

Brears Road, Yarrowonga

Bushfire Planning Report

**Prepared for Bressan Parks Land Pty
Ltd ATF Bressan Parks Land Trust**

February 2024
Report No. 23166.02 (1.2)



**Nature
Advisory**

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1. Executive summary

Site Details	
Municipality:	Moira Shire
Subject Site:	The following properties in Yarrawonga: <ul style="list-style-type: none"> ▪ 10 Brears Road; ▪ 22 Brears Road; ▪ 38 Brears Road; ▪ 4 & 5 Jacqueline Court; and ▪ A small area within the eastern corner of 52 Brears Road.
Site Area:	11.56 hectares
Zoning:	Low Density Residential Zone (LDRZ) across the majority of the study area, with a small area of Rural Living Zone (RLZ) in the north.
Overlays:	Bushfire Management Overlay (BMO) – partially covers the site's northern border. Floodway Overlay (RFO) – covers the northeast of the site.
Existing Buildings and Works:	Low density residential dwellings in the south of the site and a holiday park in the centre.
Summary of Proposal	
Development Plan:	Development of a residential village
Construction Standard:	BAL-12.5
Defendable Space:	None required from the dwellings provided appropriate mitigation measures are in place such as the installation of a bushfire resistant shielding wall along the eastern boundary (AltM 3.3). 57 m of defendable space to be provided from the Club House to the north-east.
Water Supply requirements:	Reticulated water supply and hydrants (Appendix 3). All dwellings partially covered by the BMO must also provide 5000L of static water supply for personal use only (no fire authority fittings required). Club house requires 10,000L of static water supply for fire fighting purposes (with access and fire authority fittings required).

Urbis engaged Nature Advisory Pty Ltd to prepare this Bushfire Planning Report for a proposed residential village development of a 11.56-hectare area of land on the eastern side of Brears Road in Yarrawonga. The site is zoned Low Density Residential Zone (LDRZ) and Rural Living Zone (RLZ) in the Moira Planning Scheme.

The northern edge of the site is covered by a Bushfire Management Overlay (BMO), which extends approximately 90 metres into the property (Figure 3). This overlay identifies areas considered to be at high-risk from bushfire.

This report demonstrates of how the application can meets the requirements of Clause 13.02 *Bushfire* and will be required to respond to the obligations under Clause 44.06 *Bushfire Management Overlay* and the associated Clause 53.02 *Bushfire Planning* of the Victorian Planning Scheme should the proposal include building envelopes within the BMO. It includes the following components:

- A *bushfire hazard site assessment*, that describes bushfire hazards within 150 metres of the proposed development. The description of the hazards has been prepared in accordance with the *Australian Standards AS 3959:2018, Construction of buildings in bushfire prone areas* (Standards Australia 2018);
- A *bushfire hazard landscape assessment*, including a plan that describes the bushfire hazards in the general locality more than 150 metres from the site;
- A *Bushfire Management Statement (BMS)*, which describes how the proposed development responds to the requirements of Clause 53.02-3; and
- A *Bushfire Management Plan*.

During the site assessment, classified vegetation in the form of grassland, woodland and forest was recorded. Grassland covered the majority of the site, with areas of woodland in the far south of the site and forest in the north of the site. Grassland was present in the broader study area in all directions and a large area of forest was present to the north. Small patches of woodland were recorded to the south, east and west of the study area. Slope was recorded under each of these areas of classified vegetation.

The site is situated in broader landscape type Two as defined in the Bushfire Management Overlay technical guide (DELWP 2017) and an assessment of landscape hazards identified the following:

- Vegetation beyond 150-metres of the site may result in neighbourhood-scale destruction. This is particularly relevant to Yarrawonga Regional Park and interfacing vegetation, occurring to the north of the site.
- Bushfire can in general, only approach from one aspect and the site is located in a township area managed in a minimum fuel condition. Bushfire is likely to only approach the site from the Yarrawonga Regional Park in the north as surrounding land is predominantly grassland and low-threat.
- Access is readily available to areas of bushfire shelter. This is supported by egress via the Murray Valley Highway. Egress to Yarrawonga represents the safest source of bushfire shelter in the surrounding landscape.

Based on the classified vegetation recorded in the study area and the implementation of mitigation measures set out in this report, the proposed development layout has the ability to be constructed to Bushfire Attack Level (BAL) rating of BAL-12.5.

The majority of hazards identified within the site will be removed by the proposed development and therefore do not limit the ability for the proposal to comply with the required separation distances. However, these hazards will still pose an interim bushfire risk to adjacent stages undergoing construction.

During the development, separation will be required around each stage, as the Grassland within the site will pose an interim bushfire threat. While in the construction phase, Grassland *within* the site must be slashed and maintained in a low-threat state (i.e., slashed to a minimum height of <10 centimetres) within 22 metres of completed stages and those undergoing construction. This fire break must be maintained in a low-threat state up until the point that construction is complete and the threats within the site have consequently been eliminated. It is recommended that the woodland vegetation within the south of the site is developed first so this area does not pose a more significant threat during construction.

The bushfire hazards which have influenced the development design and minimum setback distances is forest to the north (Zone 6) and grassland to the east (Zone 10). The club house requires defensible space to be maintained at a distance of 57 metres to the north-east. Given that the wetland and surrounds will be revegetated, the extent of the forest hazard may expand. However, any vegetation within 57 metres must be maintained to defensible space standards. An alternative measure has been proposed along the interface of the development site and the grassland hazard (Zone 10), whereby the construction of a bushfire resistant shielding wall is proposed to be constructed (see Table 3 for details).

Clause 53.02 also requires that the following are provided, as outlined in this report:

- Reticulated water supply at a maximum distance between a hydrant and the rear of the building envelope must be 120 metres and hydrants must be no more than 200 metres apart (see Appendix 3);
- Additional static water supply of 5000L dedicated for personal firefighting purposes only (no fire authority fittings required) for all dwellings subject to the Bushfire Management Overlay;
- Static water supply of 10,000L dedicated for fire authority use (fittings and access required) for the Club House, and
- Vehicle access that is designed and constructed to minimum requirements (see Appendix 4).

This report was prepared by a team from Nature Advisory comprising Tessa Doherty (Botanist), Emma Wagner (GIS Analyst) and Chris Armstrong (Senior Botanist & Project Manager).

2. Sources of information and policy context

2.1. Existing information

The reports, planning scheme and development plans relating to the study area listed below were reviewed.

- *VicPlan* (DEECA 2023a);
- *Victoria Planning Provisions* (DEECA 2023b);
- *Regional Bushfire Planning Assessment – Hume Region* (DPCD 2012); and
- *Planning Permit Applications, Bushfire Management Overlay – Technical Guide* (DELWP 2017).

2.2. Definitions

2.2.1. Site and study area

The term ‘site’ is used herein to refer to the land proposed for development at Brears Road, Yarrawonga. The term ‘study area’ refers to area up to 150 metres from the site (see Figure 1).

2.2.2. Classified vegetation

For the purposes of a Bushfire Attack Level (BAL) assessment, areas of vegetation considered to pose a bushfire threat are classified according to the vegetation classes defined in Table 2.3 of AS 3959:2018. These hazards are grouped as either:

- Forest;
- Woodland;
- Shrubland;
- Scrub;
- Mallee/Mulga;
- Rainforest; or
- Grassland.

Non-vegetated areas and those considered ‘low-threat’, as defined in Section 2.2.3.2 of AS 3959:2018, are excluded from consideration as potential bushfire hazards and therefore do not influence BAL determination.

2.3. Field methodology

The field assessment was conducted on the 26th of July 2023. During this assessment, the site was inspected on foot and the surrounding study area observed from the site and surrounding roads.

Sites in the study area found to contain classified vegetation were mapped through a combination of aerial photograph interpretation and ground-truthing with ArcGIS Collector.

2.4. Precautionary approach

Wherever appropriate, a precautionary approach has been adopted in the discussion of implications. That is, where insufficient evidence is available on the predicted behaviour of fire in a wildfire event, it is assumed both that the most severe fire behaviour could take place and that unmanaged immature vegetation could reach mature heights. The implications under legislation and policy are considered accordingly.

3. Bushfire hazard assessment

3.1. Bushfire hazard site assessment

3.1.1. Site description

The site is approximately 11.56 hectares of private land located at Yarrawonga, approximately 83 kilometres west of the Wodonga town centre. The study area is bordered by Yarrawonga Regional Park to the north, low density dwellings to the east, Murray Valley Highway to the south and Brears Road to the west. The site likely historically supported livestock grazing, with one artificial farm dam present in the north. The topography of the site was flat, with a slight slope in the north towards the Murray River. The shape of the land parcel is irregular. It is approximately 540 metres from north to south and 405 metres from east to west.

The site is currently zoned Low Density Residential Zone (LDRZ) and Rural Living Zone (RLZ) in the Moira Planning Scheme and lies in the non-Alpine parts of Victoria, which have a Fire Danger Index (FDI) of 100.

Photographs of the site and study area are provided in Section 3.2.

3.1.2. Classified vegetation, slopes and BAL assessment


During the field assessment, three classified vegetation classes were identified as per the classification methods in the Australian Standard AS 3959:2018. Classified vegetation is represented in Figure 1 and comprised the following.

- Grassland – occupied the majority of the site, and occurred in the north, east, south and west of the study area.
- Forest – occurred in the north of the site, and further north in the study area.
- Woodland – occurred in the south and north of the site and in the south, east and west of the study area.

Slopes under classified vegetation and defensible space distances required from the edge of the property based on a BAL-12.5 construction rating scenario are set out in a BAL assessment provided in Table 1.

3.2. Vegetation classification zones

This section provides a description of each of the areas of classified or low-threat vegetation identified.

Zone	1	Photo	1
Vegetation Classification or Exclusion Clause			
Class B - Woodland			
Description/Justification for classification			
<p>This zone was within the site on the southern end. It consisted of assorted planted and remnant eucalypts to 20 metres tall, overlying a grassy groundlayer with sparse planted shrubs. Although the grass was managed (mown) below the trees, ongoing management in a low-threat state cannot be guaranteed.</p> <p>Additionally, the tree density was considered high enough for this area to be classified vegetation rather than exempt. >0° to 5°.</p>			

Zone	2	Photo	2
Vegetation Classification or Exclusion Clause			
Class G - Grassland			
Description/Justification for classification			
<p>This zone was west of the site and comprised unmanaged grassland of primarily exotic pasture grasses. Planted trees were present throughout this zone at low cover and were not considered to influence fire behaviour in this zone. 0°/upslope.</p>			

Zone	3	Photo	3
Vegetation Classification or Exclusion Clause			
Class B - Woodland			
Description/Justification for classification			
<p>This zone occurred to the west of the site and comprised planted exotic trees and eucalypts over a managed lawn. . Although the grass was managed (mown) below the trees, ongoing management in a low-threat state cannot be guaranteed. Additionally, the tree density was considered high enough for this area to be classified vegetation rather than exempt. 0°/upslope.</p>			

Zone	4	Photo	4
Vegetation Classification or Exclusion Clause			
Class G - Grassland			
Description/Justification for classification			
<p>This zone was west of the site and comprised grassland of primarily exotic pasture grasses. Stock grazing was observed within this zone, however ongoing management cannot be guaranteed and as such a precautionary approach was taken. 0°/upslope.</p>			

Zone	5	Photo	5
Vegetation Classification or Exclusion Clause			
Class G - Grassland			
Description/Justification for classification			
<p>This zone was located within the site in the north. It comprised unmanaged paddocks of assorted exotic pasture species, with native graminoids interspersed. Trees were planted as windbreaks along fences and remnant trees were scattered throughout at low density. As such, they are not anticipated to influence fire behaviour in this hazard. A small, steep-sided dam was present within this zone, however these slopes were not considered likely to influence fire behaviour. 0° /Upslope.</p>			

Zone	6	Photo	6
Vegetation Classification or Exclusion Clause			
Class A - Forest			
Description/Justification for classification			
<p>This zone was present in the north of the site and connected to Yarrawonga Regional Park. It comprised a eucalypt canopy to 25 metres tall, overlying a grassy understory. A shrublayer comprising immature eucalypts and wattles provided fuel connectivity between the ground and the canopy. It occurred on a gentle slope. >0° to 5° downslope.</p>			

Zone	7	Photo	7
Vegetation Classification or Exclusion Clause			
Class B - Woodland			
Description/Justification for classification			
<p>This zone of classified vegetation occurred adjacent to the site's northeastern border. It consisted of a eucalypt canopy, overlying a grassy understorey. Shrubs and smaller trees were absent and canopy cover was lower than adjacent forest. 0° /Upslope.</p>			


Zone	8	Photo	8
Vegetation Classification or Exclusion Clause			
Class B - Woodland			
Description/Justification for classification			
<p>This zone occurred in the northeast of the site around a dam. It consisted of a canopy of eucalypts overlying a grassy understorey. This zone occurred on a gentle slope, which ascended away from the site. 0° /Upslope.</p>			

Zone	9	Photo	9
Vegetation Classification or Exclusion Clause			
Class G – Grassland Future Low threat vegetation			
Description/Justification for classification			
This zone was located north of the site. It comprised unmanaged paddocks of assorted exotic pasture species and native graminoids. Planted and remnant trees were scattered throughout at low density and some shrubs were planted along fence lines. These are not considered likely to influence fire behaviour in this hazard. 0°/Upslope. This property is subject to an approved planning permit for the subdivision into smaller lots. This will effectively eliminate this hazard.			

Zone	10	Photo	10
Vegetation Classification or Exclusion Clause			
Class G - Grassland			
Description/Justification for classification			
This zone was east of the site and comprised grassland of primarily exotic pasture grasses. Scattered trees and planted trees along fencelines were not considered likely to influence fire behaviour within this zone. Stock grazing was observed within this zone, however ongoing management cannot be guaranteed and as such a precautionary approach was taken. 0°/upslope.			

Zone	11	Photo	11
Vegetation Classification or Exclusion Clause			
Class G - Grassland			
Description/Justification for classification			
<p>This zone was within the centre of the site and comprised grassland of primarily exotic pasture grasses with some areas of native grassland. Some scattered remnant and planted trees occurred at low cover and as such were not considered likely to influence fire behaviour in this zone. Mowing had recently taken place within this zone, however ongoing management cannot be guaranteed and as such a precautionary approach was taken. 0°/upslope.</p>			

Zone	12	Photo	12
Vegetation Classification or Exclusion Clause			
Class G - Grassland			
Description/Justification for classification			
<p>This zone was south of the site and comprised unmanaged grassland of primarily exotic pasture grasses. Some scattered trees occurred at low density and were therefore considered unlikely to influence fire behaviour. 0°/upslope.</p>			

Zone	14	Photo	14
Vegetation Classification or Exclusion Clause			
Class B - Woodland			
Description/Justification for classification			
<p>This zone occurred south of the site across the Murray Valley Highway. It consisted of a canopy of eucalypts overlying a grassy understorey. Some scattered shrubs were present. This zone occurred on a gentle slope, which ascended away from the site. 0° /Upslope.</p>			

3.3. Hazard assessment

Table 1 summarises the classification of bushfire hazards and the resultant minimum setback distance arising from each threat in accordance with a BAL 12.5 construction standard.

Table 1: Hazard assessment

Zone	Vegetation Classification	Effective slope	Minimum setback required for BAL 12.5 construction	Current separation from nearest lot/building envelope (m)
1	Class B – Woodland*	0° /Upslope	33	Continuous (inside site)
2	Class G - Grassland	0° /Upslope	19	31
3	Class B - Woodland	0° /Upslope	33	35
4	Class G - Grassland	0° /Upslope	19	50
5	Class G – Grassland*	0° /Upslope	19	0
6	Class A – Forest	>0° - 5° downslope	57	70
7	Class B - Woodland	0° /Upslope	33	172
8	Class B - Woodland	0° /Upslope	33	110

Zone	Vegetation Classification	Effective slope	Minimum setback required for BAL 12.5 construction	Current separation from nearest lot/building envelope (m)
9	Class G – Grassland*	0° /Upslope	19	0
10	Class G - Grassland	0° /Upslope	19	0
11	Class G – Grassland*	0° /Upslope	19	Continuous (inside site)
12	Class G - Grassland	0° /Upslope	19	59
13	Class B - Woodland	0° /Upslope	33	38

* = Hazard to be eliminated prior to or during construction. **Grey** = Influencing hazards








The bushfire hazards which will influence the development design and minimum setback distances are highlighted in grey above and are represented in Figure 3. These hazards comprise forest to the north (Zone 6) and grassland to the east (Zone 10). The club house requires defensible space to be maintained at a distance of 57 metres to the north-east. Given that the wetland and surrounds will be revegetated, the extent of the forest hazard may expand. However, any vegetation within 57 metres must be maintained to defensible space standards. An alternative measure has been proposed along the interface of the development site and the grassland hazard (Zone 10), whereby the construction of a bushfire resistant shielding wall is proposed to be constructed (see Table 3 for details).

The development must therefore provide appropriate setback distances or appropriate bushfire protection measures from these threats, as identified in Table 1 and shown on Figure 3.

Development of the site will result in the elimination of the entirety of Zone 1, 5 and 11, and they are therefore not considered to influence separation distance requirements. Additionally, Zone 9 will be reduced to a low threat state as it undergoes residential subdivision in accordance with the approved planning permit. All other bushfire threats within the study area are considered sufficiently separated from the development within the site.

Figure 1: Bushfire Hazard Site Assessment


Project number: 23166.02
 Project: Brears Road, Yarrowonga
 Date: 21/08/2023

-  Site
 -  Study area (150m buffer of site)
 -  Effective slope under hazard
- Classified vegetation**
-  Forest
 -  Woodland
 -  Grassland
 -  Low threat



N

Metres
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3.4. Bushfire hazard landscape assessment

3.4.1. Hazards in the landscape

The surrounding area is occupied by paddocks with planted shrubs and trees along fence lines, as well as semi-rural and residential dwellings. Paddocks are most extensive to the west and northeast of the site, while land transitions to semi-rural residential use to the east. Large tracts of treed vegetation connected to Yarrawonga Regional Park just north of the site represent the most significant bushfire threat in the immediate vicinity of the site.

The study area lies within a broader landscape type Two as defined in the BMO technical guide (DELWP 2017) and includes the following:

- Vegetation beyond 150-metres of the site may result in neighbourhood-scale destruction. This is particularly relevant to Yarrawonga Regional Park and interfacing vegetation, occurring to the north of the site.
- Bushfire can only approach from one aspect and the site is located in a township area managed in a minimum fuel condition. Bushfire is likely to only approach the site from the Yarrawonga Regional Park in the north as surrounding land is predominantly grassland and low-threat.
- Access is readily available to areas of bushfire shelter. This is supported by egress via the Murray Valley Highway. Egress to Yarrawonga represents the safest source of bushfire shelter in the surrounding landscape.

The *Regional Bushfire Planning Assessment* for the Mitchell local government area (DPCD 2012) identifies the following bushfire risks in the landscape:

- Interface area to the west and north-west of Yarrawonga in proximity to bushfire hazard associated with the Murray River Riparian corridor. This risk occurs directly to the north of the site and is contiguous with forest occurring within the site.

3.4.2. Bushfire history

The closest history of a bushfire to the study area since 1970 was from 2019 and was 760 metres to the north of the site, within Yarrawonga Regional Park. This represented a minor bushfire and was likely put out shortly after it started. A few other such bushfires have occurred further upstream along the Murray River and are also relatively small in extent. There is no recognised mapping of planned burns being undertaken at Yarrawonga Regional Park at the interface between the park and the community.

Refer to Figure 2 for a map presenting the landscape assessment.

3.4.3. Likely bushfire scenarios

In Victoria, the most severe weather conditions for bushfire are hot dry winds from the northwest, that after a cool change, change direction to the southwest. The sudden shift in wind direction can cause a rapid change in bushfire direction and behaviour. However, the threat from a bushfire can approach from all directions.

The nearest and greatest bushfire threat comprises Yarrawonga Regional Park, which is contiguous with the site. Yarrawonga Regional Park provides a largely uninterrupted fire run if bushfire is to occur to the north, northwest, or northeast with only minor roads and semi-rural properties with retained vegetation between this threat and the site.

The most threatening fire run is to the northwest of the site, where a fire could rapidly burn through the landscape along the river to reach the site's densely vegetated northern border.

An analysis of other potential fire runs identified the following:

- A fire run could approach from the west or southwest originating in grassland vegetation and spreading through extensive paddock vegetation, cropland and roadside treed habitat. This fire run could burn across a maximum distance of 2 kilometres. However, it would be interrupted by the Murray Valley Highway and Brears Road to the site's west, limiting the potential for direct flame contact with the site and will therefore more likely be a source of ember attack.

The most likely and/or threatening potential bushfire runs toward the proposed development are shown in Figure 2.

Defendable space and construction requirements set out in the current report will reduce the impact from these threats in the surrounding landscape.

3.5. Egress to built-up areas

The proposed development will provide vehicular egress to Brears Road to the west, a single-carriageway sealed road. In the event of extreme bushfire behaviour to nearby built-up areas this roadway could provide the following routes from the site to area of BAL-LOW (Figure 2):

- Yarrawonga – 3.0 kilometres to the east via Brears Road and the Murray Valley Highway.

This egress route would involve travelling on roads that traverse grassland, paddocks and residential lots.

Figure 2: Bushfire Hazard Landscape Assessment


Project number: 23166.02
Project: Brears Road,
Yarrowonga
Date: 3/08/2023

- ★ Site
- Access and egress
- Fire history**
- ▭ Bushfire
- ▭ Controlled burn
- Potential fire run**
- More likely
- Less likely



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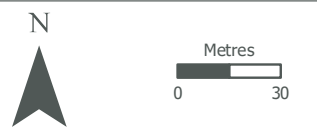
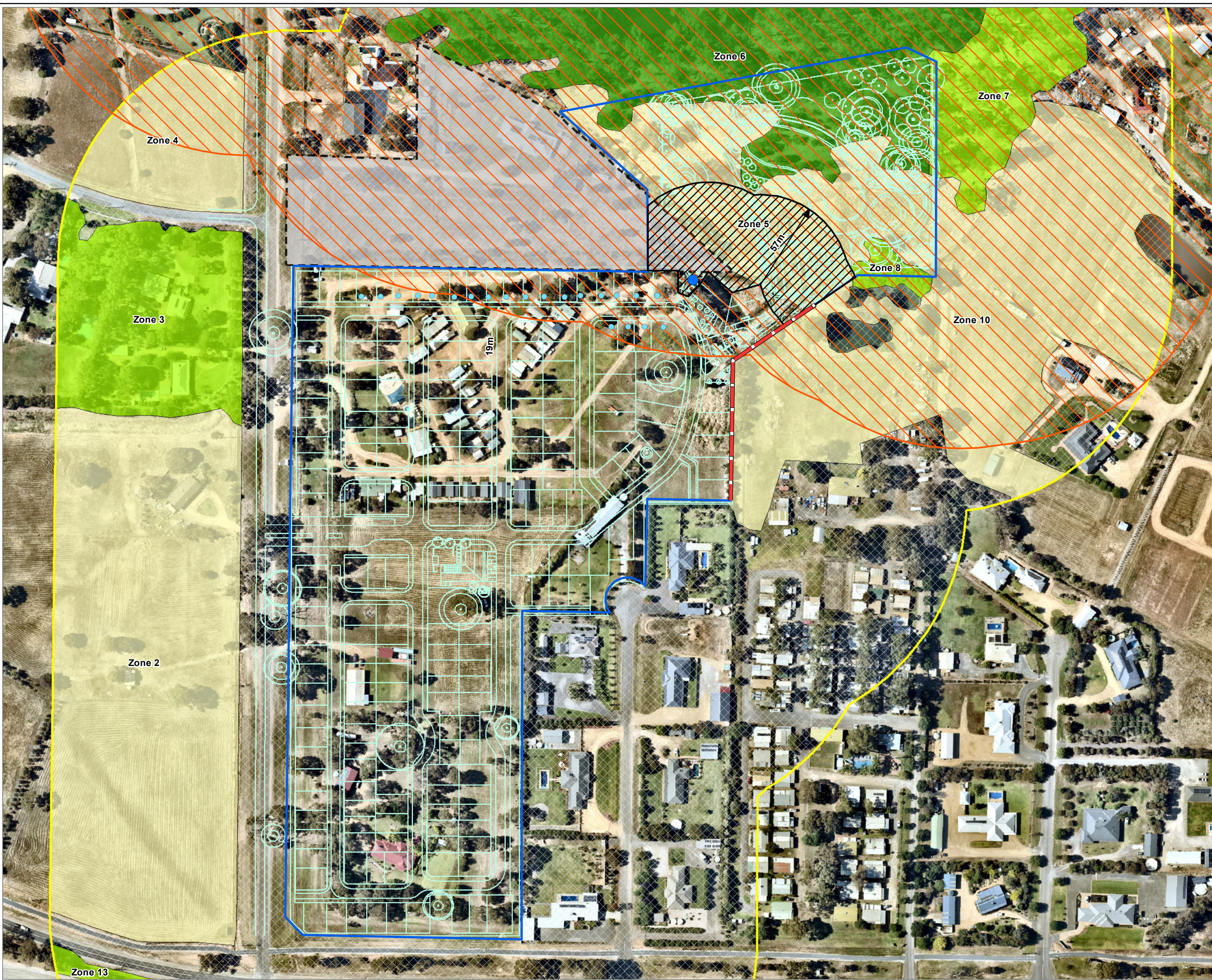
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Figure 3: Bushfire Protection Measures

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Date: 6/11/2023

- Site
- Study area (150m buffer of site)
- Bushfire Management Overlay
- Subject to approved subdivision plan – to become low threat
- Proposed layout
- 10,000L water supply with fire authority fittings and access required
- 5,000L water tank to be provided for personal use only
- Bushfire resistant shielding wall – Alternative measure. Specifications subject to FRV consultation
- ▨ Defendable space -BAL 12.5
- Classified vegetation**
- Forest
- Woodland
- Grassland
- Low threat



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4. Bushfire Management Statement

This section evaluates the extent to which proposed dwellings within the BMO on the property meets the bushfire protection measures of Clause 53.02-4, as follows:

- Landscape, siting and design;
- Defendable space and construction; and
- Water supply and access.

Bushfire protection objectives may be met through the implementation of:

- Approved measures (AM) – an approved measure meets the objective; and
- Alternative measures (AltM) – an alternative measure may be considered where the responsible authority is satisfied that the objective can be met. The responsible authority may consider other unspecified alternative measures.

4.1. Landscape, siting and design

4.1.1. Landscape, siting and design objectives

The landscape, siting and design bushfire protection objectives are as follows:

- 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.

Table 2: Meeting the landscape, siting, and design objectives

Measure	Requirement	Bushfire protection measures adopted
AM 2.1	The bushfire risk to the development from the landscape beyond the site can be mitigated to an acceptable level.	The bushfire hazard landscape assessment defines the location as landscape type Two, therefore meeting the other objectives in Clause 53.02-4 (below) will mitigate the bushfire risk to an acceptable level.
AM 2.2	A building is sited to ensure the site best achieves the following: <ul style="list-style-type: none"> ▪ The maximum separation distance between the building and the bushfire hazard ▪ The building is in proximity to a public road ▪ Access can be provided to the building for emergency service vehicles 	<p>New dwellings will be located to provide maximum separation distance between the building and the most significant bushfire hazard to the northeast, forest (see AM 3.1 below).</p> <p>Any new dwelling will be located in close proximity (no greater than 10 m) to newly created roads within the residential village,</p> <p>Access can be provided to any new dwelling for emergency service vehicles (see AM 1.3 below).</p>
AM 2.3	A building is designed to be responsive to the landscape risk and reduce the impact of bushfire on the building.	New dwellings will avoid building design that allows for embers to lodge in re-entrant corners, complex roof lines, gaps between building materials and unenclosed underfloor spaces by building to a minimum construction standard of BAL 12.5.

4.2. Buildings and defendable space

The buildings and defendable space bushfire protection objective is to ensure that:

- Defendable space and building construction mitigate the effect of flame contact, radiant heat and embers on buildings.

The required BAL construction rating for the proposed dwelling and defendable space requirements are outlined in Sections and 3.3 and shown in Figure 3.

Table 3: Meeting the defendable space and construction objectives

Measure	Requirement	Bushfire protection measures adopted
Approved measures		
AM 3.1	<p>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 defendable space in accordance with:</p> <ul style="list-style-type: none"> ▪ Table 2 Columns A, B or C and Table 6 to Clause 53.02-5 wholly within the title boundaries of the land; or ▪ If there are significant siting constraints, Table 2 Column D and Table 6 to Clause 53.02-5. <p>The building is constructed to the bushfire attack level that corresponds to the defendable space provided in accordance with Table 2 to Clause 53.02-5.</p>	<p>In accordance with the minimum defendable space requirement corresponding to Table 2 of Clause 53.02-5, Column A (see Figure 3), the proposed dwellings will be constructed to BAL-12.5.</p>
AM 3.2	<p>A building used for accommodation (other than a dwelling or dependent person's unit), a childcare centre, an education centre, a hospital, leisure and recreation or a place of assembly is:</p> <ul style="list-style-type: none"> ▪ Provided with defendable space in accordance with Table 3 and Table 6 to Clause 52.47-3. wholly within the title boundaries of the land. ▪ Constructed to a bushfire attack level of BAL-12.5. 	<p>The club house will be constructed to BAL-12.5 and will maintain defendable space to 57m at the interface between the building and the forest hazard as shown on Figure 3. Retained classified vegetation will be managed to defendable space standards (see Appendix 2).</p>

Measure	Requirement	Bushfire protection measures adopted
Unspecified AltM 3.3	<p>The construction of a bushfire resistant shielding wall can be implemented as an alternative measure to providing adequate separation distance if it can effectively mitigate the effect of flame contact, radiant heat and embers on buildings.</p> <p>The wall must be constructed to a FRL of no less than 60/60/60 (in accordance with the construction requirement for a wall that is not sufficiently separated from a building subject to the BAL assessment - Section 3.2.1 of AS3959).</p> <p>Additionally, it must be constructed from the following materials.</p> <ul style="list-style-type: none"> ▪ Non-combustible materials (such as masonry, brick veneer, mud brick, concrete, aerated concrete, etc); or ▪ Steel-framed walls that are sarked on the outside of the frame and clad with Fibre cement external cladding with a 6mm minimum thickness; or Steel sheet. <p>The final construction design must be to the satisfaction of Fire Rescue Victoria.</p>	<p>The design proposes to install a bushfire resistant shielding wall along the eastern boundary of the property, as shown on Figure 3. The intent is so the adjacent dwellings and the club house do not need to be setback from the Grassland hazard in the adjoining property. Given that this hazard is grassland, the potential flame height, ember attack and the radiant heat output from a grassland fire is the least severe bushfire threat and will be sufficiently shielded by the proposed bushfire resistant shielding wall. The exact specifications of the wall are subject to agreement with Fire Rescue Victoria but will be to the specifications detailed.</p> <p>The current fuel loads within this hazard are currently at minimum levels due to the continual grazing pressure within the property.</p>

4.3. Water supply and access

4.3.1. Water supply and access objectives

The water supply and access bushfire protection objectives are to ensure that:

- A static water supply is provided to assist in protecting property; and
- Vehicle access is designed and constructed to enhance safety in the event of a bushfire.

Table 4: Meeting the water supply and access objectives

Measure	Requirement	Bushfire protection measures adopted
AM 4.1	<p>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:</p> <ul style="list-style-type: none"> ▪ A static water supply for firefighting and property protection purposes specified in Table 4 to Clause 53.02-5. ▪ Vehicle access that is designed and constructed as specified in Table 5 to Clause 53.02-5. <p>The water supply may be in the same tank as other water supplies provided that a separate outlet is reserved for firefighting water supplies.</p>	<p>A reticulated water supply and hydrants will be provided for the development to the requirements outlined in Appendix 3.</p> <p>A static water supply for fire-fighting and property protection purposes will be provided to dwellings covered by the BMO as specified in Clause 53.02-5 to the requirements outlined in Appendix 3 and capacities as follows:</p> <ul style="list-style-type: none"> ▪ Dwellings 4-20 and 95-98: 5,000 litre static water supply for personal use (no fire authority fittings required). <p>Vehicle access that is designed and constructed as specified in Clause 53.02-5 will be provided for the residential village to the requirements outlined in Appendix 4.</p>
AM 4.2	<p>A building used for accommodation (other than a dwelling or dependent person’s unit), childcare centre, education centre, hospital, leisure and recreation or place of assembly is provided with:</p> <ul style="list-style-type: none"> ▪ A static water supply for firefighting and property protection purposes of 10,000 litres per 1,500 square metres of floor space up to 40,000 litres. ▪ Vehicle access that is designed and constructed as specified in Table 5 to Clause 53.02-5. ▪ An integrated approach to risk management that ensures the water supply and access arrangements will be effective based on the characteristics of the likely future occupants including their age, mobility and capacity to evacuate during a bushfire emergency. <p>The water supply may be in the same tank as other water supplies provided that a separate outlet is reserved for firefighting water supplies.</p>	<p>A static water supply for fire-fighting and property protection purposes will be provided to the club house as specified in Clause 53.02-5 to the requirements outlined in Appendix 3 and capacities as follows:</p> <ul style="list-style-type: none"> ▪ 10,000 litre static water supply for fire authority use (fire authority fittings and access required). <p>Vehicle access that is designed and constructed as specified in Clause 53.02-5 will be provided for the residential village to the requirements outlined in Appendix 4.</p> <p>An emergency vehicle must be able to get within 4m of the tank or a remote outlet (as shown in Figure 4).</p>

4.4. Subdivision

4.4.1. Subdivision objectives

Although this application is for a residential village development and not for a subdivision application, the nature of the proposal is such that it should consider the subdivision implications under Clause 53.02.

The subdivision bushfire protection objectives are as follows:

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

Table 5: Meeting the subdivision objectives

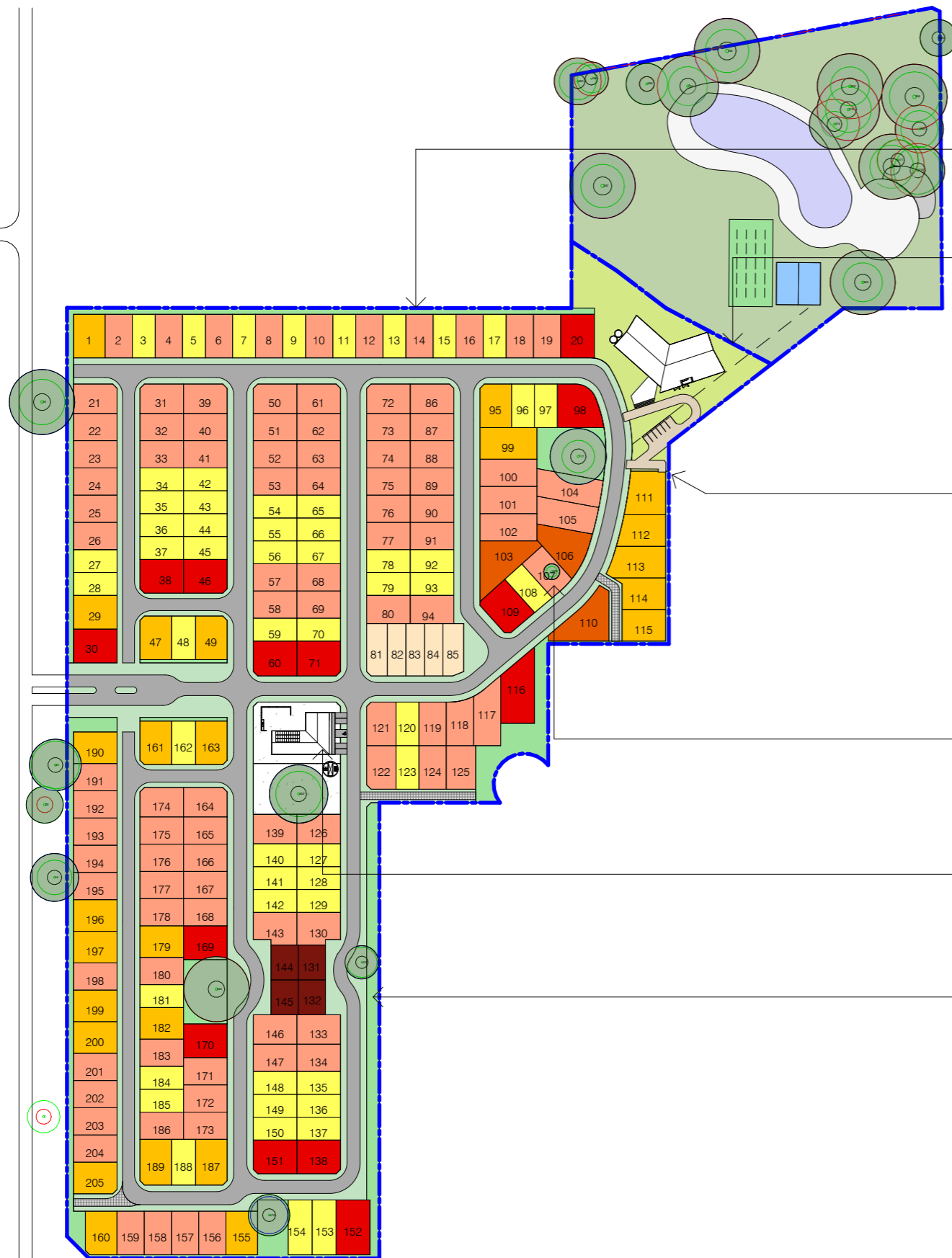
Measure	Requirement	Bushfire protection measures adopted
Approve measures		
AM 5.1	<p>An application to subdivide land, other than where AM 5.2 applies, demonstrates that each proposed lot is capable of meeting:</p> <ul style="list-style-type: none"> ▪ The defensible space in accordance with Table 2 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 	Not applicable – AM 5.2 applies

Measure	Requirement	Bushfire protection measures adopted
AM 5.2	<p>An application to subdivide land zoned for residential or rural residential purposes must be accompanied by a plan that shows:</p> <ul style="list-style-type: none"> ▪ 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 defensible space in accordance with: <ul style="list-style-type: none"> ○ 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. <p>The bushfire attack level that corresponds to the defensible space provided in accordance with Table 2 to Clause 53.02-5 must be noted on the building envelope.</p> <ul style="list-style-type: none"> ▪ Defensible space wholly contained within the boundaries of the proposed subdivision. ▪ Defensible space may be shared between lots within the subdivision. Defensible space for a lot may utilise communal areas, such as roads, where that land can meet the requirements for defensible space. ▪ Vegetation management requirements in accordance with Table 6 to Clause 53.02-5 to implement and maintain the defensible space required under this approved measure. ▪ Water supply and vehicle access that complies with AM 4.1 	<p>Although not a subdivision plan, the residential village proposal complies with AM 2.1 (see Section 4.1 of this report).</p> <p>Any new dwellings created by the proposed residential village will be constructed to the BAL construction ratings outlined in Section 3.3 and shown in the BMP accompanying this report (Appendix 5), in accordance with Column A of Table 2 to Clause 53.02-5.</p> <p>Land designated in the BMP as defensible space corresponding with these BAL ratings will be wholly contained within the development boundaries and managed to the vegetation management requirements in accordance with Table 6 to Clause 53.02-5.</p> <p>Water supply and vehicle access will comply with AM 4.1 (see Section 4.3 of this report).</p>
AM 5.3	<p>An application to subdivide land to create 10 or more lots provides a perimeter road adjoining the hazardous vegetation to support fire-fighting.</p>	<p>Although the development plan does not provide a perimeter road adjoining hazardous vegetation to the northeast, access to the rear of the club house remains unobstructed for emergency personnel to access the rear of the building between the hazard and the broader development area. Limited hazards remain directly adjacent to the development once construction is complete. The proposal to install a fire resistant wall (AltM 3.3) negates the requirement for a perimeter road along the eastern boundary.</p>
AM 5.4	<p>A subdivision manages the bushfire risk to future development from existing or proposed landscaping, public open space and communal areas.</p>	<p>Any future landscaping will address the CFA publication <i>Landscaping for Bushfire</i> (www.cfa.vic.gov.au).</p>

5. References

- CFA 2006, *Requirements for water supplies and access for subdivisions in residential 1 and 2 and township zones*, State of Victoria, Country Fire Authority, Burwood East.
- CFA 2011, *Landscaping for bushfire – garden design and plant selection*, State of Victoria, Country Fire Authority, Burwood East.
- CFA 2019, *Identification of street hydrants for firefighting purposes*, State of Victoria, Country Fire Authority, Burwood East.
- DELWP 2017, *Planning Permit Applications – Bushfire Management Overlay, Technical Guide*, Department of Environment, Land, Water and Planning, East Melbourne.
- DEECA 2023a, *VicPlan*, Department of Energy, Environment and Climate Action, East Melbourne, <<https://mapshare.vic.gov.au/vicplan/>>.
- DEECA 2023b, *Victoria Planning Provisions*, Department of Energy, Environment and Climate Action, Melbourne, <<https://planning-schemes.app.planning.vic.gov.au/Victoria%20Planning%20Provisions/ordinance/>>
- DPCD 2012, *Regional Bushfire Planning Assessment – Hume Region*, Department of Planning and Community Development, Melbourne.
- Standards Australia 2018, *Australian Standards AS 3959:2018, Construction of buildings in bushfire-prone areas*, Standards Australia, Sydney.

Appendix 1: Development plan



Adjoining Property Easement used as Bushfire Buffer along Northern Edge

Recreation zone Boundary

Bushfire Wall along Westside Caravan Park Boundary

Tree 380 (Dead Hollow native tree) to be relocated to Recreation zone - As per Nature Advisory

New Wellness Precinct

All encroachment into TPZ zones within allowable 10%

Most Ecologically Significant Trees to be retained as per Nature Advisory: (Tree numbers from Arborist)

- 1
- 16
- 20
- 21
- 27
- 30
- 117
- *380 (To be relocated)
- 452
- 522
- 537
- 572

1 MP OPTION 11 LOT MIX
SCALE: 1 : 2500

PRELIMINARY
NOT FOR CONSTRUCTION



DC8 Studio
30 Commercial Rd
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4006 Australia
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ABN 63 145 153 215

CONCEPT DESIGN

CAD Disclaimer
ISSUED DRAWINGS TAKE PRECEDENCE OVER CAD EXPORTS. READ DIGITAL FILES IN CONJUNCTION WITH ISSUED DRAWINGS. VERIFY DIMENSIONS ON SITE PRIOR TO PROCEEDING. FIGURED DIMENSIONS TAKE PRECEDENCE OVER SCALE.
DRAWINGS MAY NOT BE COPIED, DISTRIBUTED OR REPRODUCED WITHOUT THE WRITTEN PERMISSION OF THE ARCHITECT.



Client: PENTOLA PARTNERS
Project: YARRAWONGA LLC
Address: 38 Brears Road, Yarrowonga
Project Number: PEN001

Rev.	Date	Amendment	By	Att.
A	19/09/23	ISSUE FOR CLIENT REVIEW		
B	25/09/23	CLIENT REVIEW		
C	26/09/23	CLIENT REVIEW		
D	4/10/23	FOR INFORMATION	MAG	

MASTERPLAN OPTION 11 - Lot Mix

Drawn: MG

Approved: RR

A3 Scale: 1 : 2500

DA002

Revision: D

4/10/2023 11:12:41 AM

Appendix 2: Vegetation management requirements

(Taken from Table 6 of Clause 53.02)

The defensible space management requirements below must be implemented.

- 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.

Appendix 3: Fire Authority water supply requirements

Reticulated water supply

Where a reticulated water supply is being installed, operable hydrants must be provided in accordance with the *Requirements for water supplies and access for subdivisions in residential 1 and 2 and township zones* (CFA 2006). Access to the water supply will meet the requirements of the relevant fire authority. The following has been adopted from the CFA (2006, 2012) and is required for subdivisions where hydrants are being installed.

- The maximum distance between a hydrant and the rear of the building envelope must be 120 metres and hydrants must be no more than 200 metres apart;
- Hydrants placement must comply with AS2419-2005;
- Installation depths must comply with the Water Supply Code of Australia (WSA 03–2011);
- To ensure operation of the standpipe, fire plugs must be installed between 100 and 200 millimetres from the top cover plate to the top of the lugs; and
- To ensure that firefighters can rapidly locate water supplies in emergency, hydrants must be identified as specified in *Identification of Street Hydrants for Firefighting Purposes* (see below) available under publications on the CFA’s website (cfa.vic.gov.au).

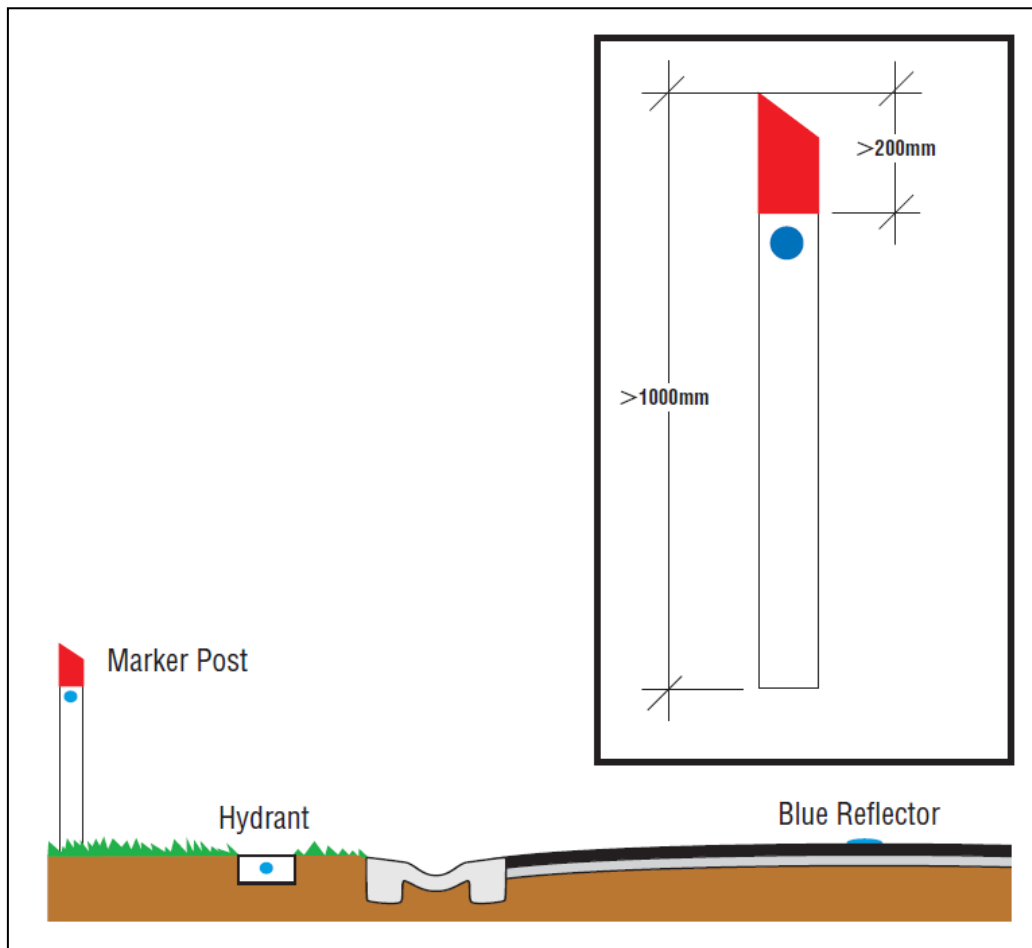


Figure 4: Identification of street hydrants for firefighting purposes

Appendix 4: Vehicle access design and construction

(Taken from Table 5 of Clause 53.02)

The proponent will provide safe access and egress arrangements which meet the requirement of the relevant fire authority.

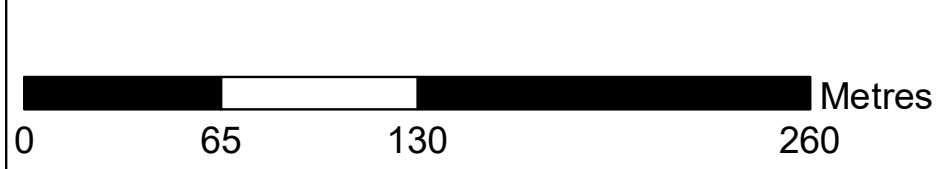
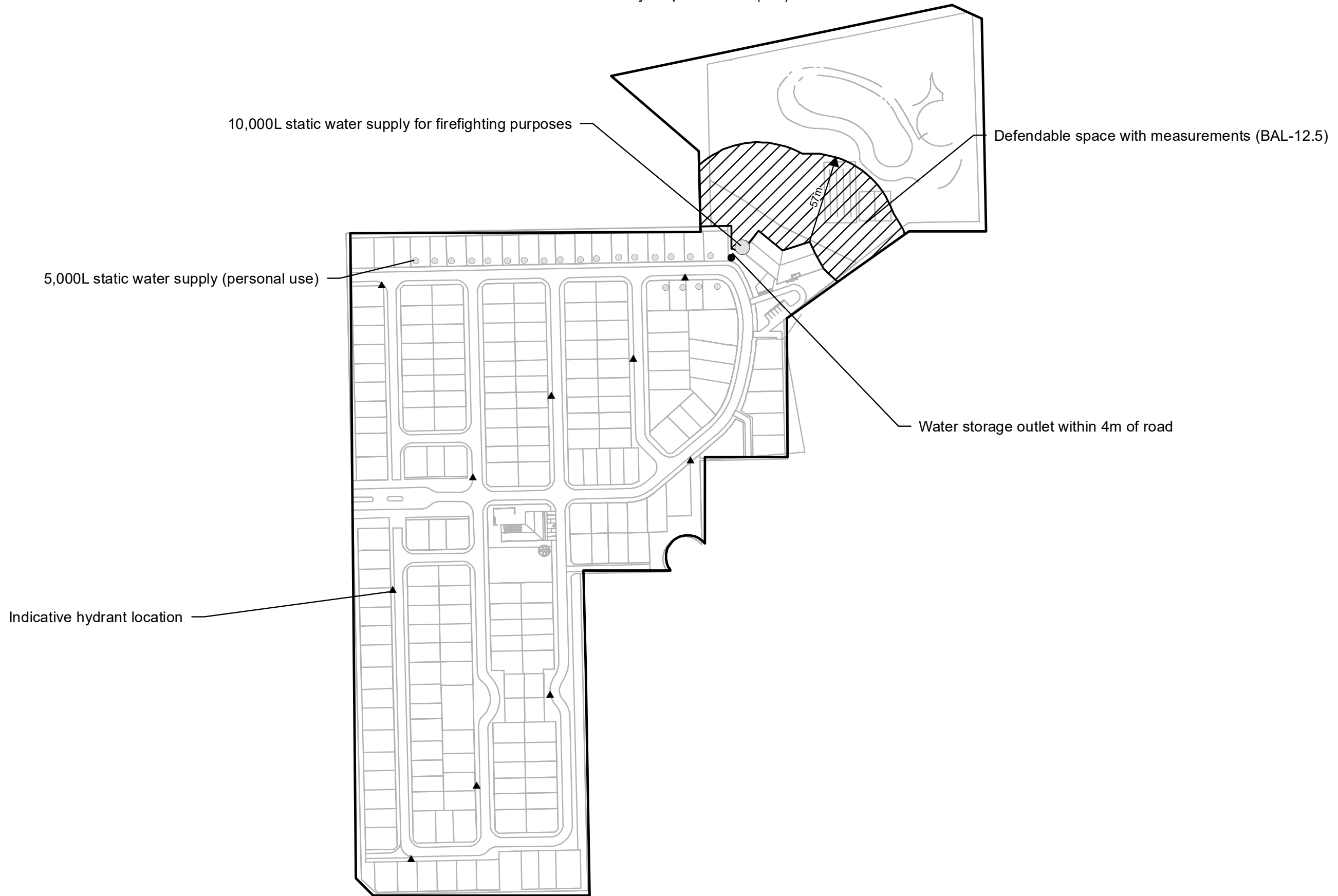
Where the length of access is greater than 30 metres (but no greater than 100 metres), the following design and construction requirements apply:

- All-weather construction;
- A load limit of at least 15 tonnes;
- 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;
- 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 grade of no more than 1 in 5 (20%/11.3°) for no more than 50 metres; and
- Dips must have no more than a 1 in 8 (12.5 per cent/7.1 degrees) entry and exit angle.

Appendix 5: Bushfire Management Plan

Brears Road, Yarrowonga: Bushfire Management Plan

Nature Advisory Report 23166 (1.0) October 2023



See overleaf for schedule of conditions

SCHEDULE OF CONDITIONS – BUSHFIRE PROTECTION MEASURES

Brears Road, Yarrawonga

Nature Advisory Report 23166.02 (1.0), 5th October 2023

<p>Defendable space management</p> <p>Defendable space as shown on the plan must be maintained to the following requirements:</p> <ul style="list-style-type: none"> ▪ 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 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. 	<p>Access designed to accommodate CFA access</p> <p>Access driveways for fire-fighting purposes must meet the following design and construction requirements:</p> <ul style="list-style-type: none"> ▪ All-weather construction. ▪ A load limit of at least 15 tonnes. ▪ 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 4m vertically. ▪ Curves must have a minimum inner radius of 10 metres. ▪ The average grade must be no more than 1 in 7 (14.4 per cent/8.1 degrees) with a maximum of no more than 1 in 5 (20 per cent/11.3 degrees) for no more than 50 metres. ▪ Dips must have no more than a 1 in 8 (12.5 per cent/7.1 degrees) entry and exit angle.
<p>Water supply for firefighting purposes</p> <p>The club house must be provided with a static water supply for firefighting and property protection purposes. Unless otherwise agreed in writing by the relevant fire authority, the water supply must:</p> <ul style="list-style-type: none"> ▪ Be stored in an above ground water tank constructed of concrete or metal, and have an effective water supply of 10,000 litres for firefighting purposes. ▪ Have all fixed above-ground water pipes and fittings required for firefighting purposes must be made of corrosive resistant metal. ▪ Be readily identifiable from the building or appropriate identification signage to the satisfaction of the relevant fire authority must be provided. ▪ 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 accessway and unobstructed. ▪ Incorporate a ball or gate valve (British Standard Pipe (BSP) 65 millimetres) and coupling (64 millimetres CFA 3 thread per inch male fitting). <p>Any pipework and fittings must be a minimum of 65 millimetres (excluding the CFA coupling).</p> <p>Any dwellings within the Bushfire Management Overlay (dwellings 4-20 and 95-98) must provide a 5,000 litre static water supply for personal use (no fire authority fittings required).</p> <p>The development must provide a reticulated water supply with operable hydrants. These must be installed in accordance with the <i>Requirements for water supplies and access for subdivisions in residential 1 and 2 and township zones</i> (CFA 2006). Refer to Appendix 3 of the Bushfire Planning Report (Nature Advisory Report no. 23166.02 (1.0), 2023) for specifications and diagram.</p>	<p>Construction</p> <ul style="list-style-type: none"> ▪ All dwellings and the Club House will be designed and constructed to a minimum Bushfire Attack Level of BAL-12.5.