

Bushfire Development Report

FOR
Proposed Subdivision
1 WILLS STREET, MALMSBURY, VIC

Prepared by:
Hamish MacCallum
Phoenix Wildfire Management
www.phoenixwildfire.com.au
Version#4
16/10/2023



Contents

Site Description	3
Introduction	4
Site Overview	5
Development Master Plan	7
Bushfire Planning and Building Controls	8
Bushfire Prone Area	9
Bushfire Landscape Assessment	11
Expected Bushfire Behaviour	12
Bushfire Place of Last Resort	13
Bushfire Landscape Assessment	16
Bushfire Hazard Assessment	17
Surrounding Vegetation	18
Development setbacks and BAL construction standards	20
Clause 13.02-1S Bushfire	29
Bushfire hazard identification and assessment Strategies	30
Settlement and Planning Strategies	31
Biodiversity and Conservation Value	33
Conclusion	34
Site Photos	35

Bushfire Development Report

Prepared for Deborah Barton

Proposed re-zoning and subdivision of 1 Wills Street, Malmsbury

Prepared by:

Name: Hamish MacCallum

Address: 240 White Quartz Road, Fryerstown 3451

Telephone: 0427 403 229

Email: hamish@phoenixwildfire.com.au

Version/date: #4 16/10/2023

Application Details

Municipality:	Macedon Ranges
Title description:	1-24A\PP5495
Overlays:	ESO, ESO4, HO, HO148, BPA
Zoning:	Farming Zone

Site Description

Site shape:	Triangular
Site Dimensions:	98.4m, 28.9m, 303.6m, 288.2m
Site Area	18564 sq.m
Existing use and siting of buildings and works on and near the land:	There is currently one occupied dwelling on the lot. It has a driveway entrance from Wills St and an attached garage. A small garden shed sits to the south of the dwelling.
Existing vehicle arrangements:	The driveway access on Wills St is currently the only existing vehicle access.
Location of nearest fire hydrant:	Wills St, adjacent to the site.
Any other features of the site relevant to bushfire considerations:	The property is not currently subject to the BMO. Adjacent land to the south is currently the predominant classifiable vegetation zone and is classified as Rural Living Zone and subject to development in the future.

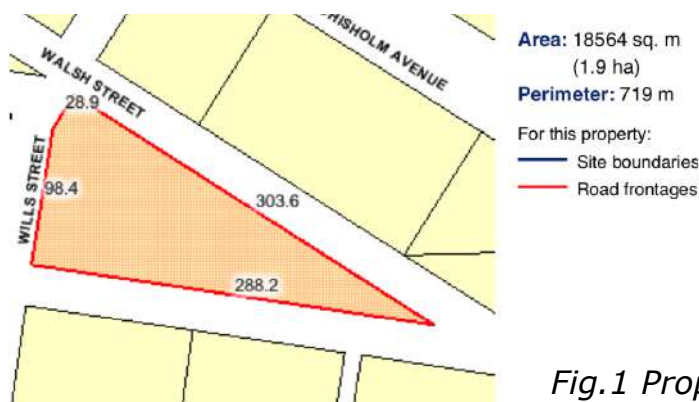


Fig.1 Property details

Introduction

This Bushfire Management Report has been prepared on behalf of Deborah Barton (the developer) to support the rezoning and subdivision of 1 Wills Street, Malmsbury. This report has been prepared to demonstrate how the proposed rezoning and subdivision can respond to the bushfire risk and comply with the Victorian planning and building controls that relate to bushfire, specifically the requirements of Clause 13.02-1S Bushfire Planning, Clause 44.06 Bushfire Management Overlay (BMO) and associated Clause 53.02 Bushfire Planning in the Macedon Ranges Shire Planning Scheme. The site is within the declared Bushfire Prone Area.

The study site proposed for rezoning is within the Farming Zone and is a residential lot with substantial surrounding grassland paddock, predominantly used for occasional grazing and rural lifestyle development. There is an existing dwelling on the site. It is proposed to rezone the site to Neighbourhood Residential Zone. The larger size lots proposed by the development offer a transition from the neighbouring Farming Zone and Rural Living Zone to the south and the Malmsbury Township Zone to the north and west. There is a 2000sqm minimum lot size proposed for the subdivision, with a minimum 35% of a lot set aside as garden area.

This report have been prepared in accordance with the guidance provided in:

- Local Planning for Bushfire Protection, Planning Practice Note 64;
- Strategic Assessment Guidelines for preparing and evaluating planning scheme
- amendments, Planning Practice Note 46;
- Planning Permit Applications - Bushfire Management Overlay, Technical Guide; and
- Bushfire State Planning Policy Amendment VC140, Planning Advisory Note 68.

In a BPA, larger developments and certain vulnerable uses including Accommodation are also required by Clause 13.02-1S Bushfire to:

- ‘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.’

Site Overview

The subject site is currently 1.9 Ha Farming Zone with a single dwelling. The property is bordered by residential development to the west and north, with the southern sector currently open paddocks zoned as Rural Living Zone. The neighbouring property to the east is currently Farming Zone. The proposed subdivision of 9 lots is in keeping with the surrounding land use, the lot has marginal value as farming land due to the small, irregular size of the lot and the prevalent basalt boulders throughout the soil profile.

The Lot sits within the Township Structure Plan's urban boundary.

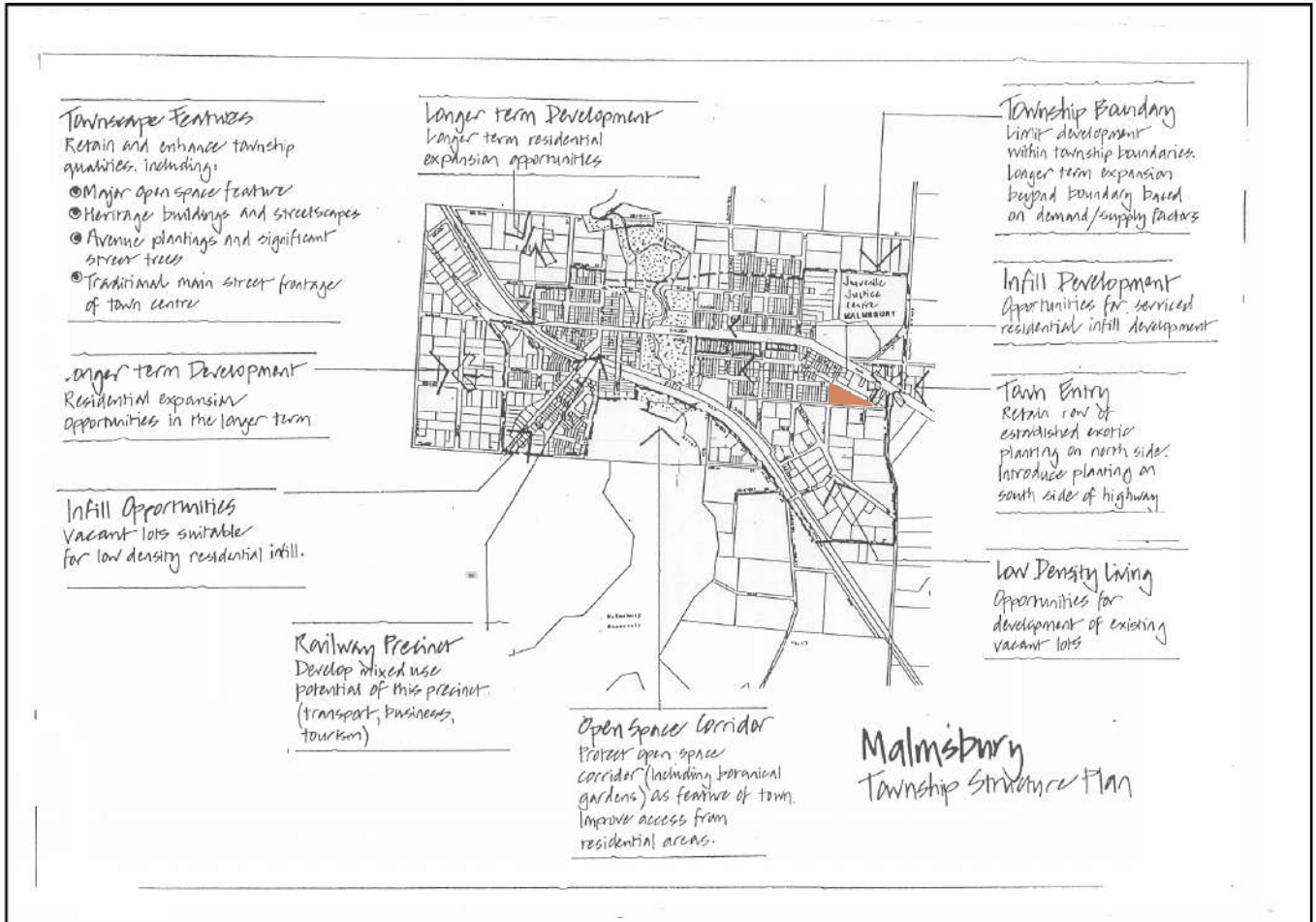


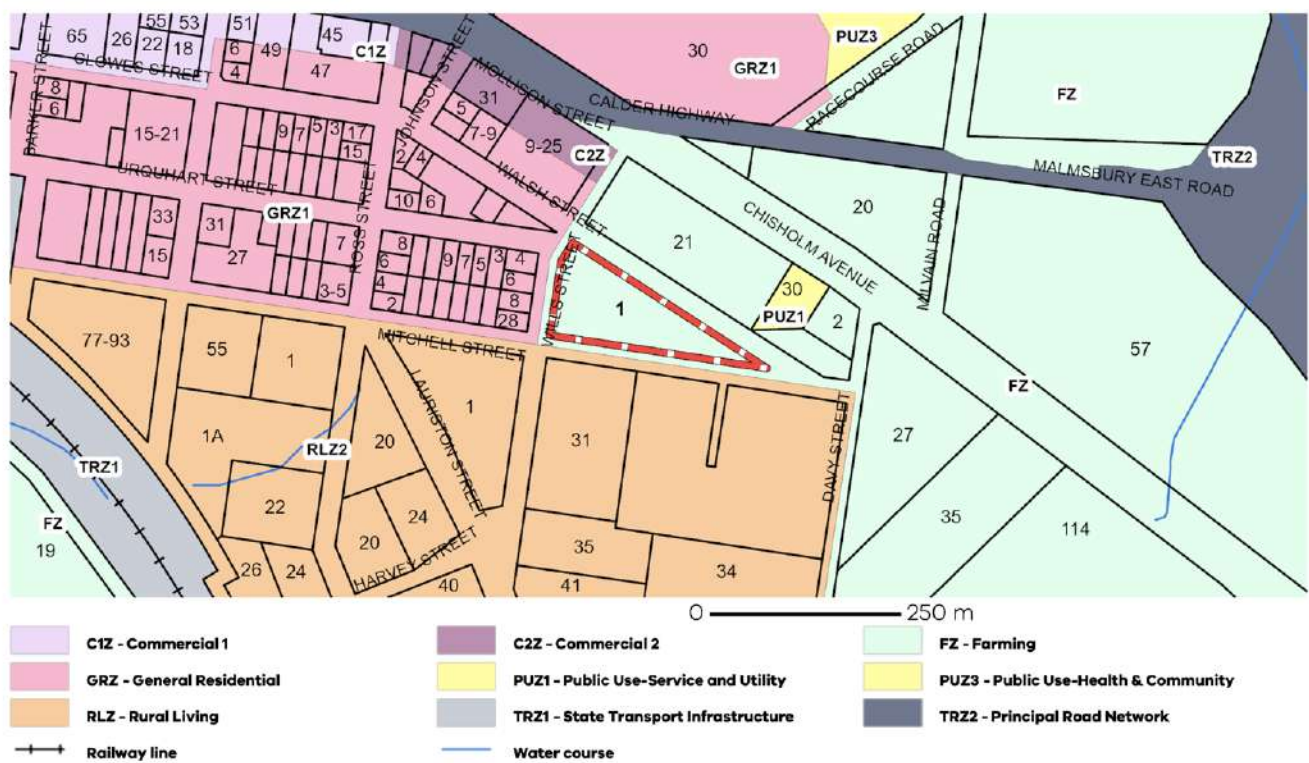
Fig.2 Malsbury Township Structure Plan



Fig.3 Property zoning

Planning Zones

SCHEDULE TO THE FARMING ZONE (FZ)



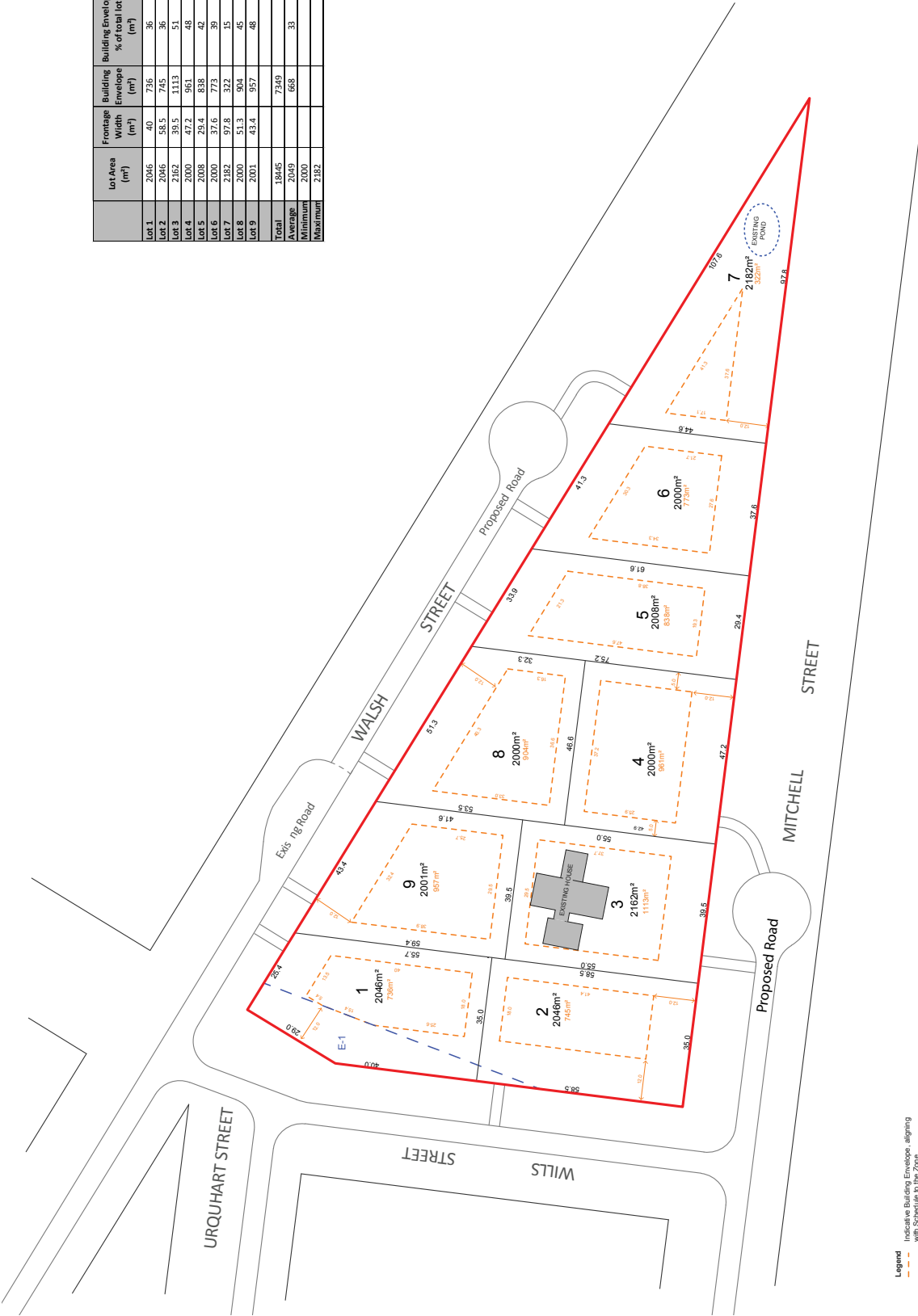
Note: labels for zones may appear outside the actual zone - please compare the labels with the legend.

Fig.4 Surrounding zoning.



Fig.5 Property location in relation to the Malmsbury township.

	Lot Area (m ²)	Frontage Width (m)	Building Envelope (m ²)	Building Envelope % of total lot (m ²)
Lot 1	2046	40	736	36
Lot 2	2046	38.5	745	36
Lot 3	2046	38.5	1113	51
Lot 4	2000	47.2	961	48
Lot 5	2008	29.4	838	41
Lot 6	2000	37.6	773	39
Lot 7	2000	32.2	904	45
Lot 8	2000	51.3	904	45
Lot 9	2001	43.4	957	48
Total	18465		7349	
Average	2049		668	33
Minimum	2000			
Maximum	2046			



DRAFT

Fig.6 Draft Final Concept Plan

Bushfire Planning and Building Controls

This section identifies the applicable planning and building controls that relate to bushfire and discusses their implication in the context of a planning scheme amendment to rezone the subject site, along with the proposed development of a 9 lot subdivision.

Clause 71.02-3 Integrated Decision Making

Clause 71.02-3 In relation to expectations regarding expanding settlement, this clause states that responsible authorities should integrate policies and balance conflicting objectives in favour of net community benefit and sustainable development. However, in bushfire affected areas, the protection of human life must be prioritised over all other policy considerations (Macedon Ranges Planning Scheme, 2023).

Clause 13.02-1S

Clause 13.02-1S has the objective *“To strengthen the resilience of settlements and communities to bushfire through risk-based planning that prioritises the protection of human life.”* (Macedon Ranges Planning Scheme, 2023).

This policy is applied to all planning and decision making for land:

- Within the Bushfire Prone Area (BPA)
- Subject to the Bushfire Management Overlay (BMO)
- Used or developed in a way that may create a bushfire hazard.

Strategies

The key strategies for prioritising the protection of human life are:

- *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.* (Macedon Ranges Planning Scheme, 2023).

As the proposal requires a planning scheme amendment for rezoning, the use and development control in Clause 13.02-1S requires the proposal assessment to:

- *‘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’* (Macedon Ranges Planning Scheme, 2023).

This report assesses the overall bushfire hazards to the subject site and identifies the bushfire protection measures that will be required to ensure the proposed subdivision and subsequent development can meet the objectives of Clause 13.02-1s by constructing future buildings to a BAL construction standard of a minimum BAL-12.5 while ensuring the surrounding vegetation will remain in a low threat condition to reduce radiant heat exposure to 12.5Kw/m².

Bushfire Prone Area

The entire site sits within the designated bushfire prone area (BPA) BPAs are areas likely to be subject to bushfire. Areas of higher risk are covered by the BMO, however the site and the surrounding Malmsbury township (including the adjoining farmland) are not subject to the BMO regulations.

In the BPA, the building act and its associated building regulations require bushfire protection standards for all Class 1, 2 and 3 buildings (and associated class 10A buildings).

The Victorian Building Regulations (2018) require that buildings constructed within the BPA to be built to a minimum Bushfire Attack Level of BAL-12.5 or higher, as determined by the site assessment or by any planning scheme requirement.

In a BPA, larger developments and certain vulnerable uses including Accommodation (see Section 2.2) are also required by Clause 13.02-1S Bushfire to:

- *‘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.* (Macedon Ranges Planning Scheme, 2023).

It is considered that the proposed rezoning and subdivision of the site into 9 lots would require the implementation of appropriate bushfire protection measures to ensure construction standards are applied to any proposed development, and that vegetation can be managed in accordance with the appropriate management requirements deemed commensurate to the risk.

The overall risk assessment has been undertaken for the site to clearly identify and demonstrate how the proposed rezoning, subdivision and development of the site can appropriately mitigate the bushfire risk, respond to, and comply with the applicable bushfire planning and building controls.

The Bushfire Management Statement has been prepared in response to the requirements of Clause 13.02 – Bushfire Management for subdivisions and settlements, and in accordance with the application requirements of Clause 53.02 – Bushfire Planning.

The statement contains three components:

- A **bushfire hazard landscape assessment** including a plan that describes the bushfire hazard of the general locality more than 150 metres from the site.
- A **bushfire hazard site assessment** including a plan that describes the bushfire hazard within 150 metres of the proposed development. The description of the hazard is prepared in accordance with Section 2.2.3 to 2.2.5 of AS3959:2018 Construction of buildings in bushfire prone areas (Standards Australia).
- A **bushfire management statement** describing how the proposed development responds to the requirements of Clause 13.02 and 53.02.

Environmental Significance Overlay

The Environmental Significance Overlay requires that any proposed development is required:

- *To identify areas where the development of land may be affected by environmental constraints.*
- *To ensure that development is compatible with identified environmental values.* (Macedon Ranges Planning Scheme, 2023).

In the BPA, developments are also required by Clause 13.02-1s to

- *Ensure new development can implement bushfire protection measures without unacceptable biodiversity impacts* (Macedon Ranges Planning Scheme, 2023).

The specific responses to the above planning and building controls are detailed in the body of this report.

Victorian Fire Risk Register

The Victorian Fire Risk Register - Bushfire (VFRR-B) is a process in which representatives from local government, fire services, public land managers, utilities and community groups map assets at risk from bushfire and assess the level of risk to the assets. (VFRR 2023) The risk is assessed by combining the local hazard threat, the site susceptibility and the likelihood of ignition and spread.

The subject site has been assessed as having a medium risk rating (priority 4). The site has adequate access and egress, and there is adequate water supply. The slope is flat and the ignitions frequency is low.

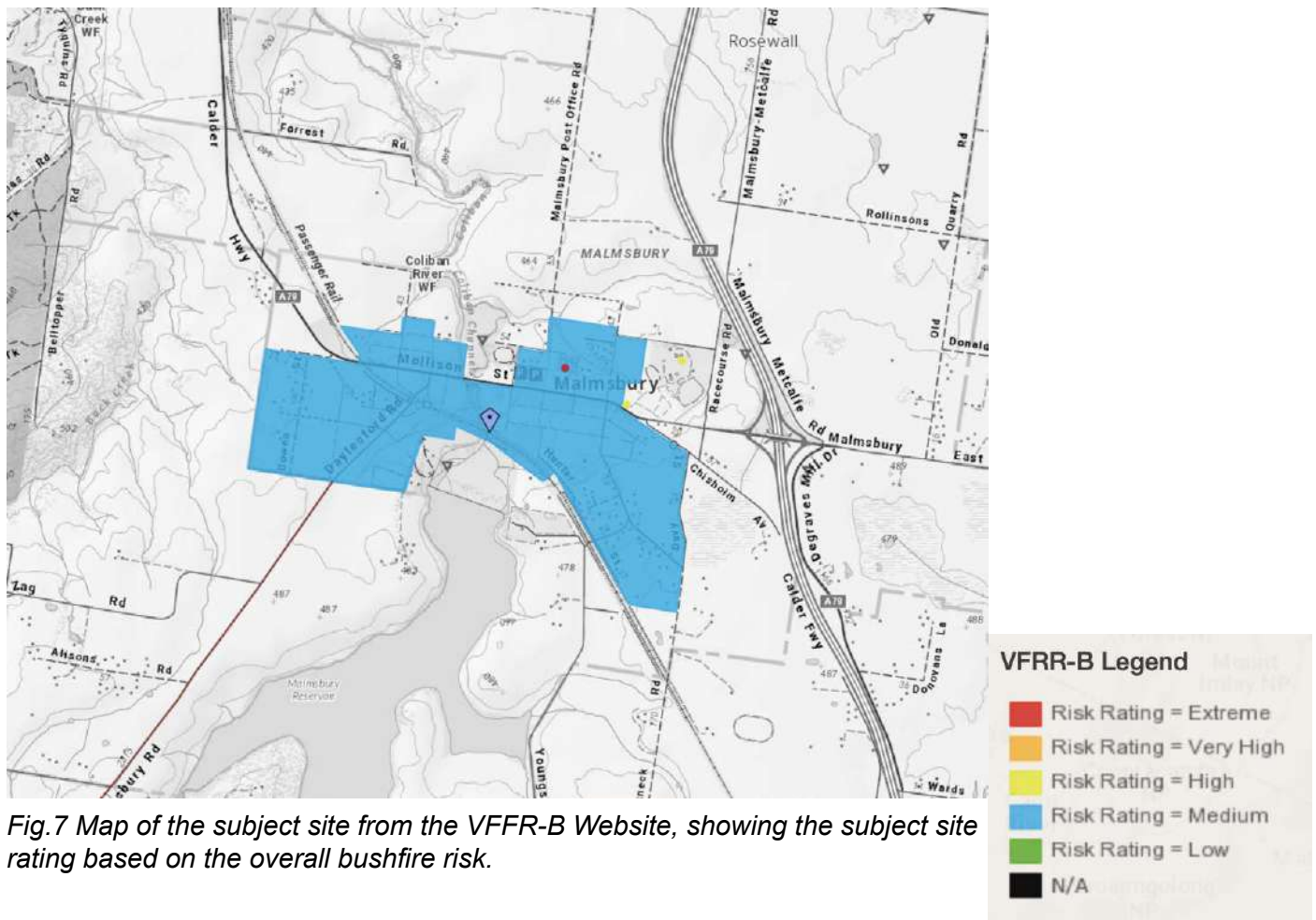


Fig.7 Map of the subject site from the VFRR-B Website, showing the subject site rating based on the overall bushfire risk.

Bushfire Landscape Assessment

The landscape hazard identification is used to identify the hazards posed by surrounding vegetation, topographic and climatic conditions. It typically looks at the broader variations in the conditions (within 20km surrounding the site) and conditions more local to the site (within 150m). The table below (DELWP technical guide 'Planning Applications in the Bushfire Management Overlay' 2017) describes four broader landscape types representing different landscape risk levels that inform more consistent decision making based on the overall risk.

Landscape Risk Typologies

The landscape scenario that represents this is Broader Landscape **Type 2**. The property sits within the township zone of Malmsbury and has residential development to the west and north. The property is within 2 minutes of the township centre. The vegetation beyond 150m surrounding the site is predominantly unmanaged or grazed grassland and low-threat vegetation (apart from the Fryers Ranges, 4km due west from the site). It is deemed that extreme bushfire behaviour is possible in the southern sector although the landscape is fragmented by the railway easement, private properties and roadways. These offer the potential for direct attack tactics to mitigate fire behaviour. It would be expected that grassland fire would be fast-moving and produce short but severe ember attack. Although bushfire can predominantly impact the site from this direction, the adjoining paddocks to the north and east offer some risk to the site through the potential for unmanaged grassland to be ignited by spotfires. Access the Malmsbury Botanic Gardens as the Nearest Place of Last Resort is readily available.

Broader Landscape Type 1	Broader Landscape Type 2	Broader Landscape Type 3	Broader Landscape Type 4
• There is little vegetation beyond 150 metres 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.	• 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.	• 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 located 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.	• The broader landscape presents an extreme risk. • Fires have hours or days to grow and develop before impacting. • Evacuation options are limited or not available.


I N C R E A S I N G R I S K

Expected Bushfire Behaviour

The property is bordered by urban development to the north and west, the open areas in this sector are managed in a low-threat condition (however there is no reasonable assurance that larger undeveloped lots will continue to be maintained in a low-threat condition). The broader northern and western sector is composed of the Malmesbury township zone, some open farming land and the Malmesbury Reservoir. Grassfire is the significant risk to the site, predominantly from the southwest sector, where steeper slopes leading up to the site from the Malmesbury Reservoir would increase the speed and intensity. Grassfire would be fragmented by the urban landscape by roads and the rail line in the southwest sector, leading to possible opportunities for suppression however this could prove to be difficult in more extreme fire conditions. Spotting potential from the Fryers Ranges to the northwest is a significant risk factor for the site, with heavy stands of Mess-mate stringybark Eucalypts and Box/Ironbark forests able to produce crowning and long-distance spotting under severe conditions. Fast moving grassfires are possible from the northeast and southeastern sectors through open farmland. These sectors are fragmented by the Freeway and associated road networks. The relatively gentle slopes in these sectors would improve suppression potential. Treed shelterbelts in the southwestern sector would increase short range spotting potential directly affecting the site and increase the risk of fire spreading over the mineral earth roadways, which can otherwise offer an effective break from grassfire. Mitchell St. and Wills St. offer an effective mineral earth break surrounding the site, significantly reducing radiant heat exposure to the site from the surrounding grasslands.

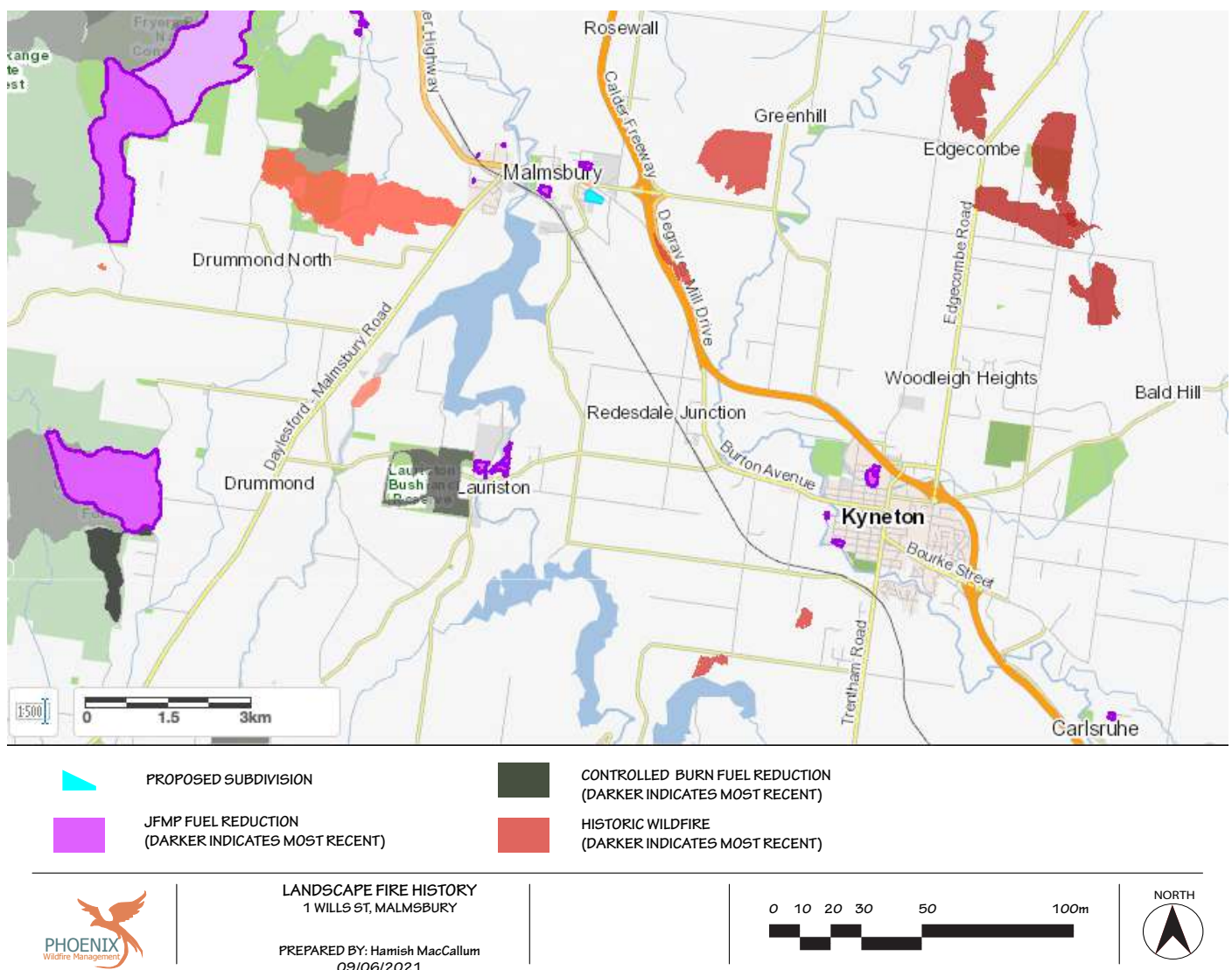


Fig.8 Fire History plan for the surrounding areas shows that frequent grassfire can impact the landscape surrounding Malmesbury

Bushfire Place of Last Resort

A 'Neighbourhood Safer Place' (also known as a 'Bushfire Place of Last Resort' or NSP-BPLR) is a place of last resort when all other bushfire plans have failed. BPLR's are:

- Locations that may provide some protection from direct flame and heat from a fire, but they do not guarantee safety.
- Not an alternative to planning to leave early or to stay and defend your property; they are a place of last resort if all other fire plans have failed.
- An existing location and not a purpose-built, fire-proof structure. It is important to know that many NSP-BPLRs are simply a clearing that provides separation distance from the bushfire hazard (e.g. forest).
- Not to be confused with Community Fire Refuges, Relief Centres, Recovery Centres or Assembly Areas, each of which have a different and specific purpose.
- Not an appropriate destination when leaving the area early.
- Not a place of shelter from other types of emergencies (e.g. to escape rising floodwaters or severe weather events).

Malmsbury has no formal Neighbourhood Safer Place, although the Malmsbury Botanic Gardens is considered a place of last resort.

The nearest formally designated Neighbourhood Safer Place is in Woodend, however Kyneton offers a township zone largely considered low-threat.



Fig.9 Route to nearest area of BAL-low, Malmsbury Botanic Gardens.

Joint Fuel Management Program

The Joint Fuel Management Program is a multi-agency initiative to identify and manage fire fuel objectives through a treatment program. There are currently 4 JFMP proposed fuel management treatments in Malmesbury.



Fig.10 JFMP fuel reduction works (in blue) to be conducted in Malmesbury.

Topography

AS 3959 methodology requires that the effective slope be identified to determine the BAL and commensurate defensible space and vegetation setbacks. Two broad types of slope apply:

- Flat and/or Upslope - land that is flat or on which a bushfire will be burning downhill in relation to the development.
- Downslope - land under the classified vegetation on which a bushfire will be burning uphill in relation to the development. Downslopes are grouped into 5° increments from 0° up to 20°.

Classified vegetation is the vegetation considered to be hazardous and prone to bushfire. The 'Effective slope' under the vegetation will increase fire severity and forward rate of spread, fire moving over flat land or downhill will generally burn and move with less intensity. Fire moving uphill (downslope from the site) will have significantly faster rate of spread and increased intensity increasing with the increase in slope.

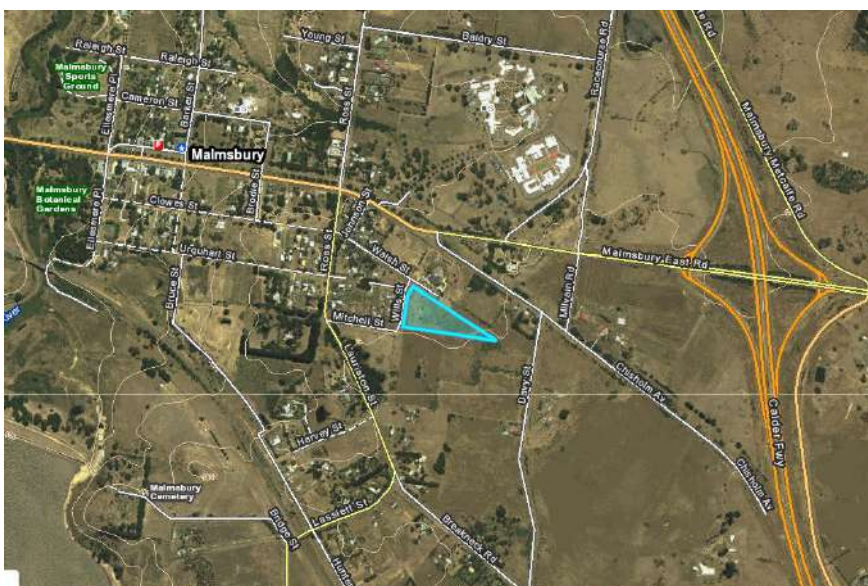


Fig.11 Surrounding landscape topography showing the property sits on the edge of a flat plateau to the southeast. Much of the site within 150m is considered flat or upslope.

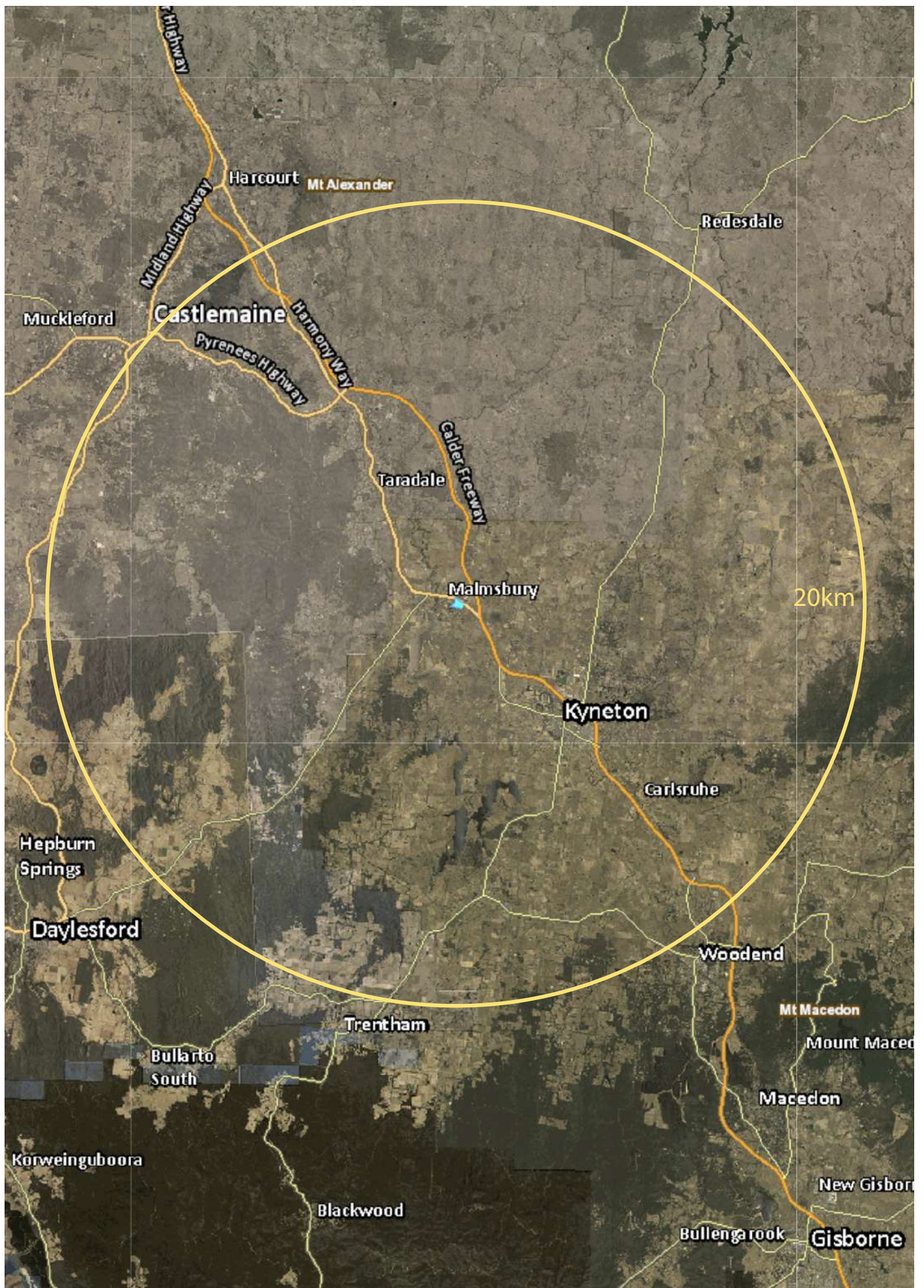


Fig.12 Surrounding broader landscape within 20km of the subject site. Much of the landscape is open grass-land apart from the Fryers Ranges to the northwest and the Wombat Forest to the southwest.

Bushfire Landscape Assessment

The landscape hazard identification is used to identify the hazards posed by surrounding vegetation, topographic and climatic conditions. It typically looks at the broader variations in the conditions (within 20km surrounding the site) and conditions more local to the site (within 150m).

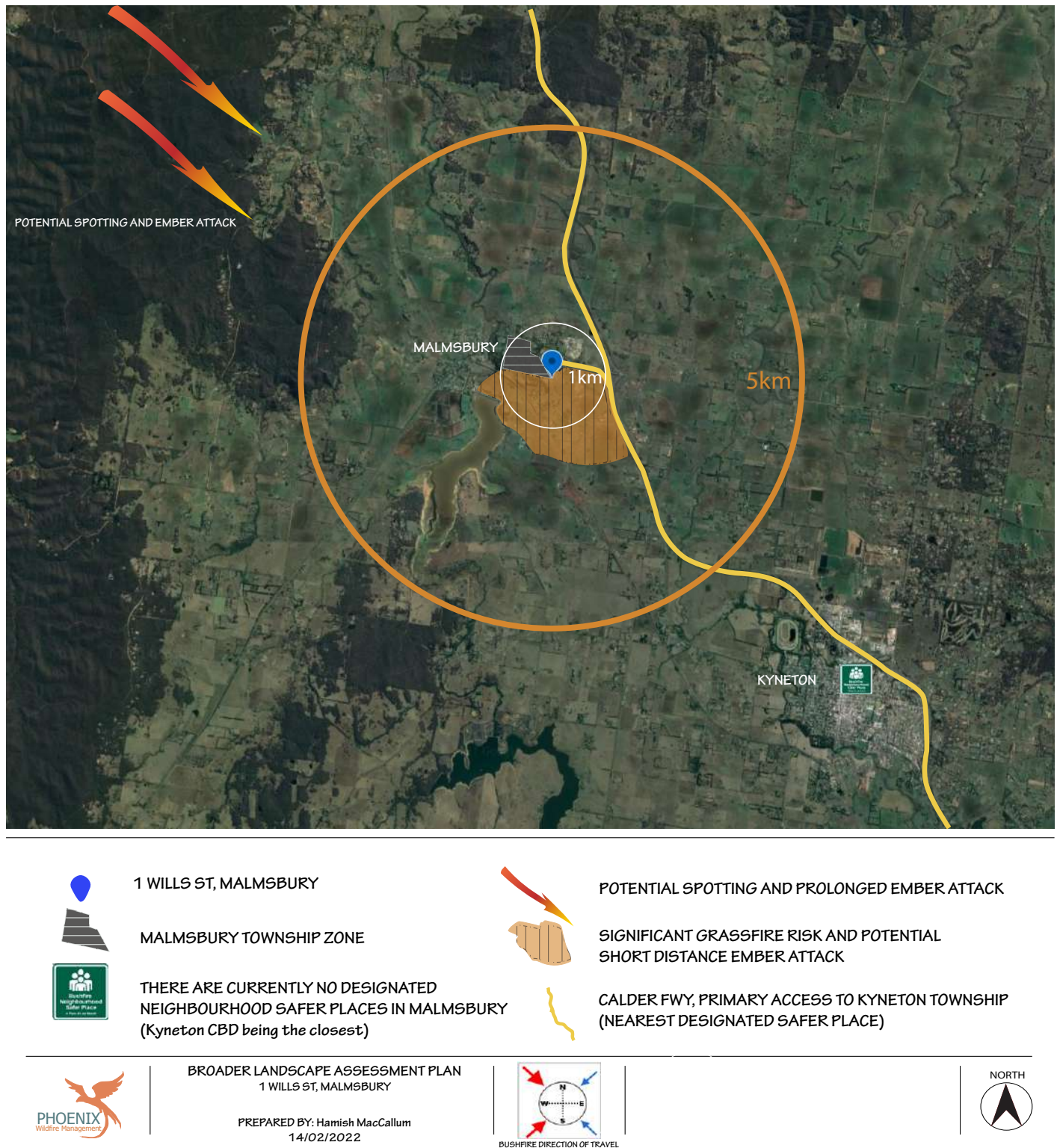
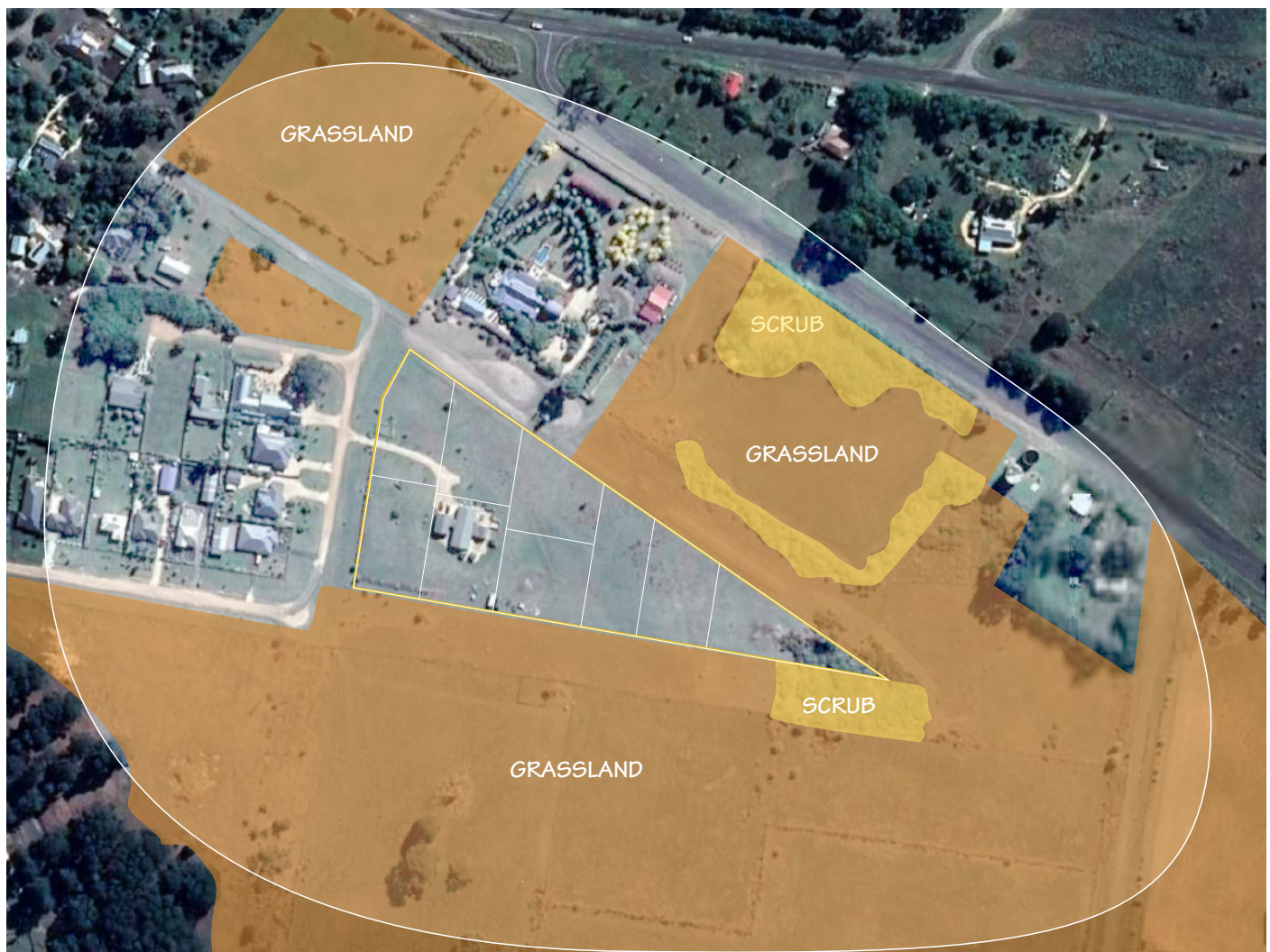


Fig.13 Broader Landscape Assessment Plan

Bushfire Hazard Assessment

Classify the vegetation within 150 metres of the proposed development in accordance with AS3959:2018 Construction of buildings in bushfire prone areas.



150m SITE ASSESSMENT
1 WILLS ST, MALMSBURY
PREPARED BY: Hamish MacCallum
16/10/2023

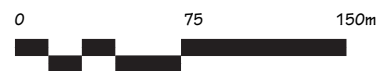


Fig.14 150m Site Hazard Assessment Plan. Note areas of Gorse scrub on and near the property boundary to the east on the aerial photograph have been removed. This modified vegetation has been assessed as grassland.

Surrounding Vegetation

In accordance with AS 3959-2018 Construction of buildings in bushfire prone areas, the classifiable vegetation types identified on the site are as follows:

- **Grassland Vegetation:** All open grasslands or cropping and pasture where tree cover does not exceed 10% cover.

The grassland vegetation surrounding the subject site is typical grazing pasture grassland. Many paddocks and road reserves show regular fuel management through slashing and mowing, however there can be no reasonable assurance that this management will be undertaken throughout the fire danger period.



Fig.15 Grassland (unmanaged) to the north of the subject site.



Fig.16 Grassland (managed) along the northern boundary of the subject site.

- **Low-Threat Vegetation:** Low-threat vegetation includes grasslands managed in a minimal fuel condition (<100 millimetres in height), maintained lawns, golf courses (fairways), maintained public reserves and parklands, vineyards, orchards, cultivated gardens, commercial nurseries, nature strips and windbreaks. A windbreak is defined as a single row of trees located on a property boundary or fence line or forming a curtilage to a residential dwelling.



Fig.17 Low-threat landscapes adjoining the subject site.

- **Shrubland Vegetation:** Shrubland and scrub are dominated by shrubs and smaller trees (such as Melaleuca or Banksia) that are typically non-eucalypt in nature. The key difference between shrubland and scrub is the height of vegetation at maturity. For the purposes of the Bushfire Management Overlay and AS 3959–2018, a height of 2 metres is used to differentiate between the two vegetation types. Scrub is defined as being greater than 2 metres high at maturity. In some cases the vegetation may be described as woodland, however, the continuous nature of the vertical fuel and the height of the dominant vegetation makes this scrub, rather than woodland. Plantations of tea-tree would also be described as scrub.

The shrubland vegetation near and adjoining the subject site is predominantly Gorse and mixed woody weeds, including some Hawthorn. The areas have been treated and some areas of Gorse have been cleared. All areas of Gorse are less than 0.25 Ha. in total area and will likely not significantly increase fire behaviour affecting the site.



Fig.18 Gorse shrub has been cleared from the property in the eastern sector.



Some Gorse remains in the eastern sector on the road reserve of Mitchell and Walsh St.

Development setbacks and BAL construction standards

In this section it will be demonstrated how the subdivision and proposed development will respond to the identified bushfire risk.

A key planning strategy identified in Clause 13.02-1S directs population growth and development to locations assessed as having RHF of less than 12.5kW/m^2 . This strategy is aimed at ensuring future population growth will not increase bushfire risk by 'directing population growth and development to low risk locations and ensuring the availability of, and safe access to, areas where human life can be better protected from the effects of bushfire'.

The subject site is bounded by a road reserve that is covered in vegetation that is currently managed by the present owners and developers to a minimum-fuel condition. Future management of the road reserve vegetation will need to be reasonably assured to be maintained in a low-threat condition throughout the fire danger period. The proposed subdivision lots are serviced by a proposed access road and creation of a nature strip that would be maintained by the adjoining lots, there could be reasonable assurance that this would provide an excludable low-threat buffer to lots 1, 5, 6, 8 and 9 to the north and lots 2 and 3 to the south. The most appropriate way to ensure RHF exposure of less than 12.5kW/m^2 is to apply the Defensible Space bushfire protection measures outlined in Clause 53.02 -4.2 'Defendable Space and Construction Objectives'.

It is considered that development can appropriately prioritise the protection of human life, and meet the objectives of Clause 13.02-1S, by constructing future buildings to the appropriate BAL construction standard with defensible space, to reduce modelled radiant heat to an acceptable level.

The residential building standard for bushfire protection aims to improve the ability of a building to withstand a bushfire attack. This provides greater protection for the occupants who may be sheltering inside while the fire front passes.

The BAL takes into consideration a number of factors, including the Fire Danger Index, the slope of the land, types of surrounding vegetation and its proximity to any building. (VBA, 2023)

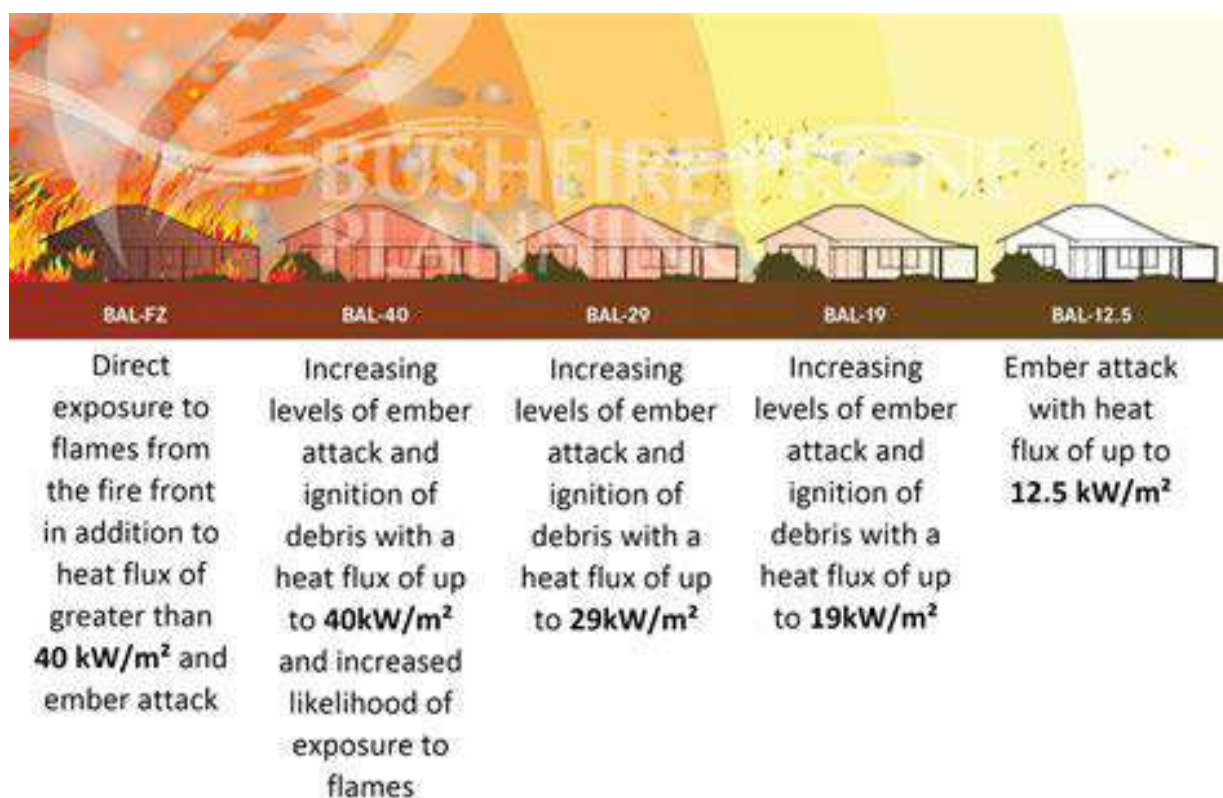


Fig.19 BAL exposure chart (CFA 2023).

What is defensible space?

Defendable space is an area of land around a building where vegetation (fuel) is modified and managed to reduce the effects of flame contact and radiant heat associated with a bushfire. Defendable space is one of the most effective ways of reducing the impact of bushfire on a building.



Cross section of defendable space

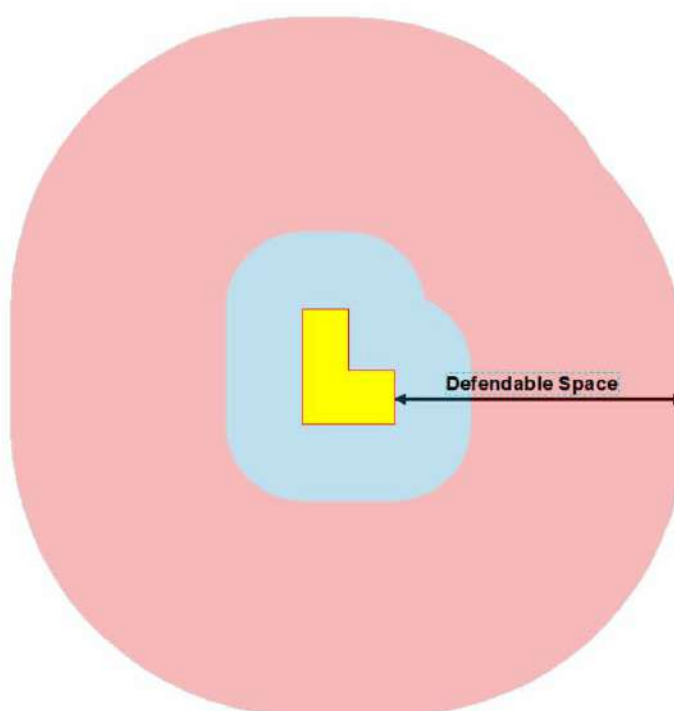


Fig.20 Defendable space definition, (CFA 2023).

BAL construction standards and defendable space distances (from Table 2 to Clause 53.02-5)				
Vegetation	Slope	Direction	BAL construction standard	Defendable space distance (m)
Grassland	Flat/ Upslope	North South East West	BAL-12.5	19m

Bushfire Management Statement

53.02-4.4 – 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 zone for residential or rural residential purposes.

Approved Measure (AM)5.2 – Bushfire Construction and Defendable Space

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, B or C of Table 2 to Clause 53.02-5 for a subdivision that creates less than 10 lots.

Approved Measure (AM) 2.1 - Landscape

Requirement

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

The provision of defendable space vegetation setbacks would be deemed to be acceptable to mitigate the risk from grassfire. Applying BAL-12.5 construction standards to all development as a minimum requirement will ensure buildings are resilient to ember attack and modelled radiant heat flux of less than 12.5Kw/m².

Approved Measure (AM) 2.2 - Siting

Requirement

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

- **The maximum separation distance between the building and the bushfire hazard**

The primary bushfire hazards (grassland and small areas of scrub) will be separated by the construction of Walsh Street and Mitchell Street for lots 1,2,3 8 and 9. Walsh Street would provide reasonable setback to the north for lots 5 and 6. To achieve reasonable setback from the bushfire vegetation on the remaining lots, the application of defendable space vegetation management will achieve a modelled radiant heat flux of less than 12.5Kw/m².

- **The building is in close proximity to a public road**

Each lot in the subdivision is located within 12 metres of either Mitchell Street or Wills Street.

- **Access can be provided to the building for emergency service vehicles**

The proposed access to the proposed lots along Walsh St and Mitchell St can comply with the requirements of emergency vehicle access.

Defendable Space and Construction

- **Each lot in the subdivision is capable of meeting the requirements for:**

A building used for a dwelling (including an extension or alteration to a dwelling), a dependant person's unit, industry, office, retail premises, service station or warehouse provides the defendable space in accordance with Column A, B, C of Table 2 to Clause 53.02-5 and is managed in accordance with Table 6 to Clause 53.02-5 wholly within the title boundaries of the land, or by agreement on adjoining land. As the proposed subdivision has building envelopes with setbacks of 12m from the property boundary, part of the defendable space will fall on the road reserve.

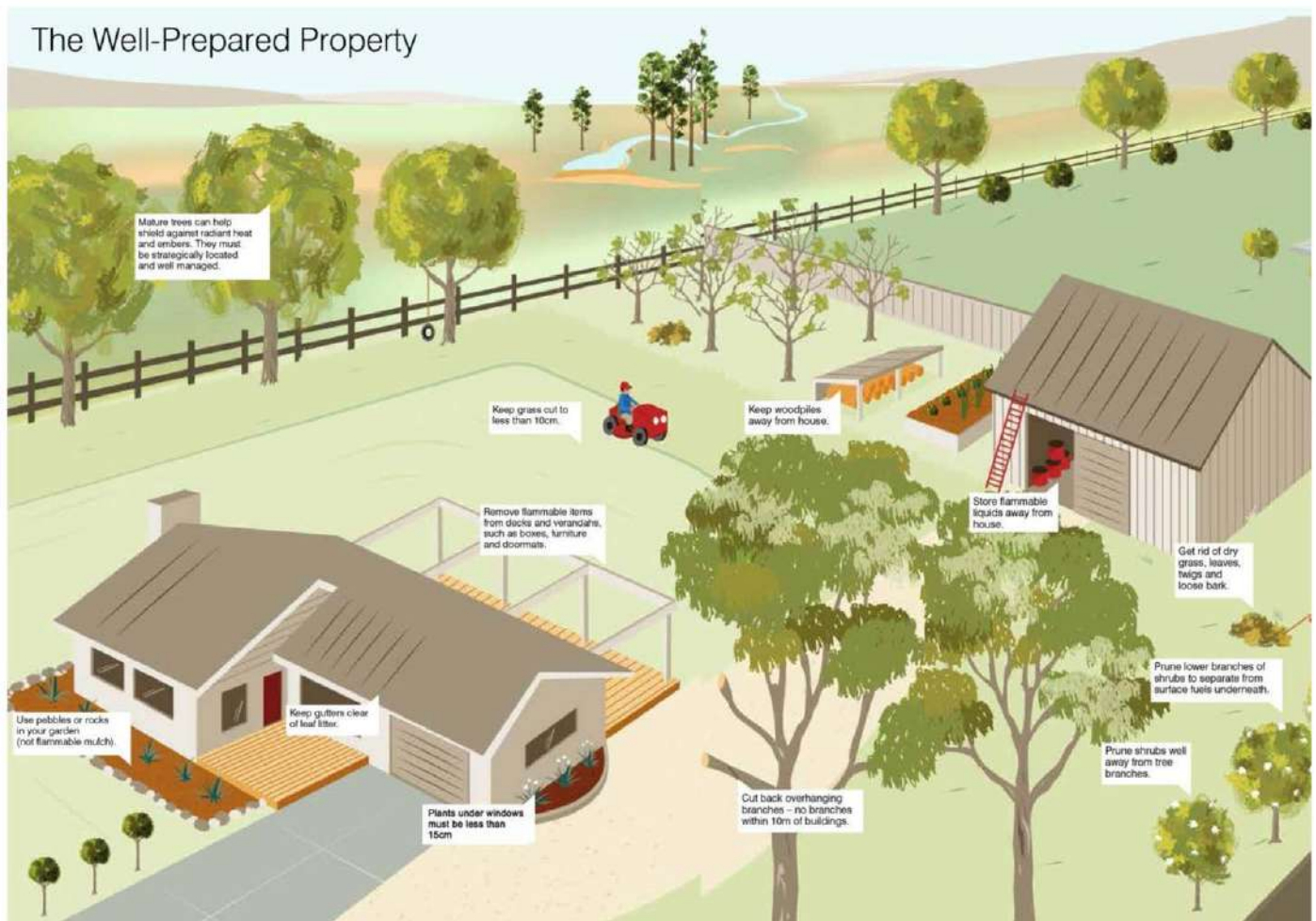
Lots 1-9
Buildings will be provided with defendable space in accordance with Table 2 column A, Clause 53.02. The defendable space distance required is 19 metres.
A building is constructed to the bushfire attack level:
That corresponds to the defendable space provided in accordance with Table 2 to Clause 53.02-5. The building will be constructed to BAL-12.5

As defendable space for the lots will fall over the property boundary, reasonable assurance will be required to ensure vegetation will be maintained in a low-threat condition. Lots 1.2 3 8 and 9 will be bounded by the proposed access roads to the north and south of the subject site, with a nature strip of vegetation adjoining the property. It could be assured that the ongoing management of the roads and nature strip will provide the appropriate vegetation management to the appropriate defendable space standards.

The remaining lots will require ongoing permission from the local Council to access the road reserve for the purpose of vegetation management in accordance with defendable space objectives. It is recommended that a Section 173 agreement or another contractual arrangement for the proposed lots between Macedon Ranges Shire and the lot owners be applied to ensure defendable space objectives can be met. This can be achieved by creation of the nature strip (as per the current landscape plan, see fig.24) where the vegetation management of the nature strip will be the responsibility of the future lot owner.

Table 6 of Clause 53.02-5 - Vegetation management requirement:

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



Approved Measure (AM) 4.1 – Water Supply and Access

Water Supply Requirement

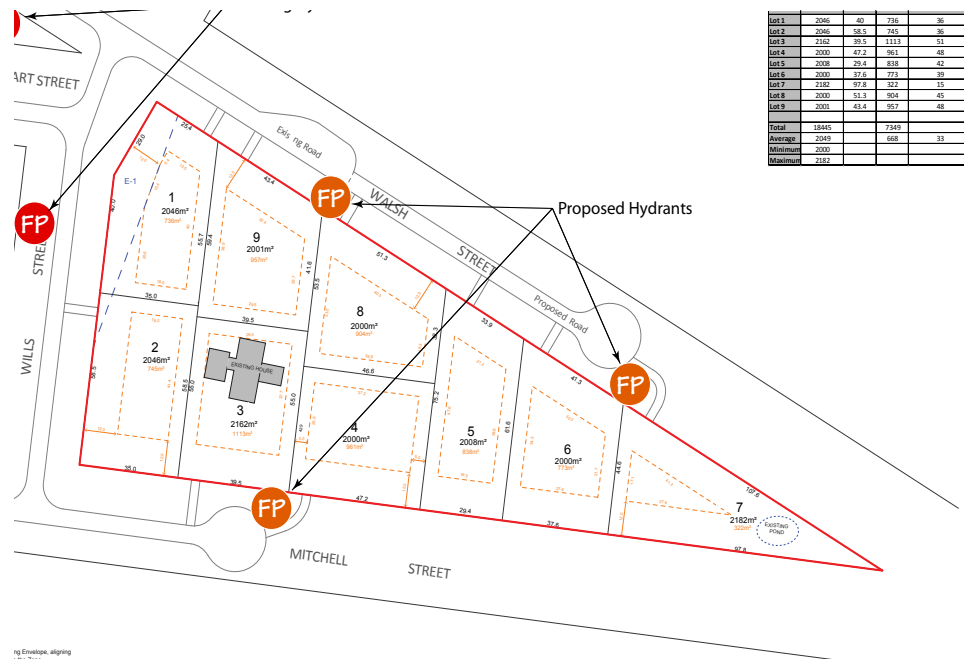
Given the identified potential for significant ember attack across the site, the subdivision should have sufficient volume of water to extinguish small spot fires before they have the chance to develop into a larger fire that may fully involve a building. Provision of hydrants to the subdivision will ensure adequate water supply for emergency vehicle firefighting purposes.

The provision of hydrants as follows

- Above or below ground operable hydrants must be provided. The maximum distance between these hydrants and the rear of all building envelopes (or in the absence of building envelopes, the rear of the lots) must be 120 metres and the hydrants must be no more than 200 metres apart. These distances must be measured around lot boundaries.

- The hydrants must be identified with marker posts and road reflectors as applicable to the satisfaction of the Country Fire Authority.

Note –CFA’s requirements for identification of hydrants are specified in ‘Identification of Street Hydrants for Firefighting Purposes’ available under publications on the CFA web site (www.cfa.vic.gov.au)



Access Requirement

The extension of Walsh St and Mitchell St will need to meet the access requirements of AM 4.1

Roads must be constructed to a standard so that they are accessible in all weather conditions and capable of accommodating a vehicle of 15 tonnes for the trafficable road width.

- The average grade must be no more than 1 in 7 (14.4%) (8.1 degrees) with a maximum of no more than 1 in 5 (20%) (11.3 degrees) for no more than 50 meters. Dips must have no more than a 1 in 8 (12%) (7.1 degree) entry and exit angle.
- Curves must have a minimum inner radius of 10 metres.
- Have a minimum trafficable width of 3.5 metres and be clear of encroachments for at least 0.5 metres on each side and 4 metres above the access way.
- Roads more than 60m in length from the nearest intersection must have a turning circle with a minimum radius of 8m (including roll-over kerbs if they are provided) T or Y heads of dimensions specified by the CFA may be used as alternatives.

Access

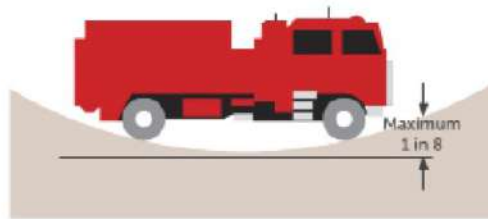
Where the length of access is greater than 30 metres the following design and construction requirements apply:

- 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.
- Dips must have no more than a 1 in 8 (12.5 per cent) (7.1 degrees) entry and exit angle.

Width



Dips and gradients



Encroachments

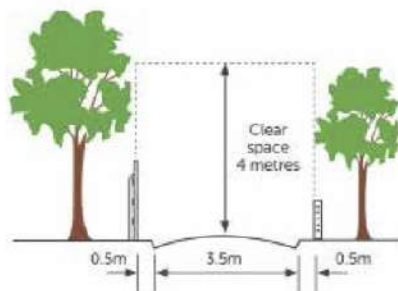


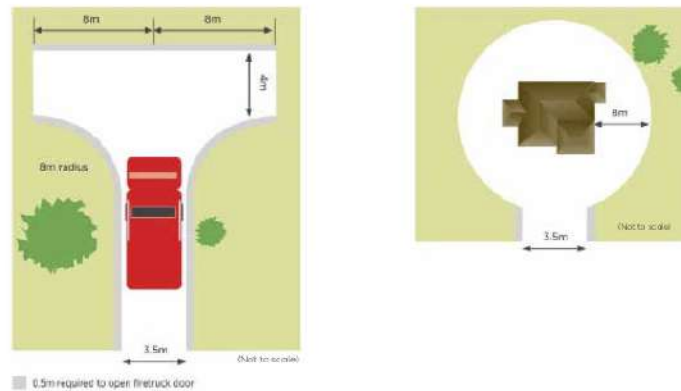
Fig.21 Access requirements (Technical Guide | Planning Permit Applications – Bushfire Management Overlay DELWP 2017)

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.

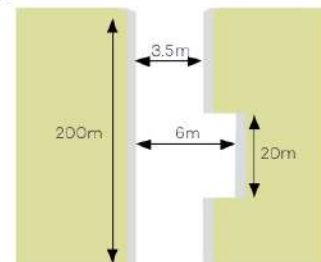


Fig.22 Requirements for access over 100-200m (Technical Guide | Planning Permit Applications – Bushfire Management Overlay DELWP 2017)

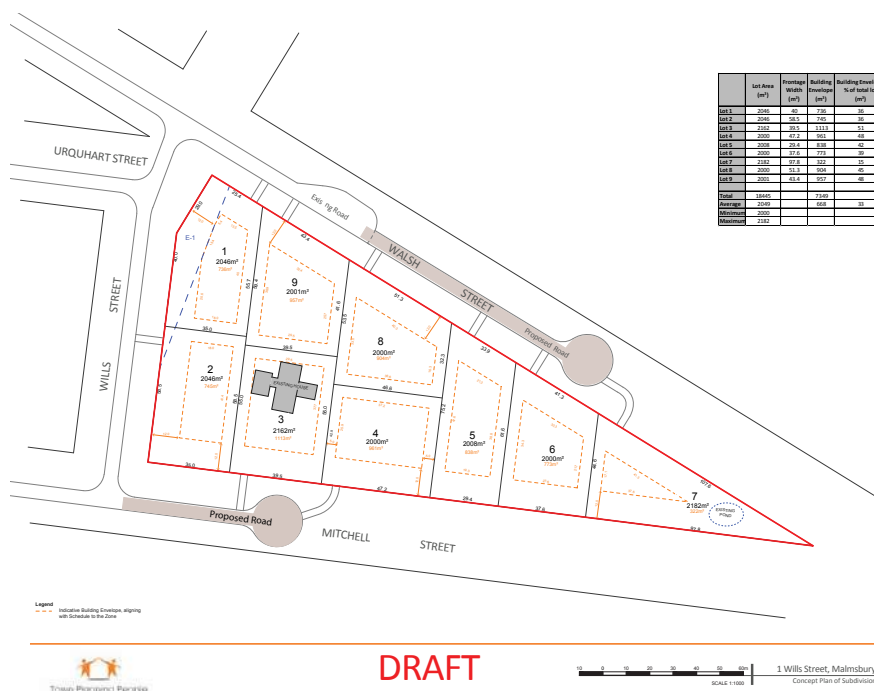


Fig.23 Plan showing proposed access to the lots via Walsh St. and Mitchell St.

Streetscaping and Landscaping

Development within the 'Designated Bushfire Prone Area' should be supported by recommendations on landscaping and vegetation that will minimise the risk or increase the bushfire hazard to the site.

The risk to future development from bushfire can be mitigated by:

- Ensuring setback from hazardous vegetation.
- Appropriate access and egress requirements.
- Ensuring any vegetation to be re-established does not create an increase in the hazard exposure to existing residents.
- Develop and maintain the streetscaping as a low-threat landscape to reduce the risk to surrounding residents.

The draft landscape plans submitted as part of the application indicates the placement of street trees for the proposed development. It is recommended from a bushfire perspective that the trees in 'option 2' be considered as preferable. The deciduous trees indicated in 'option 2' have the characteristics suitable for bushfire resilience. The deciduous trees have wide leaves with a high mineral content, making them suitable to withstand radiant heat and filter embers. The leaves fall predominantly in Autumn following the fire danger period and they rapidly decompose over the winter period, leaving less fire prone fuel to accumulate.

However, if native plantings are preferred, the selection noted on the draft plan in 'option 1' are considered excellent fire-resilient natives. However, they all produce year-round litter that is slower to decompose and will result in higher levels of ground fuels than the deciduous trees. The Yellow-Box tends to also be highly variable with bark shedding and can lead to higher fire fuel accumulation. Additionally, only low bark hazard street trees should be specified as acceptable for canopy tree planting.



Fig.24 Draft landscape plan.

Clause 13.02-1S Bushfire

Strategies

This section outlines more specific responses to the strategies for addressing the planning scheme amendment for rezoning, and for subdivision developments stipulated in Clause 13.02-1S.

Protection of human life Strategies

Give priority to the protection of human life by:

Prioritising the protection of human life over all other policy considerations.

It is considered that human life can be protected over all other policy considerations by applying the appropriate building and planning regulations for construction in the BPA, along with the enhanced bushfire protection measures of:

- Providing defensible space to ensure appropriate setbacks from the classified vegetation will ensure that RHF will not exceed 12.5kW/m² in accordance with a key settlement planning strategy of Clause 13.02-1S.
- Providing above or below ground hydrants within 120 metres of all lots.

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

If the proposed development meets the required 19m setback of from the classified vegetation and ensures the development is able to meet the respective BAL 12.5 construction standards and defensible space requirements, the risk can be deemed to be mitigated.

- The property sits within the identified area of the Township Framework Plan as being suitable for the development of vacant lots.

Reducing the vulnerability of communities to bushfire through the consideration of bush-fire risk in decision making at all stages of the planning process.

This report provides the framework to consider community resilience to bushfire risk throughout the planning process.

The proposed subdivision is in keeping with this priority through considering protection measures such as:

- Directing development to locations of lower bushfire risk.
- Carefully considering development in locations where there is significant bushfire risk that cannot be avoided.
- Avoiding development in locations of extreme bushfire risk.
- Avoiding development in areas where planned bushfire protection measures may be incompatible with other environmental objectives' (CFA, 2015).

The subdivision proposal is considered to be able to meet the objectives to prioritise protection of human life by implementing the strategies laid out in Clause 13.02-1S. The subdivision is not in a precinct considered extreme bushfire risk and the bushfire protection measures that are applied to the development are compatible with other defined environmental objectives.

Bushfire hazard identification and assessment Strategies

This report has identified the bushfire hazards for the site and outlined the appropriate risk assessment strategies by:

Applying the best available science to identify vegetation, topographic and climatic conditions that create a bushfire hazard.

This report has used the accepted methodologies of AS 3959-2018 to identify vegetation, topographic and climatic conditions that create a bushfire hazard. Additionally, guidance has been provided by 'Planning Practice Note 64 Local planning for bushfire protection' (DEWLP, 2015), Planning Permit Applications Bushfire Management Overlay, Technical Guide (DEWLP, 2017), Vegetation Classes, Victorian Bushfire Management Overlay (CFA 2014)

Considering the best available information about bushfire hazard including the map of designated bushfire prone areas prepared under the Building Act 1993 or regulations made under that Act.

The extent of the BPA mapping has been mapped in relation to the subdivision site (see Fig.25) based on mapping available through VICPLAN (Version 2.4.4, 2023)



Fig.25 Map showing the extent of the BPA coverage surrounding the subject site (VICPLAN 2023) .

Considering and assessing the bushfire hazard on the basis of:

- Landscape conditions - meaning the conditions in the landscape within 20 kilometres and potentially up to 75 kilometres from a site;
- Local conditions - meaning conditions in the area within approximately 1-5 kilometre from a site;
- Neighbourhood conditions - meaning conditions in the area within 400 metres of a site; and
- The site for the development.

The hazard has been assessed and described at the regional, municipal and local scale. At the local (site) scale the assessment follows the BMO methodology of classifying vegetation and topography within 150m of the development boundaries. At the landscape scale a 20km and 5km radius of the site has been applied.

Applying the Bushfire Management Overlay in planning schemes to areas where the extent of vegetation can create an extreme bushfire hazard.

The BMO does not cover the subject site and has not been applied.

Consulting with emergency management agencies and the relevant fire authority early in the process to receive their recommendations and implement appropriate bushfire protection measures.

FRV have responded to the initial proposal and recommendations have been provided. Further consultation has been requested during the revision process.

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.

The applicable planning and building regulations relevant to the BPA and BMO have been used in conjunction with DELWP advisory and practice notes to apply the appropriate bushfire protection measures in this report.

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

- The bushfire risk to the proposed development can be deemed to be acceptably mitigated if the objectives and strategies set out in this report are complied to in accordance with AS 3959-2018 and the building regulations.

Settlement and Planning Strategies

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, 2018).

The proposed subdivision is on the per-urban fringe of Spring Gully. The northern sector borders urban development that extends to the Bendigo CBD. The southern sector has some development but is primarily part of the Greater Bendigo Regional Park. Although the northern lot will achieve less than 12.5 kW/m², the southern lots will need enhanced protection measures to ensure the landscape risk can be appropriately mitigated. Although much of lot 4 sits within the necessary setbacks for achieving BAL-29, the building envelope extends 4m further to the south to allow a reasonable sized building envelope. Therefore it would be commensurate with the risk to increase the protection of any future development on this site to those commensurate with BAL-40, along with the enhanced protection measure of extending Defendable Space 50 metres, or to the property boundary (whichever is the lesser).

Ensuring the availability and safe access to areas assessed as BAL-LOW rating under AS 3959-2018 Construction of Buildings in Bushfire Prone Areas (Standards Australia, 2018) where human life can be better protected from the effects of bushfire.

The site is within 50m of areas considered to be BAL-low under AS 3959-2018. The main township centre of Malmsbury is within 2 minutes of the site.

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.

By the application of mandatory vegetation management set out in Table 6 of Clause 53.02-5, there can be reasonable assurance that bushfire risk to existing and future residents, property and community infrastructure will not increase as a result of future land use and development

Assessing alternative low risk locations for settlement growth on a regional, municipal, settlement, local and neighbourhood basis.

No alternative low risk development locations have been identified or assessed as part of this study.

Assessing and addressing the bushfire hazard posed to the settlement and the likely bush-fire behaviour it will produce at a landscape, settlement, local, neighbourhood and site scale, including the potential for neighbourhood-scale destruction.

This report appropriately assesses and addresses the risk posed to the settlement and the overall bushfire hazard to the local and site scale.

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 3959-2018'

The identified vegetation setbacks of 19m from the proposed building envelopes will ensure that radiant heat exposure will be kept below 12.5Kw/m² and therefore any proposed development as part of this report will meet the required BAL-12.5 rating.

Achieving no net increase in risk to existing and future residents, property and community infrastructure, through the implementation of bushfire protection measures and where possible reduce bushfire risk overall.

There will be no increase in risk to the existing and future residents or community infrastructure provided:

- Future buildings are to be set back from the classified vegetation to enable the appropriate BAL construction standards.
- An appropriate water supply can be provided, by provision of above or below hydrants within 120 metres of each lot.
- Appropriate access and egress for emergency vehicles is provided via a conventional residential access driveway accessible from the extension of Walsh St and Mitchell St.
- Implementing defendable space requirements will ensure there is a net decrease in bushfire risk from unmanaged vegetation achieving a modelled radiant heat flux of less than 12.5Kw/m².

Biodiversity and 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 as areas of biodiversity.

The site was assessed to determine the existing flora and fauna and its biodiversity values (see relevant report attached to the planning application).

- The site is predominantly comprised of exotic pasture grasses and herbaceous weeds. A small handful of Kangaroo Grass (*Themeda Triandra*) is remnant amongst the pasture, larger stands exist within the road reserve. These stands would remain as part of the roadside vegetation and will likely persist with the application of vegetation management necessary to maintain bushfire mitigation measures.
- There were no examples of native fauna on the site.

It is expected that future development on this site will have a positive effect on biodiversity through the implementation of landscape and streetscaping appropriate to the development requirements. The retention of Kangaroo Grass in the remnant roadside vegetation is considered to be conducive to implementation of the appropriate bushfire protection measures (Kangaroo grass is a summer-active C4 perennial grass with reasonable fire resilience and the capacity to survive in maintained lawns). It would be expected that implementing the bushfire protection measures will not impact biodiversity on the site.

EVC 55: Plains Grassy Woodland - Central Victorian Uplands bioregion

LF Code	Species typical of at least part of EVC range	Common Name
T	<i>Acacia melanoxylon</i>	Blackwood
T	<i>Exocarpos cupressiformis</i>	Cherry Ballart
MS	<i>Acacia pycnantha</i>	Golden Wattle
MS	<i>Acacia paradoxa</i>	Hedge Wattle
SS	<i>Pimelea humilis</i>	Common Rice-flower
SS	<i>Lissanthe strigosa ssp. subulata</i>	Peach Heath
SS	<i>Hibbertia stricta s.l.</i>	Upright Guinea-flower
SS	<i>Tetradlea ciliata</i>	Pink-bells
PS	<i>Acrotriche serrulata</i>	Honey-pots
PS	<i>Astroloma humifusum</i>	Cranberry Heath
MH	<i>Gonocarpus tetragynus</i>	Common Raspwort
MH	<i>Poranthera microphylla</i>	Small Poranthera
MH	<i>Hypericum gramineum</i>	Small St John's Wort
SH	<i>Hydrocotyle laxiflora</i>	Stinking Pennywort
SH	<i>Drosera whittakeri ssp. aberrans</i>	Scented Sundew
SH	<i>Solenogyne dominii</i>	Smooth Solenogyne
SH	<i>Opecularia ovata</i>	Broad-leaf Stinkweed
LTG	<i>Austrostipa mollis</i>	Supple Spear-grass
LTG	<i>Austrostipa rudis ssp. nervosa</i>	Veined Spear-grass
LNG	<i>Lepidosperma longitudinale</i>	Pithy Sword-sedge
MTG	<i>Lomandra filiformis</i>	Wattle Mat-rush
MTG	<i>Schoenus apogon</i>	Common Bog-sedge
MTG	<i>Themeda triandra</i>	Kangaroo Grass
MTG	<i>Dianella revoluta s.l.</i>	Black-anther Flax-lily
MNG	<i>Microlaena stipoides var. stipoides</i>	Weeping Grass
GF	<i>Pteridium esculentum</i>	Austral Bracken
Recruitment:		
Continuous		

Fig.26 Species list of typical species found in remnant vegetation near the site. No species other than *Themeda triandra* were identified on the site.

Conclusion

The proposed rezoning of the site from Farming Zone to Neighbourhood Residential Zone has been assessed against the relevant bushfire policies contained in the planning scheme. The proposed subdivision of 1 Wills Street have been assessed against the relevant bushfire requirements of Clause 13.02-1S Bushfire Planning, Clause 44.06 Bushfire Management Overlay (BMO) and associated Clause 53.02 Bushfire Planning in the Macedon Ranges Shire Planning Scheme.

This report has concluded:

- The proposed rezoning of site from Farming Zone to Neighbourhood Residential Zone can be achieved through a planning scheme amendment without increasing the bushfire risk to the Malmsbury township.
- The proposed subdivision development can accommodate the required setbacks to achieve BAL-12.5 building standards, if defendable space vegetation management can be undertaken on the road reserve of Mitchell Street and Walsh Street.
- Can appropriately prioritise the protection of human life and meet the objectives of Clause 13.02 by ensuring future development will not be exposed to a RHF above 12.5kW/m^2 , which is commensurate with BAL 12.5 construction standards .
- Risk can be deemed to be appropriately mitigated, such that the development can proceed if the objectives and strategies set out in this report are successfully implemented.

Site Photos



Fig.27 View on the site to the west towards the existing dwelling



Fig.28 View to the southwest from the site



Fig.29 View to the north and neighbouring properties



Fig.30 View to the neighbouring urban development to the west



Fig.31 View to the west



Fig.32 View to the northwest and Malmesbury Township



Fig.33 Aerial view to the south, the existing house to the right of the photo



Fig.34 View looking west from the east of the property



Fig.35 Aerial view looking to the southeast



Fig.36 Aerial view to the east



Fig.37 Aerial view to the northeast



Fig.38 Aerial view to the north, the existing house is in the foreground



Fig.39 Aerial view to the northeast looking over the property



Fig.40 Aerial view to the northwest and Malmsbury



Fig.41 View to the west



Fig.42 View to the west