

March 23

Bushfire Management Statement Pathway 2 as in 53.02-4

A Development in a Bushfire Management Overlay

ADVERTISED

PROPERTY ADDRESS: 5 SEYMOUR STREET SEVILLE 3139

Date: 16 March 2023

Job N°: 2829

Report prepared for

Design 20



Prepared By

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1.0 Executive Summary

The property was visited on 16 March 2023 to undertake a bushfire hazard assessment.

The site is a lot comprising of areas of **grassland and trees** in **Seville**.

The parcel to be developed has a total area of approximately **1.02Ha**.

We are seeking development approval to **subdivide southern parcel only into 5 lots**.

On-site and surrounding area vegetation within the 150m assessment area for each lot is classified as **woodland, grassland & low threat**.

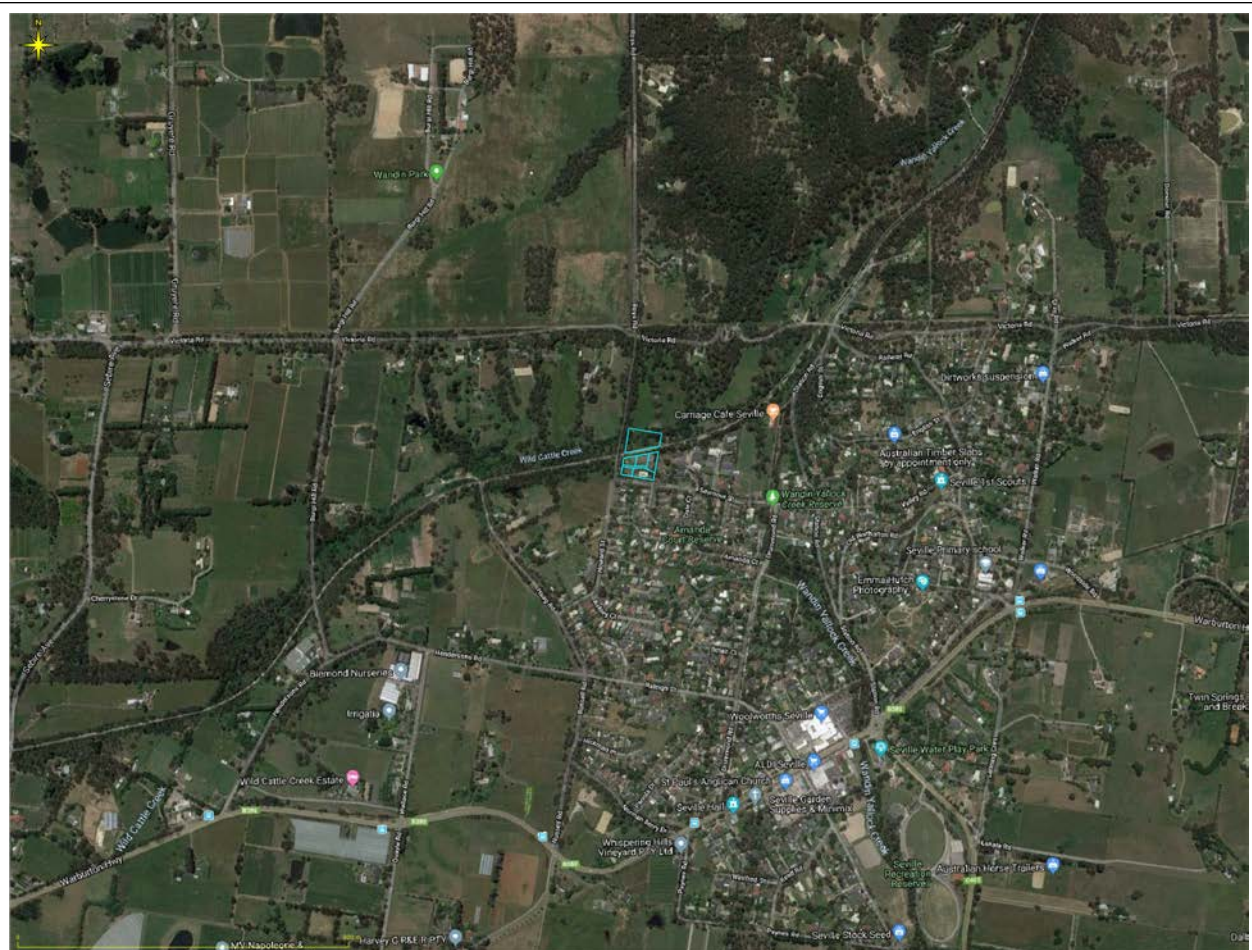
Classified vegetation **woodland** constructing with a **BAL29**, defensible space requirements for the building envelopes is **16m**. As in clause 53.02-5 Table 2, Column C.

The area close to the site has a bushfire history, and in the event of a bushfire, the impact to the dwelling will be from **ember attack**.

The nearest Neighbourhood Safe Place is in **Seville Recreation Reserve**.

For each Lots 1 & 2 5,000 & 10,000 litre for Lots 3 & 4 water tank will be required for firefighting purposes,

Access must meet BMO's access requirements (Appendix 4).



nearmaps/mapshare.maps.vic.gov.au **Image 1** Aerial view of site highlighted is the parcel to be developed

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2.0 Introduction

The proposal seeks development approval to subdivide the land known as **5 SEYMOUR STREET SEVILLE 3139**. The property comprises of two parcels as seen in *Image 1&2*. The southern parcel will be subdivided into five lots.

No changes are to be made to the structure of the existing dwelling in Lot5 therefore no construction requirements will be implemented. In the future if any structural changes are made to the existing dwelling construction should comply with a BAL29 and defensible space with Table 2 to clause 53.02-5 Column C.

Keystone Alliance Bushfire Assessments has been engaged by; **Design 20** to provide a Bushfire Hazard & Landscape Assessment accompanied with a Bushfire Management Statement in accordance with the Bushfire Management Overlay 44.06 and Clause 53.02-5 Bushfire Planning at which is to accompany the planning permit application lodged with **Yarra Ranges Shire**.

This assessment describes the subject site and surrounding area in relation to the risk associated with the Bushfire Attack Level (BAL), together with the relevant planning controls, namely, Australian Standard 3959-2009, "Construction of buildings in bushfire-prone areas."

The parcel to be developed has a rectangular wedge shape and an area of approximately **1,02Ha** it is located approximately 1 km north of Seville Shopping Centre via road in the semi-urban area of Seville. The property has towns water supply, domestic and potable water can also be stored in water tanks, it is provided with telecommunication services, and is connected to the sealed road network. Vehicular access to the land is via **Howard Street** *Image 1 & 2*

The purpose of the report is to assist in a decision of issuing a planning permit for the construction of the proposed development in a Bushfire Management Overlay.

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3.0 Site Description

3.1 Site shape, dimensions, size and planning controls

Local government:	YARRA RANGES
Lot and Plan Number:	Lot 1 TP884286
The shape of the site is:	Rectangular & Wedge
The dimensions of the site are:	Please refer to <i>Image 2</i> Site Dimensions
The site has a total area of:	Approximately 1.02Ha
The zoning of the site is:	GREEN WEDGE ZONE (GWZ) GREEN WEDGE ZONE - SCHEDULE 2 (GWZ2) NEIGHBOURHOOD RESIDENTIAL ZONE (NRZ) NEIGHBOURHOOD RESIDENTIAL ZONE - SCHEDULE 3 (NRZ3)
The overlays that apply to the site are: Effected:	Bushfire Management Overlay, DDO5, ESO1 & SLO1
Assessed by:	Paul Apostolos Oikonomidis

Site Dimensions



nearmap 2017/ mapshare.maps.vic.gov.au **Image 2** Property's dimensions

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4.0 Bushfire hazard site assessment

4.1 Hazard Assessment

The proposed development has been assessed under AS 3959 – 2009 “Construction of buildings in bushfire prone areas.” A vegetation hazard assessment was carried out within a 150m radius from each proposed building. Within this area our interest was directed on the type of vegetation surrounding the proposal, distance from the proposal and the effective slope it stood.

The bushfire attack level (BAL) is a means of measuring the severity of a building’s potential exposure to ember attack, radiant heat and direct flame contact, using increments of radiant heat expressed in kilowatts per meter squared. The BAL is also the basis for establishing the requirements for construction to improve protection of building elements from attack by bushfire.

The highest BAL determines the construction requirements for a habitable building. A reduction of one BAL level may be applied if facades of the building are shielded from the bushfire hazard, however for this site no shielding occurs. The BAL for this site has been calculated using a Forest Fire Danger Index (FFDI) of 100 and a Flame Temperature of 1090K. These parameters are in accordance with the risk parameters set in Clause 53.02.

The vegetation within the 150-metre assessment area was classified according to AS 3959:2018, Technical Guide: Planning Permit Application Bushfire Management Overlay (DELWP, 2017) and the Overall Fuel Hazard Assessment Guide (DSE, 2010).

The AS 3959:2018 approach uses a generalised description of vegetation based on the AUSLIG (Australian Natural Resources Atlas” No.7 Native Vegetation) classification system. According to this method, vegetation can be classified into seven categories. Each category indicates a fire behaviour and these categories or classifications are then used to determine bushfire intensity. Information gained from the Ecological Vegetation Classes (Figure 6) reinforces the vegetation classification chosen and provides an indication of connectivity within the greater landscape.

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Lot 1 assessment area within a 150m radius from the proposal



nearmap 2018 *Image 3 Assessment Area*

Lot 1

Vegetation	North	East	South	West
	Woodland	Low threat	Low threat	Woodland
Distance m	>33	N/A	N/A	>33
Effective Slope	0° upslope	N/A	N/A	0° upslope
BAL each side	29	Low	Low	29
Defendable space m	16	PB	PB	16

A vegetation hazard assessment was carried out within a 150m radius from the proposed development. Within this area our interest was directed on the type of vegetation surrounding the dwelling, the distance and the effective slope it stood.

An assessment of the site conditions has categorized this site as **BAL-29** fire risk and will be implemented only to any new works and to any structural changes to the existing building.

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Lot 2 assessment area within a 150m radius from the proposal



nearmap 2018 **Image 4** Assessment Area

Lot 2

Vegetation	North	East	South	West
	Woodland	Low threat	Low threat	Woodland
Distance m	>33	N/A	N/A	>33
Effective Slope	0° upslope	N/A	N/A	0° upslope
BAL each side	29	Low	Low	29
Defendable space m	16	PB	PB	16

A vegetation hazard assessment was carried out within a 150m radius from the proposed development. Within this area our interest was directed on the type of vegetation surrounding the dwelling, the distance and the effective slope it stood.
An assessment of the site conditions has categorized this site as **BAL-29** fire risk

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Lot 3 assessment area within a 150m radius from the proposal



nearmap 2018 **Image 4** Assessment Area

Lot 3

Vegetation	North	East	South	West
	Woodland	Low threat	Low threat	Woodland
Distance m	>33	N/A	N/A	>33
Effective Slope	0° upslope	N/A	N/A	0° upslope
BAL each side	29	Low	Low	29
Defendable space m	16	PB	PB	16

A vegetation hazard assessment was carried out within a 150m radius from the proposed development. Within this area our interest was directed on the type of vegetation surrounding the dwelling, the distance and the effective slope it stood.

An assessment of the site conditions has categorized this site as **BAL-29** fire risk

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Lot 4 assessment area within a 150m radius from the proposal



nearmap 2018 **Image 4** Assessment Area

Lot 4				
Vegetation	North	East	South	West
	Woodland	Low threat	Low threat	Woodland
Distance m	>33	N/A	N/A	>33
Effective Slope	0° upslope	N/A	N/A	0° upslope
BAL each side	29	Low	Low	29
Defendable space m	16	PB	PB	16
<p>A vegetation hazard assessment was carried out within a 150m radius from the proposed development. Within this area our interest was directed on the type of vegetation surrounding the dwelling, the distance and the effective slope it stood. An assessment of the site conditions has categorized this site as BAL-29 fire risk</p>				

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4.2 Vegetation

Vegetation on and around the site has been classified in accordance with the likely fire behaviour it may generate.

Low Threat Vegetation

Excluded vegetation and non-vegetated areas

Areas of low threat vegetation and non-vegetated areas have been excluded under one or more of the following AS 3959-2009 exclusion criteria (Standards Australia, 2009):

- i. Vegetation more than 150m from the site.
- ii. Non-vegetated areas, including waterways, roads, footpaths, buildings and rocky outcrops.
- iii. 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'.

Woodland

Heathland ecosystems are characterised by a dense layer of small-leaved shrubs, usually 1-2 m tall, over a ground layer of sedges, coarse lilies, rope-rushes, prostrate shrubs and herbs. In most places there are occasional small, short-trunked, spreading trees, to 15m tall, which may form a sparse canopy on deeper soils. The commonest tree species is *Eucalyptus viminalis* subsp. *pyroriana* (Coast Manna Gum) in the eastern part of the range, *Eucalyptus baxteri* (Brown Stringybark), *Eucalyptus arenacea* (Wimmera Scentbark) and *Eucalyptus willisii* (Shining Peppermint) in the west and south-east, and *Eucalyptus pauciflora* (Snow Gum) along the margins in the high country. Where the soils are relatively dry the dominant shrubs are usually tea-trees (*Leptospermum*) and stunted she-oaks (*Allocasuarina*); where the soils are waterlogged, paperbarks (*Melaleuca*) and large sedges (*Gahnia*, *Lepidoperma*) form dense thickets with occasional small trees such as *Eucalyptus cephalocarpa* (Mealy Stringybark) and *Eucalyptus conspicua* (Silver Swamp Stringybark). In the high country wet heathlands are dominated by a range of heaths (*Epacris*) and rope rushes (*Restionaceae*).



Figure 4 Surrounding Vegetation as in 2005 EVC's within a 500m radius from boundaries of proposal

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5.0 Bushfire Hazard Landscape Assessment

5.1 Location description

The proposed development at, is sited at approx. 1km north from Seville township centre. The site is on a north facing slope, with land descending to the north up to properties boundary and the Warburton Rail Trail, the property continues the other side ascending to a northern adjacent lot to a grassland property.

Within a 500m radius from southwest to north & north to east from the proposal's boundary there are large Lots with gardens, driveways, sheds and dwelling used as permanent residence. Within this area vegetations predominantly is of grassland with small patches of bushland characterized in the **2005 EVC: Riparian Scrub/Swampy Riparian Woodland Complex** and classified as "woodland" & as identified in Section 4.2 Vegetation. The land east to southwest, is a typical suburban area with small lots approx. 650m² all having houses with gardens a standard residential we cross in suburbia Melbourne. Due to the extent of vegetation **north north-northeast** of the proposal a potential fire run can exceed **1.5 km** in extreme weather conditions.

The main driveway access into the site is from **Howard Street**. This is a gravel, carriageway, linking to **Seville's** local CFA Fire Station located **at less than 1.0km** via road on **5 Link Road south** of the entrance driveway.

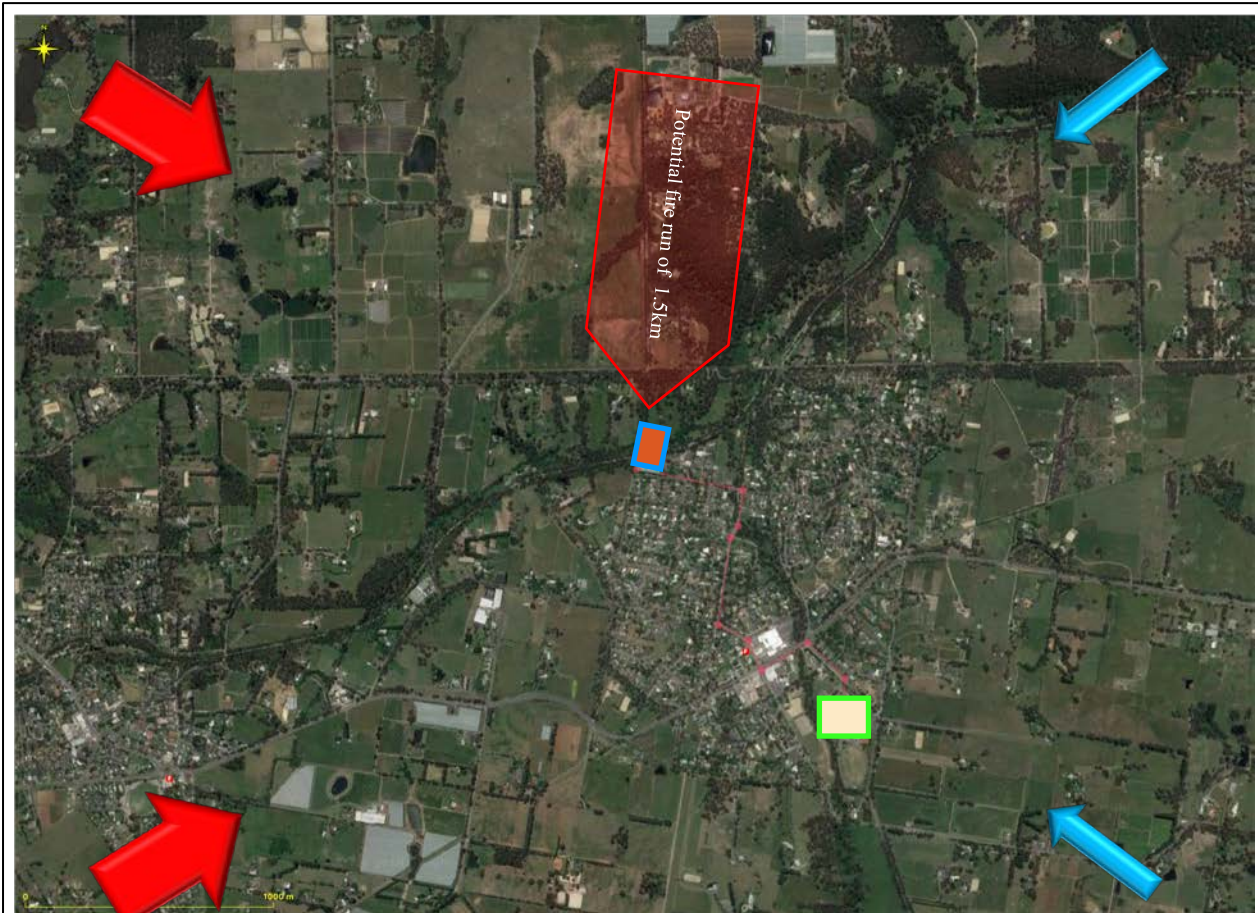
The Bushfire Planning Practice Note #65 outlines four Landscape Types. The local landscape character surrounding the property is most attributable to Landscape **Type 1**;

Table 1- Landscape risk.

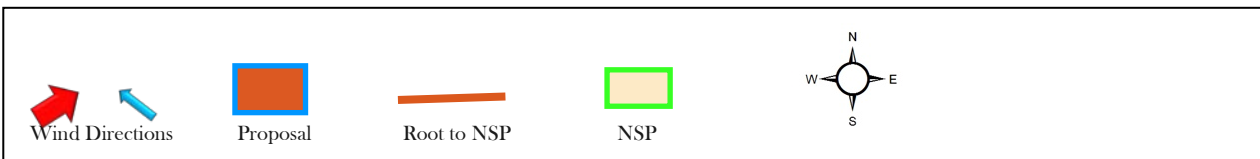
Broader Landscape Type 1	Broader Landscape Type 2	Broader Landscape Type 3	Broader Landscape Type 4
<ul style="list-style-type: none"> • There is little vegetation beyond 150m of the site (except grasslands and low-threat vegetation). • Extreme bushfire behaviour is not possible. • The type and extent of vegetation is unlikely to result in neighbourhood- scale destruction of property. • Immediate access is available to a place that provides shelter from bushfire. 	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • 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 approach from more than one aspect. • The site is in an area that is not managed in a minimum fuel condition. • Access to an appropriate place that provides shelter from bushfire is not certain. 	<ul style="list-style-type: none"> • The broader landscape presents an extreme risk. • Evacuation options are limited or not available.

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Location & Landscape Assessment



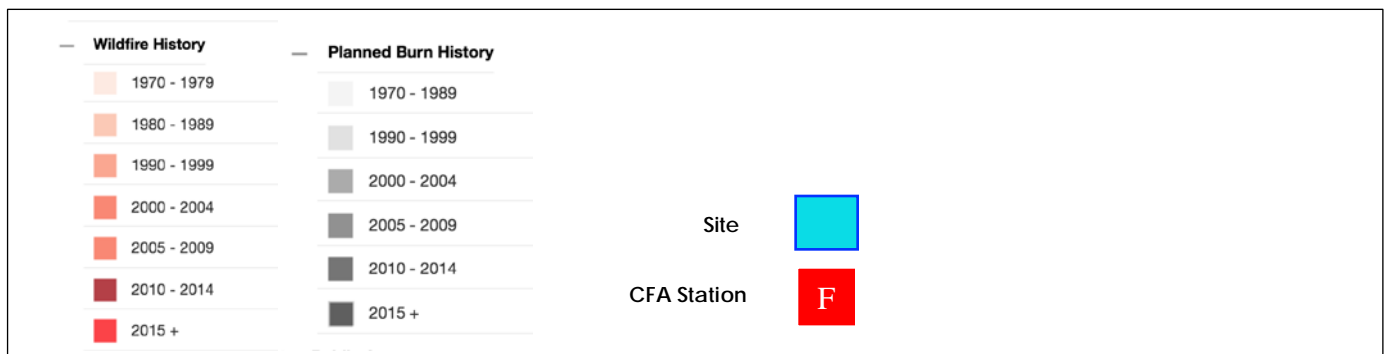
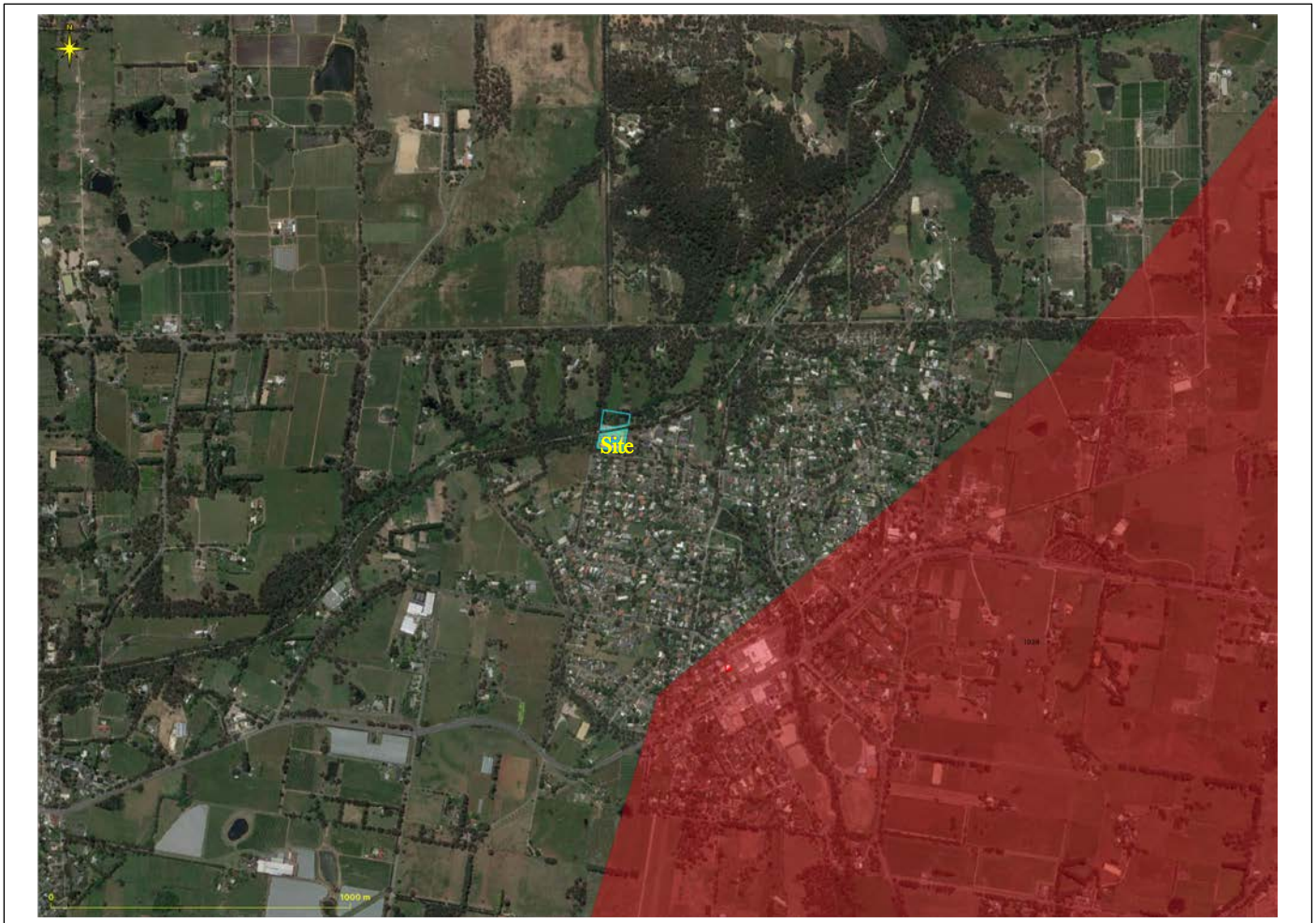
nearmaps/mapshare.maps.vic.gov.au Map 1



Yarra Ranges contains several designated Neighbourhood Safe Place (NSP). The **Seville Recreation Reserve NSP** at the **20-28 Monbulk-Seville Road Seville** is the closest NSP at approximately **1.8km** via road from the subject site, as you can see on *Map1*.

5.2 Bushfire History

Seville areas are prone to bushfires, the area has been impacted by a bushfire in 1939, bushfires have been recorded in the wider area but not in the immediate area surrounding the subject site. Controlled burns haven't taken place and no wildfire history has been recorded in the area surrounding the proposal as you can see on Map 2. The wider area has a fire history, and the publicly available database indicates that the site itself hasn't experienced bushfire.



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5.3 Bushfire scenario

The most likely bushfire scenarios are those typically associated with the direction of the wind on severe or higher, fire danger days i.e. approach of bushfire from the north, northwest, west or southwest.

The development site has the potential to be impacted upon by a moderate, landscape scale fire approaching from the north. A fire from these directions would approach through the forested areas of driven by hot, dry northerly winds commonly experienced during summer.

Whilst the northern vegetated areas may intemperately increase the speed and intensity of the fire before it impacted the site, under the BMO conditions of low humidity, elevated temperatures and fierce winds, the development could be subjected to significant ember attack and possibly radiant heat. The cleared areas around the development are a considerable asset in this scenario and substantially reduce the threat of radiant heat and flame impacts.

The areas of bushland at a distance to the north of the site are a potential hazard to the development and could result in a high intensity fire approaching from the north north-northeast, generating significant ember attack and radiant heat.

Whilst the northern eucalypts, can cause substantial amounts of embers and burning material to be blown long distances, the development site is sufficiently setback from the bushland such that it will be able to provide appropriate defensible space, commensurate with the risk and proposed construction standard of the building.

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6.0 Bushfire Management Statement

6.1 Landscape, siting and design objectives

- *Development is appropriate having regard to the nature of the bushfire risk arising from the surrounding landscape.*
- *Development is sited to minimise the risk from bushfire.*
- *Development is sited to provide safe access for vehicles, including emergency vehicles. Building design minimises vulnerability to bushfire attack.*

Compliance with these objectives at Clause 53.02-4.1 is proposed via the following Approved measures.

6.1.1 Approved measure 2.1 Landscape

'The bushfire risk to the development from the landscape beyond the site can be mitigated to an acceptable level'.

As identified in Section 5 the landscape is not one of extreme bushfire risk. Whilst a high intensity, landscape scale bushfire could impact the site, the speed and intensity of a bushfire approaching from the north, will be somewhat moderated by the pattern of development in these directions, and the mosaic of areas of low threat and/or non-vegetated. To the north there is a contiguous area of bushland and the possibility of a fire run exceeding 1.8 Km is feasible.

It is proposed that the risk can be mitigated to an acceptable level by implementing bushfire protection measures in compliance with the BMO requirements including BAL construction standard, commensurate defendable space, provision of a water supply for firefighting, ensuring good access and egress are available for occupants and emergency services and, most importantly, management planning in the form of a Bushfire Emergency Management Plan.

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6.1.2 Approved measure 2.2 Siting

A building is sited to ensure the site best achieves the following:

- *The maximum separation distance between the building and the bushfire hazard.*
- *The building is in close proximity to a public road.*
- *Access can be provided to the building for emergency service vehicles'.*

The proposed development is sited to have maximum distance from hazard vegetation from all aspects. Sufficiently distant to achieve **BAL-29** defendable space.

The buildings in all Lots are sufficiently distant from hazardous vegetation such that 'Table 2' to Clause 53.02-5 setbacks are achieved (Defendable Space Map 3).

The proposed development is close to a main public road enabling access and egress in compliance with BMO requirements for emergency vehicles and occupants/visitors.

6.1.3 Approved measure 2.3 Design

A building is designed to be responsive to the landscape risk and reduce the impact of bushfire on the building.

All BAL standards above BAL-Low are deemed to satisfy the building code requirement that buildings be designed and constructed to reduce the risk of ignition from a bushfire, appropriate to the:

- (a) *'potential for ignition caused by embers, radiant heat or flame generated by a bushfire; and*
- (b) *intensity of the bushfire attack on the building' (Building Code of Australia 2016).*

The design of the buildings should aim to facilitate wind flow over the building and easy maintenance (e.g. cleaning of gutters) and avoid complex roof lines which may allow build-up of debris (e.g. accumulation of leaves and bark) and trap embers. Walls and eaves should similarly avoid or minimise reentrant corners and other features that may trap debris and embers.

External walls cladding will be of non-combustible material, tiled roof or metal sheeting, all external glazing will use toughened glass greater than 4mm thick responding to the bushfire attack level requirements and all gaps and cracks will be sealed to avoid ember penetration.

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6.2 Subdivision objectives

To provide lots that are capable of being developed in accordance with the objectives of Clause 53.02.

To specify at the subdivision stage bushfire protection measures to develop a lot with a single dwelling on land zoned for residential or rural residential purposes.

6.2.1 Defendable space

Approved measures

AM 5.1

An application to subdivide land, other than where AM 5.2 applies, demonstrates that each proposed lot is capable of meeting:

- *The defendable space in accordance with Table 2 Columns A, B or C and Table 6 to Clause 53.02-5.*
- *The approved measures in Clause 53.02-4.1 and Clause 53.02-4.3.*

Bushfire hazard assessment classified vegetation is '**woodland**' defendable space requirement for:

- **Lot 1** is 16m constructed to a **BAL 29** Fig DS 1,
- **Lot 2** is 16m constructed to a **BAL 29** Fig DS 2.
- **Lot 3** is 16m constructed to a **BAL 29** Fig DS 3
- **Lot 3** is 16m constructed to a **BAL 29** Fig DS 4
- **Lot 5** is 16m constructed to a **BAL 29** only, to any new works or to any structural changes to the existing dwelling.

6.2.2 Subdivision Proposal

AM 5.2

An application to subdivide land zoned for residential or rural residential purposes must be accompanied by a plan that shows:

- *Each lot satisfies the approved measure in AM 2.1.*
- *A building envelope for a single dwelling on each lot that complies with AM 2.2 and provides defendable space in accordance with:*
 - *Columns A or B of Table 2 to Clause 53.02-5 for a subdivision that creates 10 or more lots; or*
 - *Columns A, B or C of Table 2 to Clause 53.02-5 for a subdivision that creates less than 10 lots.*

The bushfire attack level that corresponds to the defendable space provided in accordance with Table 2 to Clause 53.02-5 must be noted on the building envelope.

- *Defendable space wholly contained within the boundaries of the proposed subdivision.*

Vegetation management will be provided within the subdivisions boundary as shown below Figures DS 1 to 4 for each lot. Defendable Space is in accordance to Clause 53.02-5 Table 2

- *Defendable space may be shared between lots within the subdivision. Defendable space for a lot may utilise communal areas, such as roads, where that land can meet the requirements for defendable space.*

Vegetation management incorporates the rail trail, roads and adjacent residential Lot where vegetation is maintained to low fuel levels as shown below in Figures 1 to 4. Defendable Space is in accordance to Clause 53.02-5 Table 2

- *Vegetation management requirements in accordance with Table 6 to implement and maintain the defendable space required under this approved measure.*

- *Water supply and vehicle access that complies with AM 4.1.*

Achieved via AM4.1 please refer to Section 6.3 of this statement.

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Defendable space Lot 1

For classified vegetation “woodland” on 0° upslope for a habitable building, the required defendable space is 16m or to the property’s boundary from the edges of the building as shown in Fig DS1. Dwelling will be constructed with a BAL-29



Figure DS1 Lot 1 Defendable Space is within the subdivision’s boundary and on public road.

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Defendable space Lot 2

For classified vegetation “woodland” on 0° upslope for a habitable building, the required defendable space is 16m or to the property’s boundary from the edges of the building as shown in Fig DS 2. Dwelling will be constructed with a BAL-29.



Figure DS2 Lot 2 Defendable Space is within the subdivision’s boundary and on public road.

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Defendable space Lot 3

For classified vegetation “woodland” on 0° upslope for a habitable building, the required defendable space is 16m or to the property’s boundary from the edges of the building as shown in Fig DS 3. Dwelling will be constructed with a BAL-29.

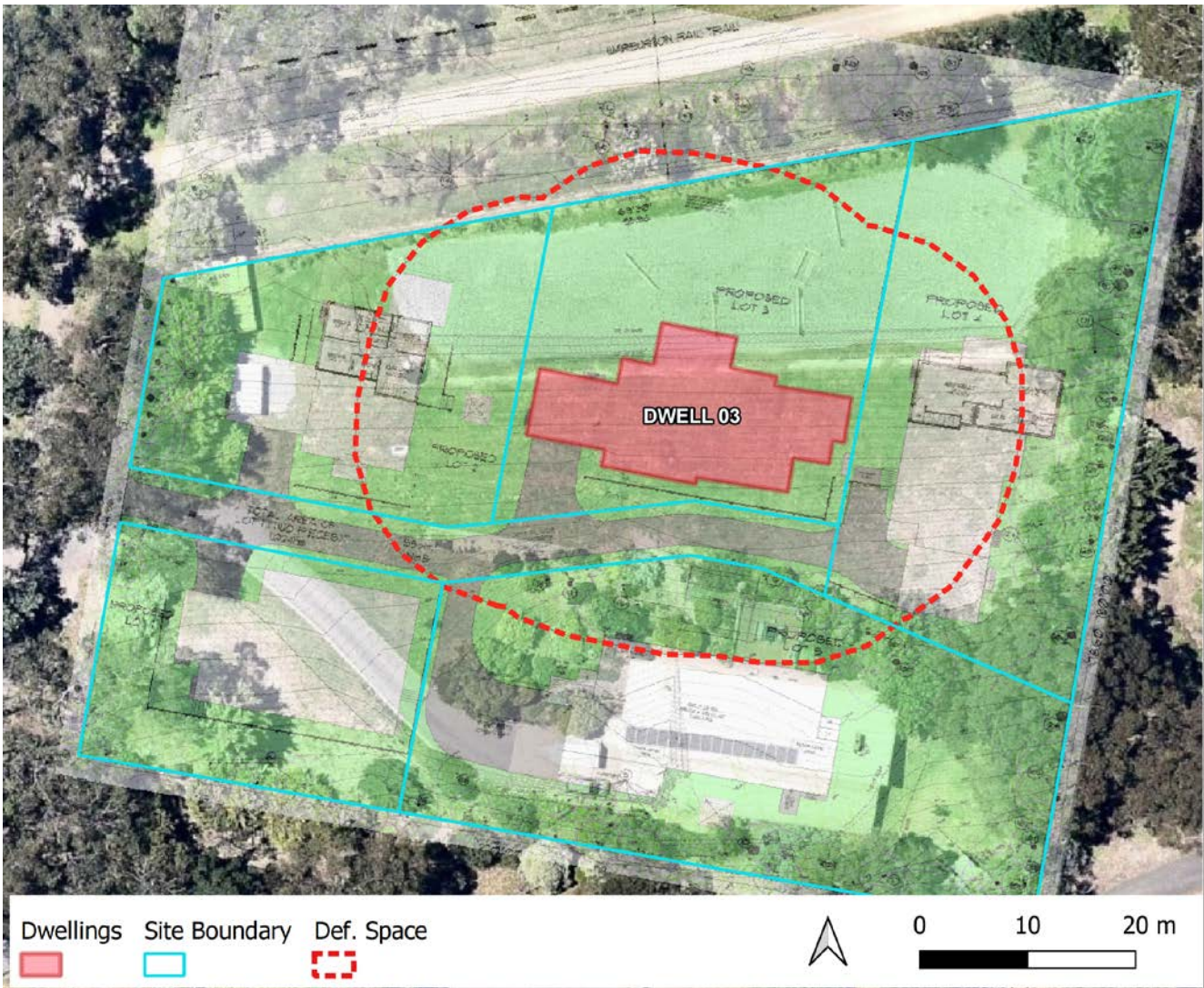


Figure DS3 Lot 3 Defendable Space is within the subdivision’s boundary and on public road.

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Defendable space Lot 4

For classified vegetation “woodland” on 0° upslope for a habitable building, the required defendable space is 33m or to the property’s boundary from the edges of the building as shown in Fig DS 4. Dwelling will be constructed with a BAL-29.



Dwellings Site Boundary Def. Space



0 10 20 m



Figure DS4 Lot 4 Defendable Space is within the subdivision’s boundary and on public road.

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AM 5.3

An application to subdivide land to create 10 or more lots provides a perimeter road adjoining the hazardous vegetation to support firefighting.

N/A

AM 5.4

A subdivision manages the bushfire risk to future development from existing or proposed landscaping, public open space and communal areas.

The existing lot has an area of **1.65Ha** of land. The subdivision proposes **five** lots with an area for each lot; **Lot1** 657.8m², **Lot2** 827.3m², **Lot3**1009.0m², **Lot4** 1197.9m², **Lot5**1486.4m²

The proposed subdivision will create **five** lots; one with an existing dwelling in Lot5 with no new works or structural changes to the existing building.

Vegetation of the site is to be regularly maintained, in perpetuity.

The proposed subdivision will increase the current bushfire protection measures in place, thus mitigating overall risks.

If the status quo is maintained, no additional bushfire protection measures are currently enforceable under the Planning Scheme.

The subdivision approval will require implementation of Static Water Supply, dedicated for firefighting purposes. Vegetation management will be implemented; the subject land will be maintained in accordance with defendable space requirements.

Therefore, subdividing the lot increases the standards and provisions for bushfire protection.

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6.3 Water supply and access objectives

'A static water supply is provided to assist in protecting the property.

Vehicle access is designed and constructed to enhance safety in the event of a bushfire'.

These objectives can be achieved via Approved measures 4.1 (AM 4.1).

AM 4.1

A building used for a dwelling (including an extension or alteration to a dwelling), a dependant person's unit, industry, office or retail premises is provided with:

- *A static water supply for firefighting and property protection purposes specified in Table 4 to Clause 53.02-5*

The water supply may be in the same tank as other water supplies if a separate outlet is reserved for firefighting water supplies.

It is proposed that a minimum total capacity of 10,000-litres be provided as a dedicated static water supply for firefighting (detail provided as Appendix 3).

The BMS proposes:

-Non-Combustible water tank.

-For **Lots 1 & 2**, 5,000litres, **Lots 3 & 4** 10,000 litres static water supply, dedicated solely to firefighting purposes.

-Fittings to comply with CFA requirements. (Appendix4)

- *Vehicle access that is designed and constructed as specified in Table 5 to Clause 53.02-5'.*

Access

All emergency access roads within the subdivision will provide access in accordance with the vehicle access design and construction specifications in Table 5 to Clause 53.02-5 (detail provided as Appendix 4).

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7.0 Overall Conclusion

The proposed development has been assessed under AS 3959 – 2009 “Construction of buildings in bushfire-prone areas”. An assessment of the site conditions and adjoining property has categorised this site as “**BAL – 29**” fire risk, with Sections 3 & 5 utilised for the building construction under AS3959 and is subject to the recommendations outlined above.

The proposed development has been sited and designed to avoid on and off-site constraints.

AS3959 2009’ Construction of buildings in a bushfire prone area’ describes **risk category for:**

- BAL – 12.5 as: “Ember Attack”
- BAL – 19 as: “Increasing levels of Ember Attack and burning debris ignited by wind borne embers with increasing heat flux between 12.5-19KW”
- **BAL – 29 as: “Increasing levels of Ember Attack and burning debris ignited by wind borne embers with increasing heat flux between 19-29KW”**
- BAL – 40 as: “Increasing levels of Ember Attack and burning debris ignited by wind borne embers with increasing heat flux with the increased likelihood of exposure to flames.
- BAL – FZ as: Direct exposure to flames from fire front in addition to heat flux and ember attack.

The final categorization of this site is subject to the relevant fire authority (CFA) review and approval.

Overall, the proposed development meets the requirements of the BMO and Clause 53.02 – Bushfire Protection: Planning requirements.

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Appendix 1: Photos



Photo 1 North Grassland adjacent LOT



Photo 2 Eastern residential LOT maintained vegetation



Photo 3 Southern aspect Seymour & Howard Street residential area low threat veg.



Photo 4 Western field with grass at more than 30m with the road in between acting as a Buffer

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Photo 5 North-western field



Photo6 1 Western aspect Warburton Rail Trail & Howard St crossing vegetation



Photo 7 Site as seen from the Warburton Rail Trail



Photo 8 Seymour Rd across the road of Lot 1 is a fire Plug

Appendix 2: BMO vegetation management standards as in Clause 53.02-5

Table 6 Vegetation management requirement

Vegetation management requirement

Defendable space is provided and is 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 3 metres 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 square 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.

Appendix 3: BMO static water supply requirements

Table 4 from Clause 53.02-5

Table 4 Water supply

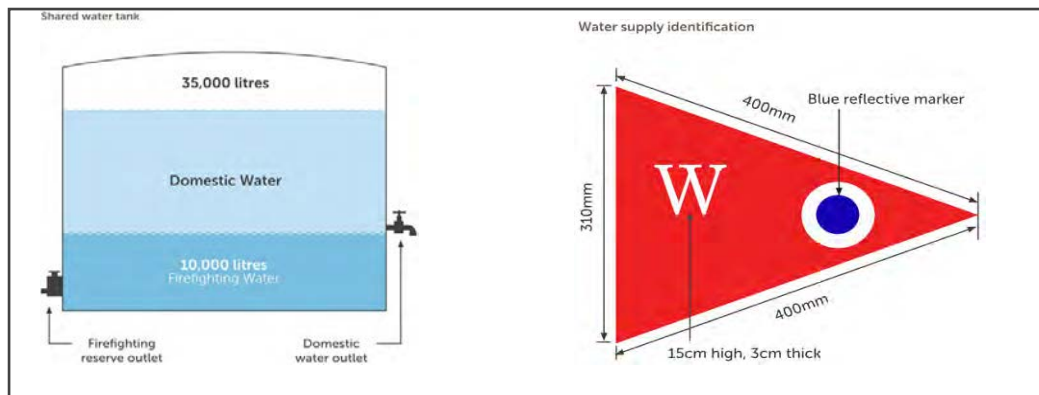
Lot sizes (square meters)	Hydrant available	Capacity (litres)	Fire authority fittings and access required
Less than 500	Not applicable	2,500	No
500-1,000	Yes	5,000	No
500-1,000	No	10,000	Yes
1,001 and above	Not applicable	10,000	Yes

Note 1: A hydrant is available if it is located within 120 metres of the rear of the building

Note 2: Fittings must be in accordance with the published requirements of the relevant fire authority.

Water tank requirements

'The water supply should be stored in an above ground water tank constructed of concrete, steel or corrugated iron. The water supply should be identified. The water supply may be provided in the same water tank as other water supplies provided they are separated with different outlets'.



CFA Fittings (CFA, 2014b)

'If specified within Table 4 to Clause 53.02-5 (if fire brigade access to your water supply is required), CFA's standard BMO permit conditions require the pipe work, fittings and tank outlet to be a minimum size of 64 mm.

65 mm BSP (British Standard Pipe) is the most common size available. A 65mm fitting is equivalent to the old 2 1/2 inch. A 65 mm BSP (2 1/2 inch) fitting exceeds CFA's requirements and will therefore comply with CFA's standard permit conditions for the BMO.

Diagram 1 below shows some common tank fittings available at most plumbing suppliers which meet the connection requirements. It includes a 65mm tank outlet, two 65 mm ball or gate valves with a 65mm male to 64 mm CFA 3 threads per inch male coupling. This is a special fitting which allows the CFA fire truck to connect to the water supply. An additional ball or gate valve will provide access to the water supply for the resident of the dwelling'

March 23

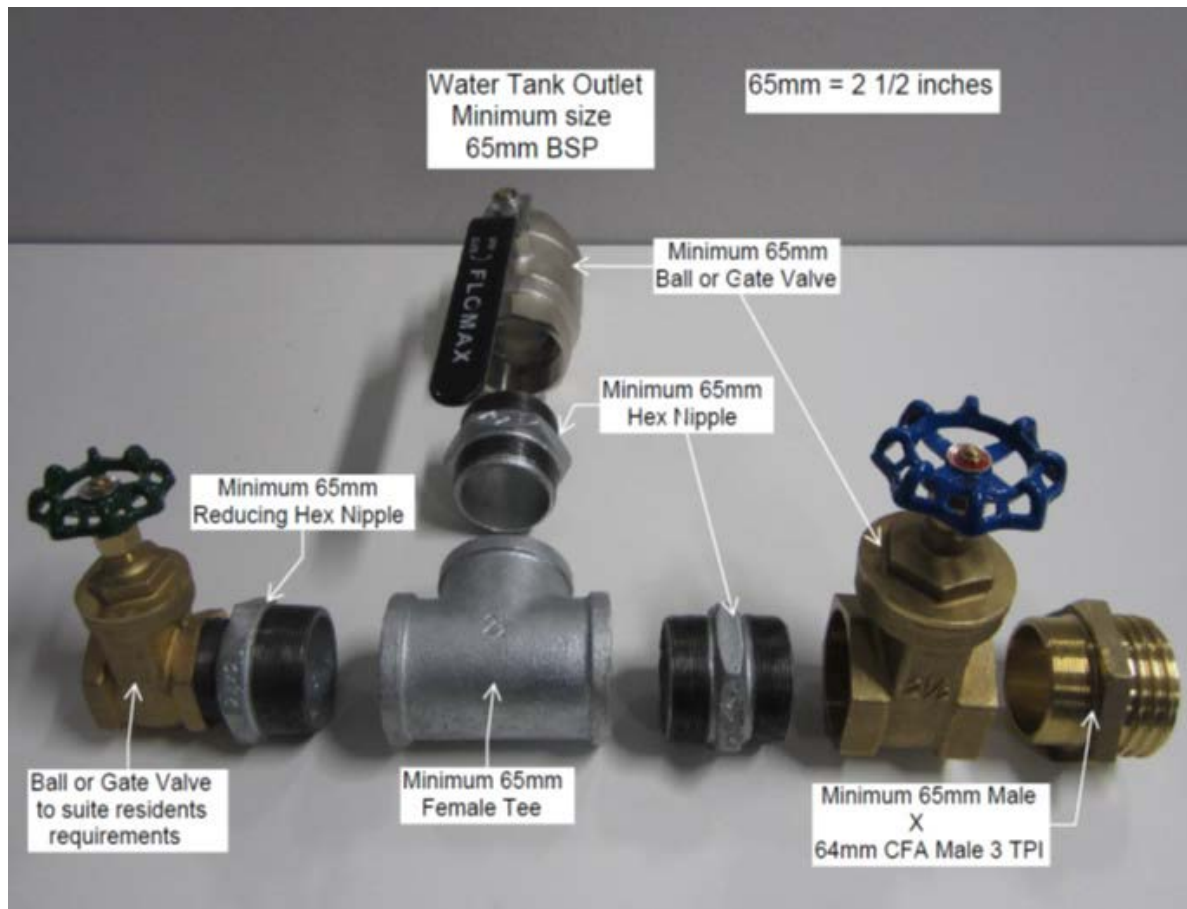


Diagram 1 CFA Standard permit conditions for water supply

Conditions required for all applications

'Show [xx litres] of effective water supply for firefighting purposes which meets the following requirements:

- Is stored in an above ground water tank constructed of concrete or metal.
- All fixed above-ground water pipes and fittings required for firefighting purposes must be made of corrosive resistant metal'.
- Include a separate outlet for occupant use.

Additional conditions to apply if a 10,000-litre water tank is used and access is required

The water supply must also –

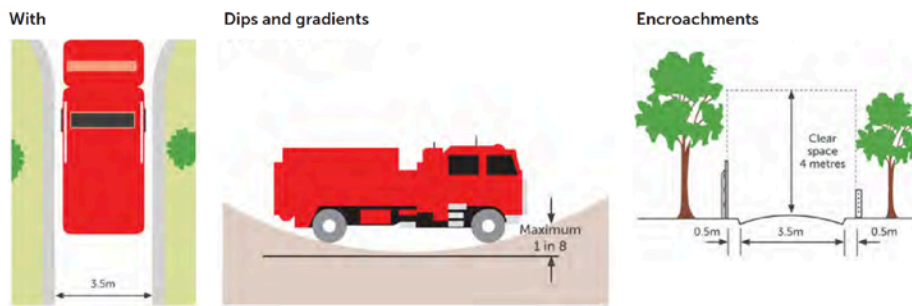
- Be readily identifiable from the building or appropriate identification signage to the satisfaction of the relevant fire authority.
- Be located within 60 metres of the outer edge of the approved building.
- The outlet/s of the water tank must be within 4 metres of the access way and unobstructed.
- Incorporate a separate ball or gate valve (British Standard Pipe (BSP 65millimetre) and coupling (64-millimetre CFA 3 thread per inch male fitting).
- Any pipework and fittings must be a minimum of 65 millimetres (excluding the CFA coupling)

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Appendix 4: BMO access requirements

Where the length of access is greater than 30 metres the following design and construction requirements apply:

- Curves must have a minimum inner radius of 10 metres.
- The average grade must be no more than 1 in 7 (14.4%) (8.1°) with a maximum of no more than 1 in 5 (20%) (11.3°) for no more than 50 metres.
- Dips must have no more than a 1 in 8 (12.5%) (7.1°) entry and exit angle.
- A load limit of at least 15 tonnes and be of all-weather construction.
- Provide a minimum trafficable width of 3.5 metres.
- Be clear of encroachments for at least 0.5 metres on each side and at least 4 metres vertically.
- A cleared area of 0.5 metres is required to allow for the opening of vehicle doors along driveways.



Practice Note 65 | Preparing and Assessing a Planning Application Under the Bushfire Provisions in Planning Schemes

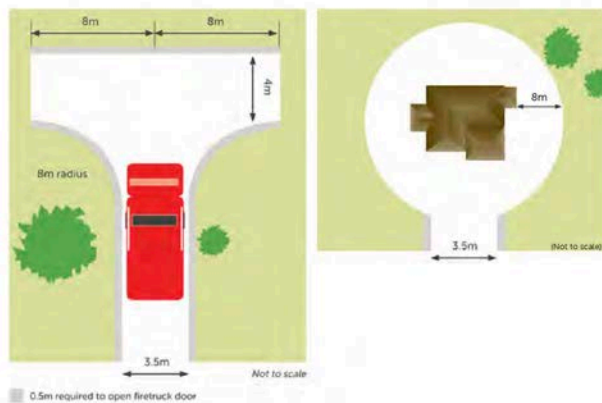
Access between 100 metres to 200 metres in length

In addition to the above:

A turning area for fire fighting vehicles must be provided close to the building by one of the following:

- a turning circle with a minimum radius of 8 metres

- a driveway encircling the dwelling
- other vehicle turning heads such as a T or Y head which meet the specification of Austroad Design for an 8.8 metre service vehicle.



Access greater than 200 metres in length

In addition to the above, passing bays are required at least every 200 metres that are:

- a minimum of 20 metres long
- with a minimum trafficable width of 6 metres.

