency Contact Number	Person Accounted For (Tick)