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# **Bushfire Hazard Assessment**

**120 Russells Road, Mount Duneed**

**Prepared for:  
St Quentin Consulting**



## Document Information

Bushfire Hazard Assessment for 120 Russells Road, Mount Duneed

Report prepared by Okologie Consulting Pty Ltd for St Quentin Consulting

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## Document Control

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## 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 defensible 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.

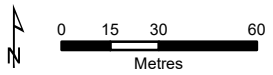
The site topography is generally flat with low undulating slopes towards the southwest of the assessment area. The site is highly modified from agriculture use and comprises areas of exotic dominated grassland, interspersed with planted exotic trees present along the property boundary. Native vegetation 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



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## 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/m<sup>2</sup>). 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 defensible space provides an adequate safety zone around buildings (CFA 2015).

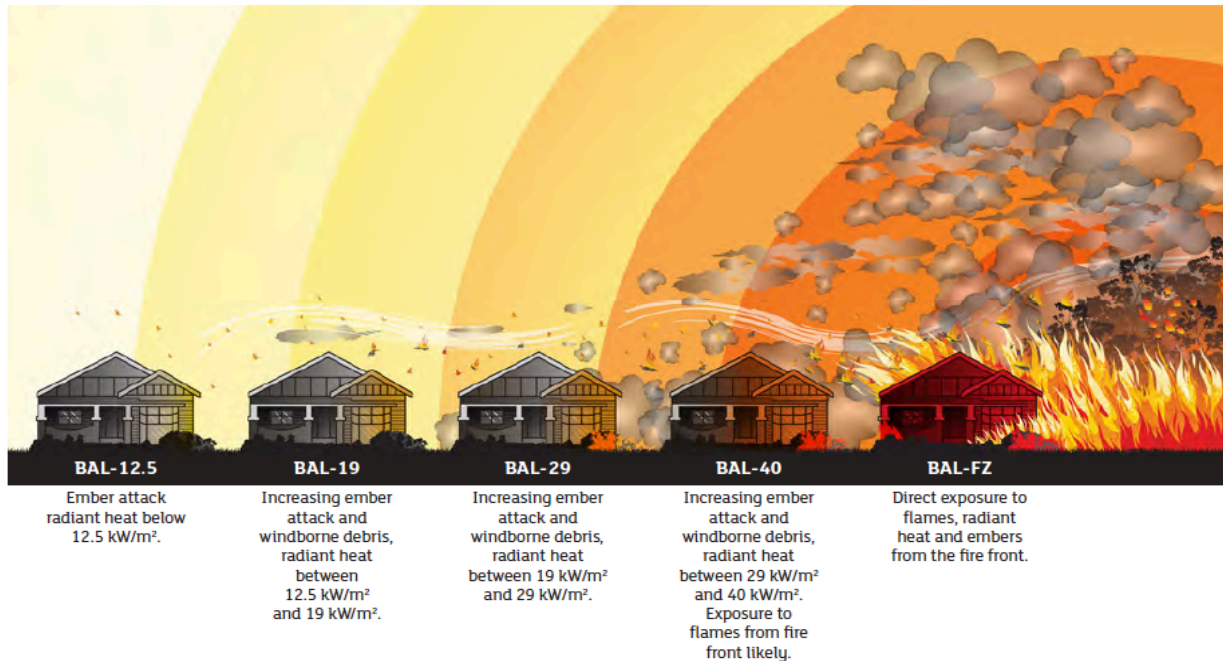


Plate 1. Bushfire Attack Levels and hazards associated with bushfire threats (Source: CFA 2012).

### 3.3 Vegetation

For the purposes of determining the defensible 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).

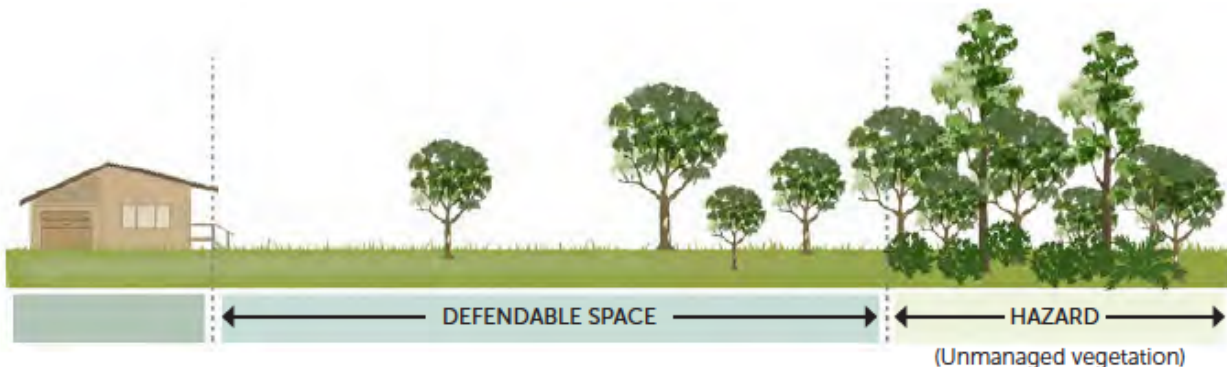


Plate 2. Defendable space around a building (Source: CFA 2015).

### 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, defensible 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**

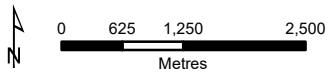
The site corresponds to Broader Landscape Type One as specified in Practice Note 65 (DTPLI 2014) as it meets the following criteria:

- 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).

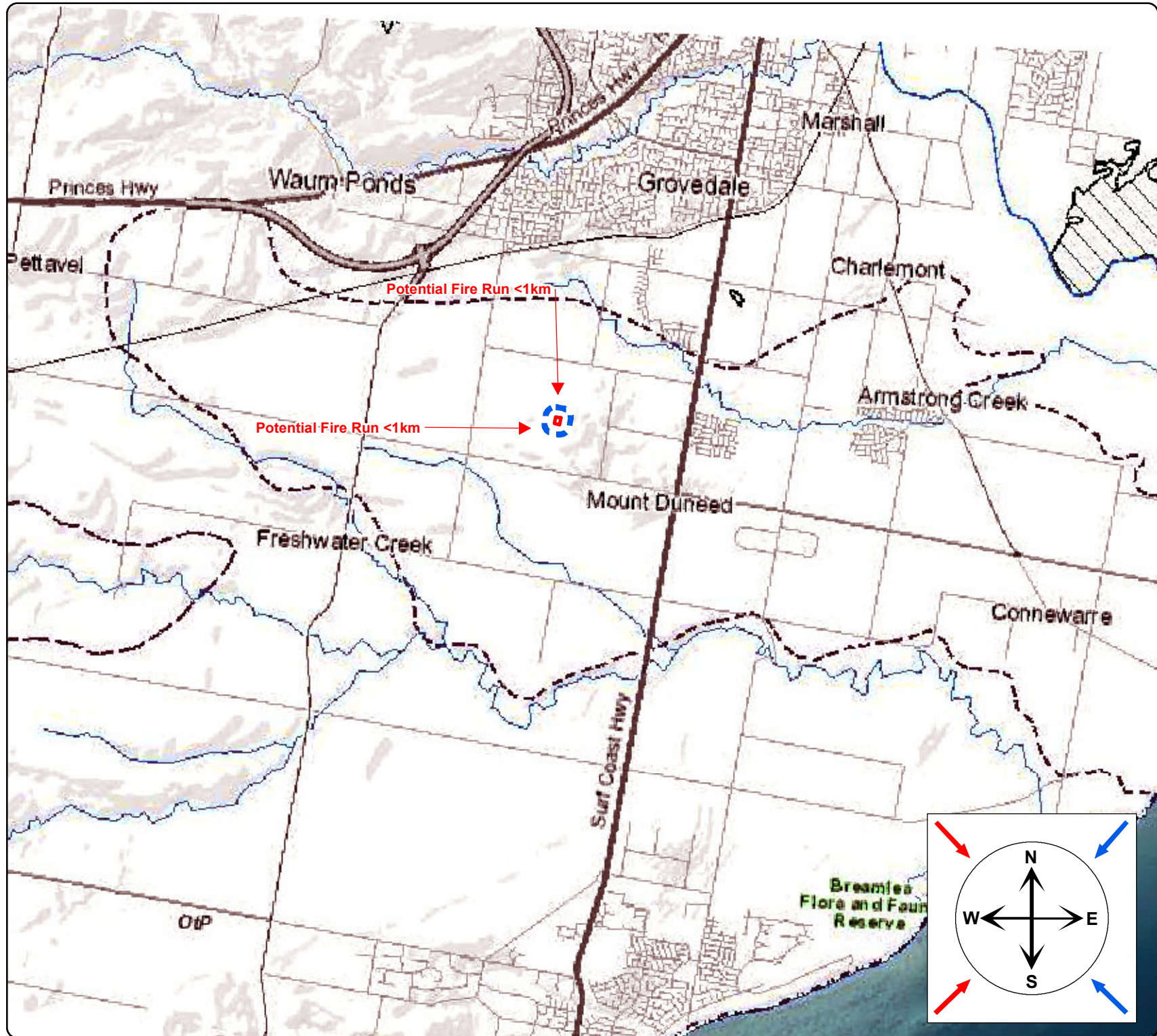
**Figure 2**  
*Landscape Hazard Assessment*  
Russells Road,  
Mt Duneed

**Legend**

-  Subject Site
-  150m
-  Recent Bushfires from 1970



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## 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

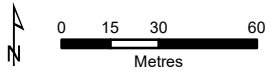
**Figure 3**  
*Bushfire Site Hazard Assessment*  
Russells Road,  
Mt Duneed

**Legend**

-  Subject Site
-  150m Assesment Area

**Classifiable Vegetation**

-  Grassland
-  Modified Vegetation
-  Low Threat Vegetation



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## 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 defensible space and construction standard.

The bushfire hazard site assessment identified the development is capable of achieving BAL-12.5 defensible 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 defensible 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).

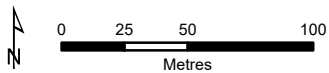
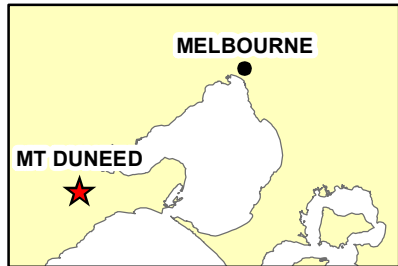
**Figure 4**  
**Bushfire Management Plan**  
 Russells Road, Mt Duneed

**Legend**

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

**Classifiable Vegetation**

-  Grassland
-  Modified Vegetation
-  Low Threat Vegetation



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.	<p>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.</p> <p>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.</p> <p>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.</p>
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.	<p>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.</p> <p>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.</p>
Reducing the vulnerability of communities to bushfire through the consideration of bushfire risk in decision-making at all stages of the planning process.	<p>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.</p>



<b>Bushfire hazard identification and assessment</b>	
<b>Strategy</b>	<b>Response</b>
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.
<p>Considering and assessing the bushfire hazard on the basis of:</p> <ul style="list-style-type: none"> <li>• Landscape conditions - meaning the conditions in the landscape within 20 kilometres and potentially up to 75 kilometres from a site.</li> <li>• Local conditions - meaning conditions in the area within approximately 1 kilometre from a site.</li> <li>• Neighbourhood conditions - meaning conditions in the area within 400 metres of a site; and the site for the development.</li> </ul>	<p>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.</p> <p>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.</p> <p>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.</p>
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 defensible 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.
<b>Settlement planning</b>	
<b>Strategy</b>	<b>Response</b>
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).	<p>The bushfire hazard site assessment identified the development is capable of achieving BAL-12.5 defensible space and construction in accordance with Table 2 to Clause 53.02-5</p> <p>Alternative Measure 3.6 (A building used for accommodation (other than a dwelling or dependent person's unit) has been applied to the defensible space and construction requirement due to the presence of modified vegetation to the east, and low-threat vegetation to the north, south and west</p> <p>The use of AltM 3.6 also considers the results of the bushfire hazard landscape assessment and provision of a bushfire emergency management plan.</p>
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.	<p>The development is capable of managing the bushfire risk entirely within the property boundary.</p> <p>Implementing additional bushfire protection measures may assist in reducing the overall risk to adjacent properties.</p>
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 defensible 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.



<p>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.</p>	<p>The bushfire hazard site assessment identified the development is capable of achieving BAL-12.5 defensible space and construction in accordance with Table 2 to Clause 53.02-5.</p>
<p><b>Use and development control in a Bushfire Prone Area</b></p>	
<p><b>Strategy</b></p>	<p><b>Response</b></p>
<p>Consider the risk of bushfire to people, property and community infrastructure.</p>	<p>The bushfire risk has been assessed through preparation of a bushfire hazard site assessment, and landscape hazard assessment, which includes appropriate bushfire protection measures.</p> <p>The development is capable of achieving BAL-12.5 defensible space and construction, and is capable of managing the bushfire risk entirely within the property boundary.</p>
<p>Require the implementation of appropriate bushfire protection measures to address the identified bushfire risk.</p>	<p>The required defensible space vegetation management measures can be implemented with the ongoing use of the land.</p>
<p>Ensure new development can implement bushfire protection measures without unacceptable biodiversity impacts.</p>	<p>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.</p>



## 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/vpps> DEWLP

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.

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

## Accommodation Management Response & Actions

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

## 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.	<p>Guests to contact management immediately for advice on appropriate response.</p> <p>Management to activate response plan as required.</p>
Watch & Act	Fire is heading towards you. Conditions are changing and you may need to start taking action now to protect yourself.	<p>Guests to contact management immediately for advice on appropriate response.</p> <p>Management to activate response plan as required. Consider evacuation to an alternate location <b>IF TIME PERMITS</b> or implement shelter in place option.</p>
Emergency Warning	You are in imminent danger and need to take action immediately. You will be impacted by fire.	<p>Guests to contact management immediately for advice on appropriate response.</p> <p>Management to activate response plan as required. It is likely <b>TOO LATE</b> to evacuate to an alternate location. Consider implementation of <b>Shelter In Place</b> option.</p>

## 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 defensible 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 windows 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**

<b>Name of Person</b>	<b>Any Special Needs</b>	<b>Person Accounted For (Tick)</b>

**ATTACHMENT 2: EMERGENCY CONTACT DETAILS**

<b>Name of Person</b>	<b>Emergency Contact &amp; Relationship</b>	<b>Emergency Contact Number</b>	<b>Person Accounted For (Tick)</b>