

Bushfire Assessment

LOT 1, OLD PETERBOROUGH ROAD, PETERBOROUGH



Multi-Lot Subdivision

Reference: 32225

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The Property Owner

FORMAL LAND DESCRIPTION:

Lot 1 on PS915697

PROPOSAL:

Multi-Lot Subdivision

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1 INTRODUCTION

Millar Merrigan have been engaged to prepare this Bushfire Assessment by the property owner in relation to a ***Multi-Lot Subdivision*** at ***Lot 1, Old Peterborough Road, Peterborough***.

This assessment seeks to provide details and discussion in response to Clause 13.02 Bushfire Planning.

This report will assist Council, as the planning authority to consider bushfire risk in relation to the proposed subdivision as required by State Planning Policies.

It is not a BAL assessment and should not be used as part of the building permit process.

2 THE SITE

The land subject to this planning application is known formally as Lot 1 on PS915697 and is located west of Old Peterborough Road. It is vacant, comprising mostly of pasture grass and whilst relatively flat, has some low points. Various easements are present.



Figure 1: Aerial Image of Study Area

Established Urban development is located south and west, with larger residentially zoned allotments to the east. To the north is cleared farming land.



Figure 2: Land Zoning (source: VicPlan)

3 THE PROPOSAL

The application seeks approval to subdivide the land, creating 53 residential allotments, a new road network and series of small reserves.

A perimeter road is located on the north interface given that this is the urban/farming interface.

All lots have access from the proposed internal road network and as such will have access to fire hydrants. Roads will be designed and constructed to suitable standards to cater for emergency service vehicles in accordance with appropriate permit conditions.



Figure 3: Proposed subdivision layout

4 BUSHFIRE POLICY

Planning Schemes contain a range of policies that are used to inform decision making and particular emphasis is placed on bushfire risk as outlined below.

4.1 CLAUSE 71.02 OPERATION OF THE PLANNING POLICY FRAMEWORK

The Planning Policy Framework provides a context for spatial planning and decision making by planning and responsible authorities. *Integrated Decision Making (71.02-3)* states that:

Planning and responsible authorities should endeavour to integrate the range of planning policies relevant to the issues to be determined and balance conflicting objectives in favour of net community benefit and sustainable development for the benefit of present and future generations. However, in bushfire affected areas, planning and responsible authorities must prioritise the protection of human life over all other policy considerations.

In accordance with this directive, bushfire considerations must be prioritised over all other elements and this emphasis was introduced to the scheme through Amendment VC140 (December 2017) which was a recommendation made by the 2009 Victorian Bushfires Royal Commission.

4.2 PLANNING POLICY FRAMEWORK

The Planning Policy Framework is based around a series of themes, which includes *Clause 13 Environmental Risks and Amenity*. *Clause 13.02-1S Bushfire Planning* is of particular relevance to decision making and seeks:

- *To strengthen the resilience of settlements and communities to bushfire through risk-based planning that prioritises the protection of human life.*

A series of strategies are outlined in this clause as follows:

PROTECTION OF HUMAN LIFE

Give priority to the protection of human life by:

- *Prioritising the protection of human life over all other policy considerations.*
- *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.*
- *Reducing the vulnerability of communities to bushfire through the consideration of bushfire risk in decision making at all stages of the planning process.*

BUSHFIRE HAZARD IDENTIFICATION AND ASSESSMENT

Identify bushfire hazard and undertake appropriate risk assessment by:

- *Applying the best available science to identify vegetation, topographic and climatic conditions that create a bushfire hazard.*
- *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.*
- *Applying the Bushfire Management Overlay to areas where the extent of vegetation can create an extreme bushfire hazard.*
- *Considering and assessing the bushfire hazard on the basis of:*
 - *Landscape conditions - meaning conditions in the landscape within 20 kilometres (and potentially up to 75 kilometres) of a site;*
 - *Local conditions - meaning conditions in the area within approximately 1 kilometre of a site;*

- Neighbourhood conditions - meaning conditions in the area within 400 metres of a site; and
- The site for the development.
- Consulting with emergency management agencies and the relevant fire authority early in the process to receive their recommendations and implement appropriate bushfire protection measures.
- 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.
- Not approving development where a landowner or proponent has not satisfactorily demonstrated that the relevant policies have been addressed, performance measures satisfied or bushfire protection measures can be adequately implemented.

SETTLEMENT PLANNING

Plan to strengthen the resilience of settlements and communities and prioritise protection of human life by:

- 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).
- 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.
- 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.
- 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 reducing bushfire risk overall.
- 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.
- Assessing alternative low risk locations for settlement growth on a regional, municipal, settlement, local and neighbourhood basis.
- 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 Construction of Buildings in Bushfire-prone Areas (Standards Australia, 2009).

AREAS OF BIODIVERSITY CONSERVATION VALUE

Ensure settlement growth and development approvals can implement bushfire protection measures without unacceptable biodiversity impacts by discouraging settlement growth and development in bushfire affected areas that are important areas of biodiversity.

USE AND DEVELOPMENT CONTROL IN A BUSHFIRE PRONE AREA

In a bushfire prone area designated in accordance with regulations made under the Building Act 1993, bushfire risk should be considered when assessing planning applications for the following uses and development:

- **Subdivisions of more than 10 lots.**
- Accommodation.
- Child care centre.
- Education centre.
- Emergency services facility.
- Hospital.

- *Indoor recreation facility.*
- *Major sports and recreation facility.*
- *Place of assembly.*
- *Any application for development that will result in people congregating in large numbers.*

When assessing a planning permit application for the above uses and development:

- *Consider the risk of bushfire to people, property and community infrastructure.*
- *Require the implementation of appropriate bushfire protection measures to address the identified bushfire risk.*
- *Ensure new development can implement bushfire protection measures without unacceptable biodiversity impacts.*

4.3 BUSHFIRE MANAGEMENT OVERLAY

The Bushfire Management Overlay (Clause 44.06) (BMO) is applied to areas where there is potential for extreme bushfire behaviour, such as a crown fire, extreme ember attack and radiant heat. It seeks:

- *To implement the Municipal Planning Strategy and the Planning Policy Framework.*
- *To ensure that the development of land prioritises the protection of human life and strengthens community resilience to bushfire.*
- *To identify areas where the bushfire hazard warrants bushfire protection measures to be implemented.*
- *To ensure development is only permitted where the risk to life and property from bushfire can be reduced to an acceptable level.*

The BMO mapping addresses bushfire hazard through assessment of fire behaviour generated from several factors including topography, fire fuel type and load, and weather. A key output is modelled head fire intensity levels which is a measure of the rate of energy release per unit length of fire front expressed as kW/m. The most significant bushfire hazard is where head fire intensity is modelled to be 30,000kW/m or more. This level of hazard informs where the BMO applies. (Source: Planning Advisory Note 46 Bushfire Management Overlay Mapping Methodology and Criteria, DTPLI, 2013).

Pursuant to the BMO a permit is required to subdivide land and undertake buildings and works associated with a series of specified uses, including accommodation. It applies the requirements of Clause 53.02 Bushfire Planning which seek:

- *To ensure that the development of land prioritises the protection of human life and strengthens community resilience to bushfire.*
- *To ensure that the location, design and construction of development appropriately responds to the bushfire hazard.*
- *To ensure development is only permitted where the risk to life, property and community infrastructure from bushfire can be reduced to an acceptable level.*
- *To specify location, design and construction measures for a single dwelling that reduces the bushfire risk to life and property to an acceptable level.*

The BMO and subsequently Bushfire Planning are therefore applicable when land is covered by the overlay.

As shown in Figure 4 below, the subject site is not covered by the BMO and as such these requirements are not applicable to the application. The closest BMO mapping is located only 40m west in response to vegetation cover in this location.

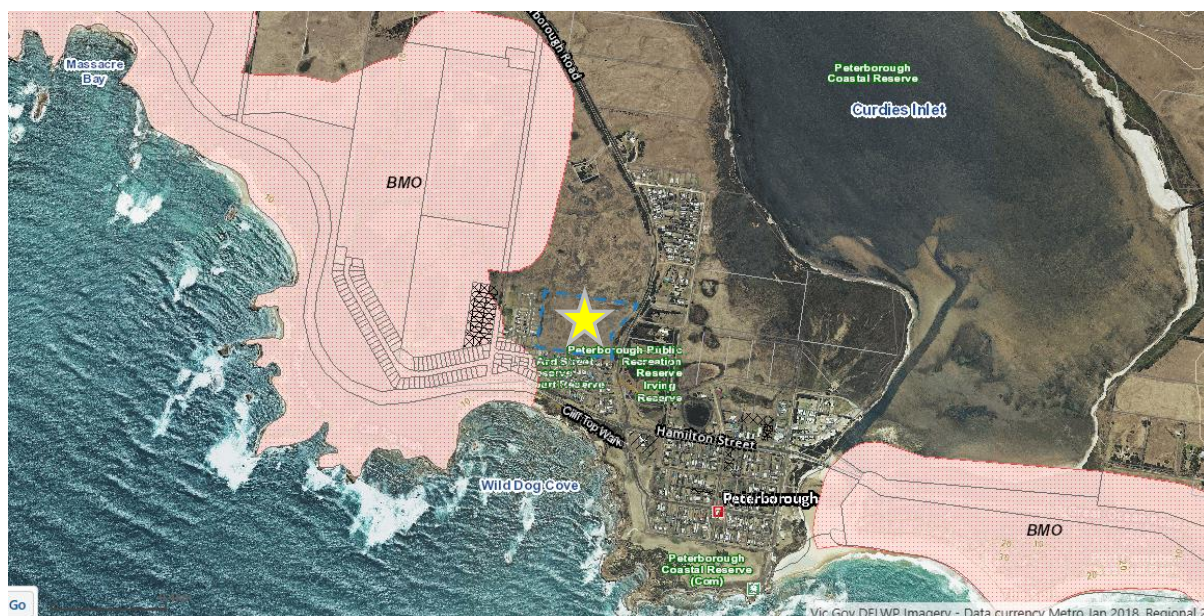


Figure 4: Bushfire Management Overlay Mapping – site highlighted with yellow star (source: mapshare.vic.gov.au)

4.4 BUSHFIRE PRONE AREAS

Bushfire Prone Areas (BPA) are locations that are subject to, or likely to be subject to bushfires and are determined by the Minister for Planning for the purposes of the building control system. Specific bushfire construction standards apply in designated BPA in Victoria and these are aimed at improving bushfire protection for residential buildings.

BPA mapping includes all areas mapped by the BMO and extend to wider areas where moderate bushfire hazard can be expected. These are areas with head fire intensity modelled to be between 4,000kW/m and 30,000kW/m. (Source: Planning Advisory Note 46 Bushfire Management Overlay Mapping Methodology and Criteria, DTPLI, 2013).

A minimum construction standard applies to new residential buildings, schools, child care centres, hospitals, aged care facilities and associated buildings in designated Bushfire Prone Areas. Landowners are required to build to a minimum Bushfire Attack Level of 12.5.

A Bushfire Attack Level (BAL) is a way of measuring the severity of a building's potential exposure to ember attack, radiant heat and direct flame contact. There are six Bushfire Attack Levels that form part of the Australian Standard for construction of buildings in bushfire prone areas (AS 3959-2009); BAL-LOW, BAL-12.5, BAL-19, BAL-29, BAL-40 and BAL-FZ (Flame Zone).



Figure 5: Building Impact (source BMO Technical Guide, DELP, 2017)

The requirements of the BPA are applied at building permit stage under the *Building Regulations, 2018*.

The subject land and surrounding area is wholly contained within the BPA (see Figure 6 below), with the only area excluded, the Curdies Inlet and the ocean.



Figure 6: Bushfire Prone Area Mapping (source: mapshare.vic.gov.au)

5 BUSHFIRE HAZARD LANDSCAPE ASSESSMENT

The bushfire hazard landscape assessment provides information on the bushfire hazard for 20km (or greater) around a development site. Considering bushfire from this broader landscape perspective is important as it affects the level of bushfire risk a development and its future occupants may be exposed to. The landscape assessment seeks to:

- *Provide factual information on the bushfire hazard (vegetation extent and slope)*
- *Provide information on key features of the general locality that are relevant to better understanding the protection provided by the location*
- *Provide contextual information on a site*

(Source: Planning Permit Applications Bushfire Management Overlay, Technical Guide, DELWP, 2017).

The broader landscape and the potential size or scale of a bushfire is an important consideration for decision makers as the likelihood of a bushfire, its severity and intensity, and the potential impact on life and property varies depending on where a site is located in the surrounding landscape.

Bushfire is a dynamic hazard and can be highly unpredictable. Because of this the factors that contribute to the bushfire risk are diverse. The purpose of the landscape assessment is not to predict the outcome of a bushfire event but to provide information that builds a better understanding of the bushfire risk in a location and to help make informed decisions. *(Source: Planning Permit Applications Bushfire Management Overlay, Technical Guide, DELWP, 2017).*

The following sections provide an assessment against the bushfire hazard landscape around the subject site.

5.1 FEATURES

The wider landscape is divided into four distinct areas as follows:

- **Urban Areas:**
Peterborough offers a small coastal urban settlement whereby the built up conditions do not pose a bushfire risk.
- **Farming Areas:**
Cleared farming land dominates the northern, eastern and western parts of the assessment area. The grassed areas in these locations create a fire risk to the urban interface areas and fire runs in excess of 10km could occur.
- **Vegetated Areas:**
The main areas of high risk vegetation are within the Peterborough Coastal Reserve, along the coast and some other vegetation patches inland. These are not of a size that would facilitate landscape scale fires.
- **Waterbodies:**
The ocean & Curdies Inlet are BAL-low areas that do not create any bushfire hazard.

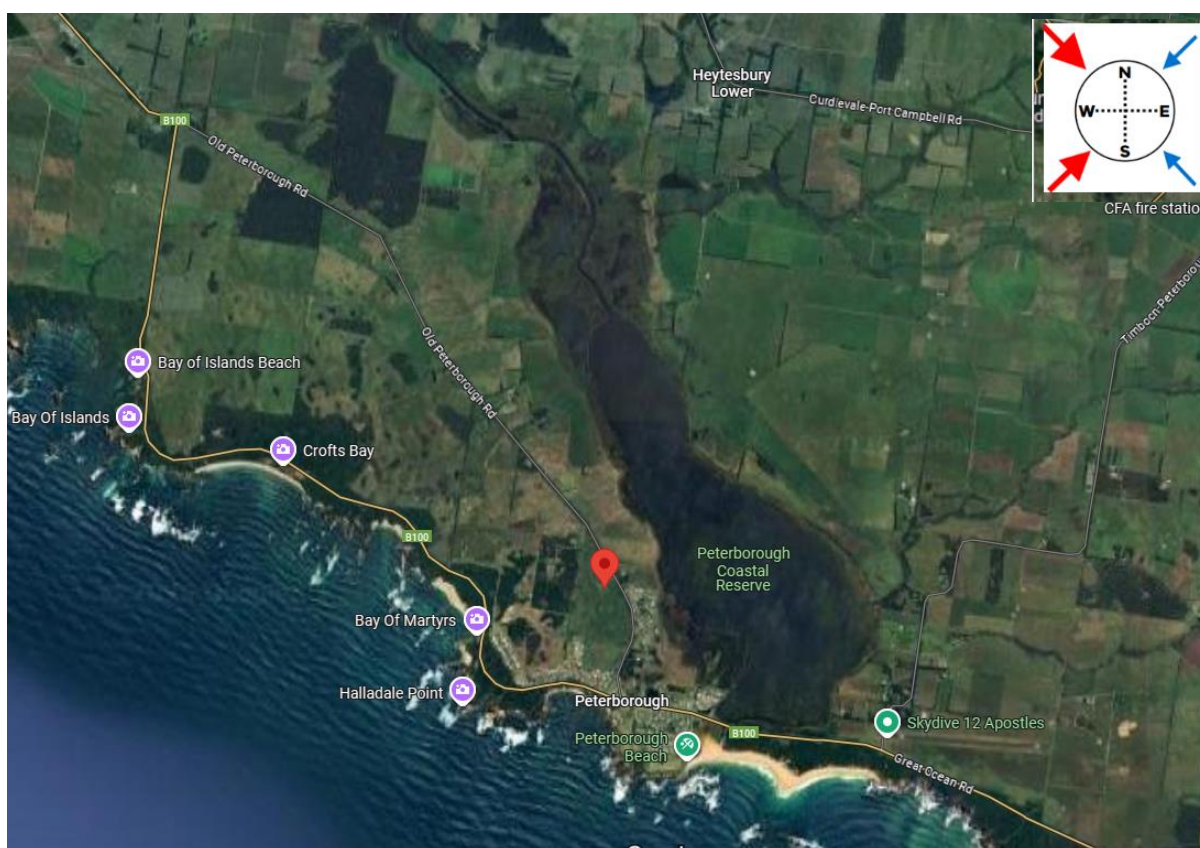


Figure 7: Landscape Assessment

5.2 LANDSCAPE TYPE

Landscape types are set out within the Bushfire Management Overlay Technical Guide (DELWP, 2017) and this location is considered to be consistent with Broader Landscape Type 2, which is described as follows:

- *The type and extent of vegetation located more than 150 metres from the site may result in neighbourhood-scale destruction as it interacts with the bushfire hazard on and close to a site.*
- *Bushfire can only approach from one aspect and the site is located in a suburban, township or urban area managed in a minimum fuel condition.*
- *Access is readily available to a place that provides shelter from bushfire. This will often be the surrounding developed area.*

(source: Planning Permit Applications Bushfire Management Overlay, Technical Guide, DELWP, 2017).

5.3 BUSHFIRE HISTORY

Bushfire history data shows that large scale fires have occurred to the north (1983) some 10km north of Peterborough with smaller outbreaks along the coast.

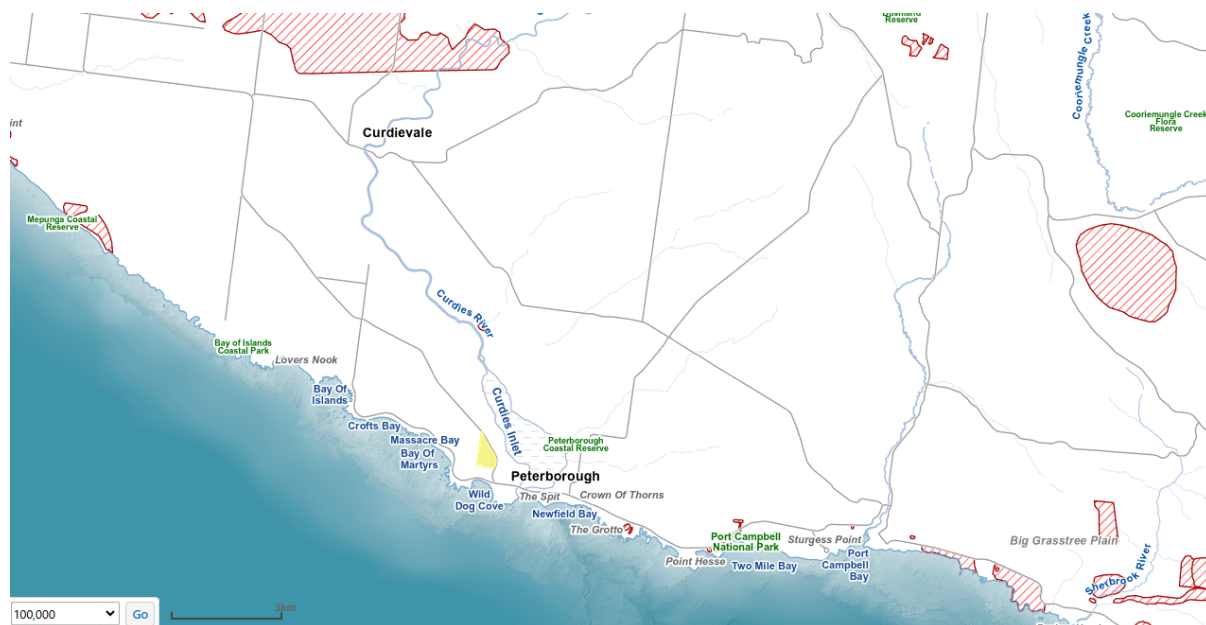


Figure 8: Bushfire History (source: mapshare.vic.gov.au)

5.4 FIRE OPERATIONS PLAN

The Fire Operations Plan shows that there are no planned burns in this location, however coastal areas are within fire management zones as shown below.

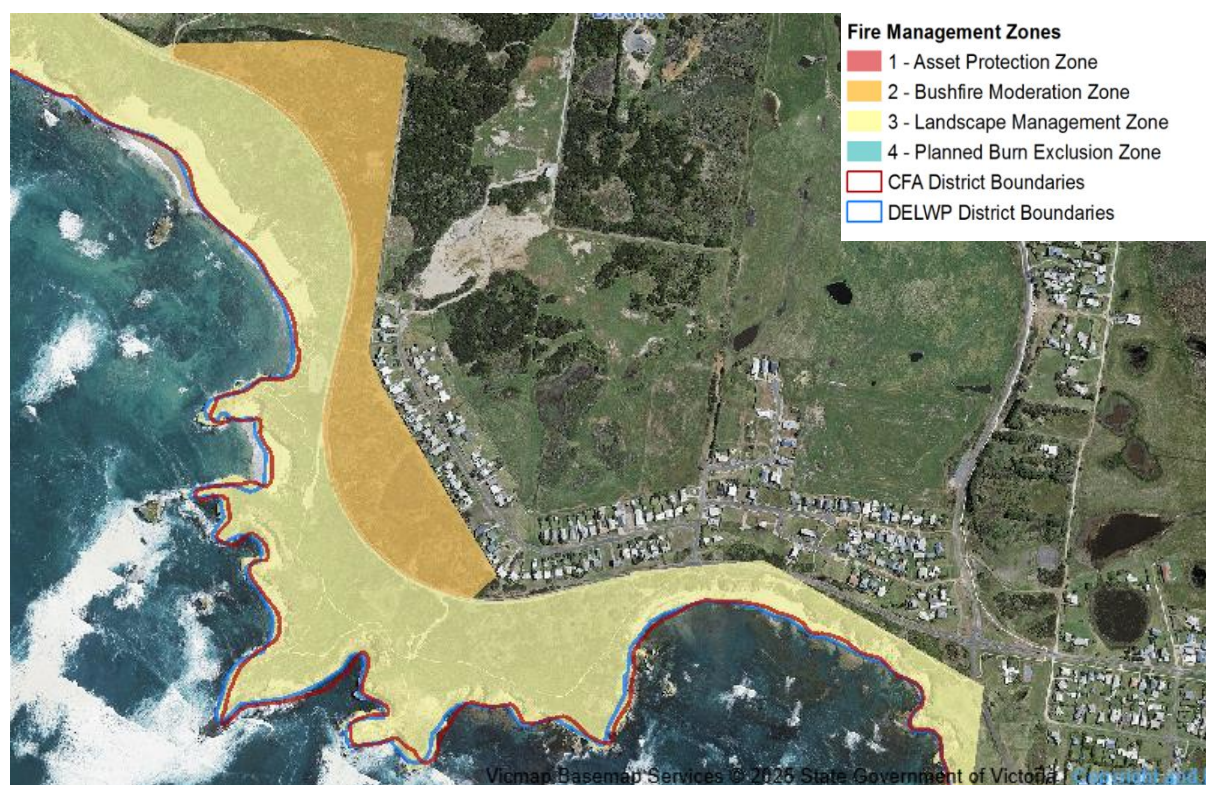


Figure 9: Fire Operations Plan (source: mapshare.vic.gov.au)

6 BUSHFIRE HAZARD SITE ASSESSMENT

The bushfire hazard site assessment documents the bushfire hazard on and near a site. The assessment seeks to:

- Provide factual information on the bushfire hazard (vegetation type and slope)
- Inform defensible space and building construction requirements

(Source: Planning Permit Applications Bushfire Management Overlay, Technical Guide, DELWP, 2017).

It is informed by the methodology contained in *Australian Standard AS3959:2009 Construction of buildings in bushfire prone areas (AS3959)* to provide contextual information on a site.

The following sections provide an assessment against the bushfire hazard site assessment.

6.1 LOCAL & NEIGHBOURHOOD CONDITIONS

The local (1km) and neighbourhood conditions (400m) around the land comprise a mix of urban development, cleared farming land, patches of inland and coastal vegetation, and waterbodies.



Figure 10: Local & Neighbourhood Conditions

6.2 TOPOGRAPHY

The topography in the area is generally flat.

6.3 DEFENDABLE SPACE

It is a requirement of Clause 13.02 that population growth and development be directed to low risk locations and that an application for accommodation in a BPA consider bushfire risk in accordance with the *Building Act, 1993*. This applies *AS3959-2018 Construction of Buildings in Bushfire-prone Areas* (Standards Australia, 2018), which requires a 100m radius around the site to be assessed for slope and vegetation. As depicted in Figure 11 there are varying conditions as follows:

- North: Grassland under an effective slope of flat.
- East: larger residential lots are located to the east on the opposite side of Old Peterborough Road and one lot contains shrubland vegetation under an effective slope of flat. The small areas of linear vegetation in the road reserve abutting the site are exempt under section 2.2.3.2 of AS3959. Even if they were considered in a BAL report, a suitable construction standard would still be maintained given that lots generally back onto this vegetation and the area would form part of the rear setback.
- South & West: Urban development which is a low-threat feature in accordance with AS3959.



Figure 11: 100m Assessment Area

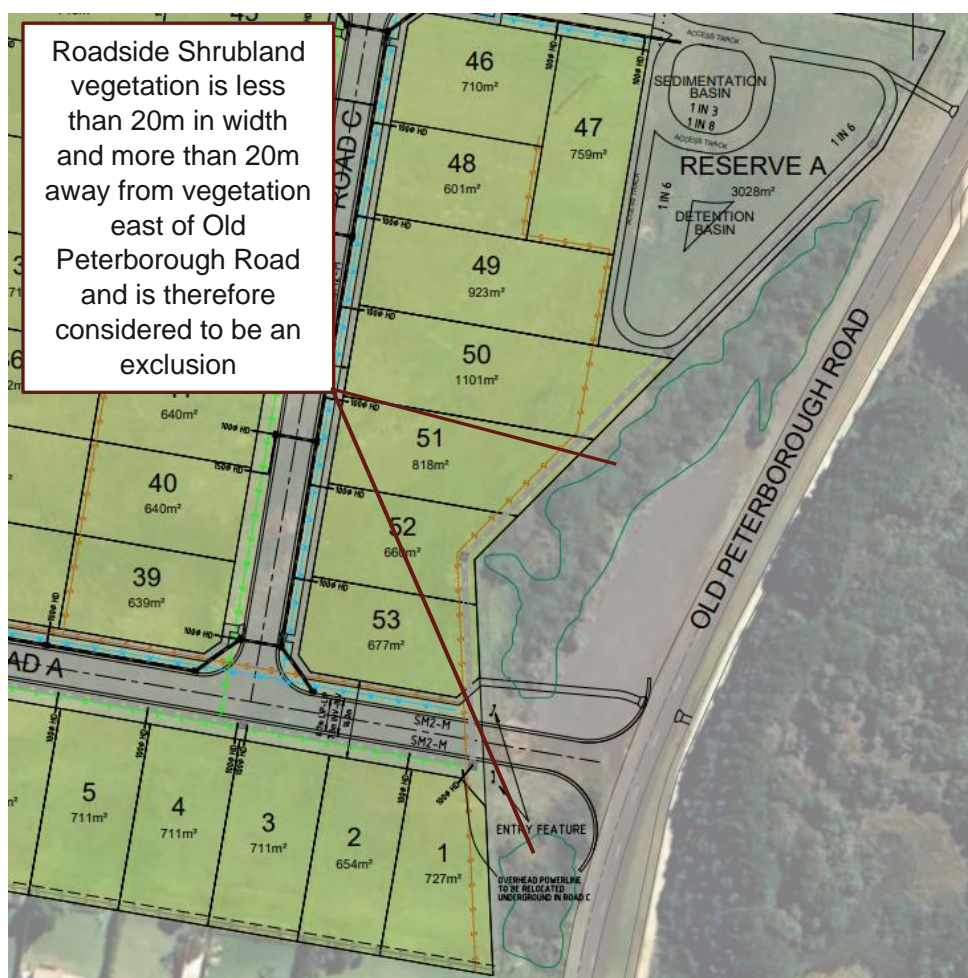


Figure 12: Roadside vegetation excluded

The site itself currently comprises of grassed areas that will be removed under the developed conditions. There are three reserves proposed as part of the subdivision and these are to be landscaped to low-threat conditions to ensure that no new hazards are introduced.

In accordance with AS3959 the following defendable space distances apply to the various vegetation conditions in the assessment area:

Direction in relation to site	Vegetation type	Slope	Separation distance BAL-12.5	Separation distance BAL-19	Separation distance BAL-29
North	Grassland	Flat	19m	13m	9m
East	Shrubland	Flat	19m	13m	9m
South & West	Low-threat	Not applicable			

Use of a perimeter road along the northern interface provides for suitable separation between the grassland hazard, as does the existing Old Peterborough Road to the east in relation to vegetation in this direction.

No restrictions or building envelopes are required in the absence of the BMO, with future dwellings subject to AS3959 under the building regulations.

The subdivision layout provides lots that can achieve suitable construction standards as outlined in the above table.

7 SHELTER FROM BUSHFIRE

Neighbourhood Safer Places (NSP) (also known as a 'Bushfire Place of Last Resort' (BPLR)) are designated places of last resort when all other bushfire plans have failed. They may provide some protection from direct flame and heat from a fire, but they do not guarantee safety.

A NSP is located at Monument Carpark only 1km south-east of the site and this is easily accessible via the road network.

8 BIODIVERSITY CONSIDERATIONS

Clause 13.02 seeks to ensure that new development can implement bushfire protection measures without unacceptable biodiversity impacts. Aside from a perimeter road and management of new council reserves, there are no proposed bushfire protection measures. As such, there are no known unacceptable biodiversity impacts.

9 ASSESSMENT AGAINST CLAUSE 13.02

The following sections provide an assessment against the relevant matters of *Clause 13.02* in light of the findings discussed above.

PROTECTION OF HUMAN LIFE

Population growth is to be directed to low risk locations and reduce the vulnerability of communities to bushfire risk. The land abuts existing developed urban areas and is zoned for residential purposes therefore the location is considered appropriate for population growth.

BUSHFIRE HAZARD

The site and landscape bushfire hazard has been identified above and concludes that the landscape risk is comparative to Broader Landscape Type 2 and the most likely impact is from the wider landscape is grassfire. Under prevailing wind conditions the largest threat to the site is from grassfire to the north-west and the proposed perimeter road provides suitable separation. Old Peterborough Roda provides separation from vegetation to the east and roadside vegetation abutting the site is considered to be excluded.

The requirements of AS3959 at building permit stage ensures that buildings will be designed in response to the localised threats.

SETTLEMENT PLANNING

The land is already zoned for residential purposes and this proposal seeks a permit under existing planning provisions and is not a strategic planning proposal (ie. settlement planning). The requirement for BAL-12.5 separation is therefore not considered to be a mandatory requirement, rather it needs to be demonstrated that the subdivision creates lots that can be developed to an acceptable construction standard. Construction standards, together with perimeter roads, provide for suitable bushfire protection and ensures that lots can be feasibly developed under AS3959.

Easy and convenient access is available to the BAL-LOW water bodies in the local area and the NSP is within proximity to the site.

The wider landscape (20km) presents an acceptable risk given that a convection fire would not impact the site given the absence of large expanses of high risk vegetation. It is reasonable to consider the subject land as an area where residential development is appropriate.

Development of this land will reduce risk to the existing urban areas by providing a perimeter road along the urban/farming interface.

BIODIVERSITY VALUES

This report is not a biodiversity assessment, however there are no proposed bushfire mitigation measures beyond the perimeter road and implementation of construction standards and as such biodiversity impacts are considered acceptable from the perspective of this policy.

BUSHFIRE PRONE AREA

This assessment has considered the requirements of the *Building Act, 1993* and all proposed residential allotments are capable of achieving BAL-12.5 setbacks, with construction standards to be determined at building permit stage.



Figure 13: Setbacks to vegetation

10 RECOMMENDATIONS

The following recommendations are made:

- Require detailed landscape plans and maintenance schedules for reserves as a condition of permit to ensure that landscaping will not increase fuel hazards on site;
- Require fencing to be of a non-combustible nature where possible.

11 CONCLUSION

Integrated Decision Making (71.02-3) requires planning and responsible authorities to prioritise the protection of human life over all other policy considerations in bushfire affected areas. Bushfire Planning (Clause 13.02) outlines the objective to be achieved and this seeks to strengthen the resilience of settlements and communities to bushfire risk based planning that priorities protection of human life.

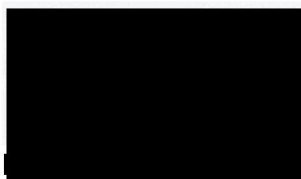
The landscape risk is moderate due to surrounding grassland hazards however credible shelter options (being the established urban areas) are available in close proximity to the land and provide for an important feature in the aim to protect life.

The site assessment demonstrates that the proposed allotments can achieve acceptable separation from bushfire hazards to enable feasible future development of proposed lots in accordance with the *Building Act, 1993*.

Bushfire mitigation requirements do not impact biodiversity beyond that to which the subdivision already impacts.

It is submitted that subdivision of this land prioritises protection of human life over all other policy considerations and there are no bushfire protection measures to be applied given that AS3959 provides an appropriate means of implementing construction standards at Building Permit Stage.

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