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BUSHFIRE ASSESSMENT REPORT

Reconfiguring a Lot – 1 into 3 Lot Subdivision

185 Postle Street, MOUNT RASCAL

Prepared on behalf of Steinmuller Property Pty Ltd
For the Toowoomba Regional Council

YAR Ref: YEP2025116_R1Fv4

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YARRAMINE CONSULTING PTY LTD



Nigel Kimball
Managing Director &
Principal Environmental Scientist
17 January 2026

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1 Introduction

Yarramine Environmental (Yarramine) was engaged by Steinmuller Property Pty Ltd to prepare a Bushfire Assessment Report in support of a Reconfiguring a Lot Development Application to the Toowoomba Regional Council (TRC) for a 1 into 3 lot subdivision at 185 Postle Street, MOUNT RASCAL, on land formally described as Lot on Plan 15SP295684 (hereafter referred to as 'the site').

The site has been designated on the Toowoomba Regional Planning Scheme (TRPS) *Bushfire Hazard Overlay* as containing "bushfire prone" land. Accordingly, an assessment against the provisions of the *Bushfire Hazard Overlay Code* is required in support of the development application. The code requires the preparation of a Bushfire Management Plan to demonstrate the proposed development is designed in such a way that minimises the number of people and properties subject to bushfire risk.

Having been identified as "bushfire prone" by TRC, the National Construction Code (NCC), ABCB (2019) specifies functional performance requirements for bushfire, and compliance with AS3959-2018 *Construction of buildings in bushfire-prone areas* for future Class 1, 2 or 3 buildings on the site.

Although this report has been prepared specifically to address requirements of TRC's *Bushfire Hazard Overlay Code* and does take into consideration NCC requirements applicable to future buildings on the site, this report should not be used to satisfy building design requirements applicable at building construction stage. The recommendations of this report however will determine future building location and design options.

1.1 Report Objectives

This Bushfire Assessment Report has been prepared generally in accordance with TRC's *Bushfire Hazard Overlay Code*, requirements of AS3959-2018, and vegetation clearing constraints. The report:

- Provides an assessment of the bushfire threat and subsequent risk to the proposed development.
- Identifies and maps Bushfire Attack Level (BAL) requirements (BAL contours) for future buildings, in association with objectively determined setbacks and radiant heat shielding design elements to determine the suitability of the proposed development given its intended use.
- Details bushfire mitigation measures including building requirements, building location envelopes, fuel management, access, and water requirements; consistent with legislative requirements and the general need to reduce the risk to life and property in bushfire prone environments.

1.2 Assessment Limitations

Site-specific bushfire assessments comprise a necessarily limited field survey scope/timeframe undertaken at a specific point in time; therefore, (due to factors including climatic and seasonal variation) they may not result in a complete representation of bushfire risk. As bushfire risk is also substantially influenced by land management practises undertaken at the time of the assessment and the proposed future use including its nature and intensity, the results of the bushfire assessment are limited to a specific set of circumstances.

In this regard, conclusions and recommendations stated herein are provided in good faith and of the understanding that conclusions and recommendations reached are only

applicable to the proposed development as described. This report should not be used for further or future development of the site other than as described herein.

Changes to circumstances, including the passage of time and subsequent changes in fuel loads dependent on both weather conditions and vegetation management activities, together with changes in subdivision design will necessitate a reassessment of bushfire risk.

This report has been prepared on the basis that bushfire mitigation measures identified are implemented and maintained into the future. Failure to maintain these measures may contribute to the development and future buildings being exposed to a higher level of bushfire threat and attack.

This report including recommendations does not guarantee future buildings will survive a bushfire and it is only considered valid for a period of 12 months.

1.3 Development Planning Context

This Bushfire Assessment Report has been prepared with regard to a proposed subdivision application across the site and has therefore been prepared in accordance with relevant provisions of the following legislation/policies and standards, and generally in accordance with the following guidelines:

- *Toowoomba Regional Planning Scheme (v28, 28 November 2022).*
- *Queensland Planning Act (2016).*
- *AS3959-2018 Construction of buildings in bushfire-prone areas.*
- *Queensland Vegetation Management Act (1999) (VM Act).*

The site is designated on TRC's Planning Scheme *Bushfire Hazard Overlay*. In this regard, the subdivision proposal requires assessment against provisions of the *Bushfire Hazard Overlay Code*.

The site is also broadly designated on TRC's Planning Scheme *Environmental Significance Overlay*. It should be noted that this bushfire assessment has been based solely on matters relevant to bushfire risk and mitigation as they relate to the features of the site and surrounds. Ecological matters have not expressly been examined in the context of this assessment or other matters including provisions of the *Reconfiguring a Lot Code*.

As TRC has integrated the *State Planning Policy 2017* into their planning scheme, an assessment against the included natural hazards benchmarks is not required to be conducted.

1.4 Adopted Assessment Methodology

The current (Version 28) Toowoomba Regional Planning Scheme (initially adopted in 2012) provides little guidance on carrying out a Bushfire Assessment or preparing a Bushfire Management Plan in support of a development proposal application.

The *Bushfire Hazard Overlay Code* does refer to the then current State Planning Policy 1/03: Mitigating the Adverse Impacts of Flood, Bushfire and Landslide, Appendix 8: Undertaking a Bushfire Management Plan, however this policy is now obsolete, superseded in December 2013 by the Single State Planning Policy, this now also superseded by the State Planning Policy (SPP).

The State Planning Policy does not provide a methodology for the assessment of bushfire hazard, undertaking a Bushfire Assessment or the preparation of a Bushfire Management Plan. Instead, it is supported by state-wide Bushfire Hazard Area mapping prepared by the Queensland

Government that replaced bushfire risk maps, modelled by the Rural Fire Service, Queensland Fire and Emergency Services in 2008 and last updated in 2015.

The Single State Planning Policy requires new planning schemes to use this state mapping, however, does not require it to be utilised where, as in the case with TRC, local hazard mapping existed in a planning scheme at the time the Single State Planning Policy was adopted.

The methodology used for this Bushfire Assessment is based on that contained within AS3959-2018 (Bushfire Attack Level (BAL) Assessment). In addition, three (3) limiting design factors were also adopted and underlie the assessment undertaken. These are:

- The specific placement of a Building Location Envelope (BLE) to avoid the need for an Asset Protection Zone (APZ).
- Minimising the amount of remnant vegetation afforded protection under the VM Act to be cleared via a future exemption that dwelling approvals would give rise to (a necessary firebreak to protect infrastructure that is 1.5 times the height of the tallest adjacent vegetation or 20m whichever is greater), and
- BAL ratings that do not exceed BAL 29.

With the above limiting design factors in mind, this assessment seeks to demonstrate that the proposed development satisfies the overall purpose of the *Bushfire Hazard Overlay Code* and in doing so minimises the extent of vegetation onsite needed to be cleared or structurally managed.

The overall purpose of the *Bushfire Hazard Overlay Code* is to protect the safety of people, and property in bushfire prone areas, by ensuring the reconfiguration of land appropriately responds to bushfire hazard and development provides access to water for firefighting purposes.

In the context of a subdivision proposal, it is considered a development appropriately responds to bushfire hazard where it can be demonstrated the subdivision proposal:

- minimises the potential adverse impacts of bushfire on people, property, economic activity, and the environment.
- does not result in a material increase in the extent or severity of bushfire hazard.
- can accommodate future buildings that can comply with the requirements of AS3959-2018 (and hence the requirements of the National Construction Code (NCC)) and in doing so any required bushfire mitigation measures can be carried out wholly within lots.
- minimises the loss of ecologically significant vegetation through inappropriately located development.
- is designed to assist emergency services in responding to any bushfire threat.

1.5 The National Construction Code & Australian Standard AS3959-2018

Where a local government planning scheme designates an area “bushfire prone” (this being land mapped on TRC’s Bushfire Hazard Overlay mapping), a proposal to construct a new or upgrade a residential building (among others) will trigger assessment against the NCC.

The NCC itself calls up *AS3959-2018 Construction of buildings in bushfire-prone areas* and determines how a building is to be constructed to resist a hazard level, providing an acceptable construction practice, which is then deemed to satisfy the requirements of the NCC. These bushfire construction requirements are aimed at improving bushfire protection for buildings.

AS3959-2018 specifies building implications within 100m of designated bushfire prone land, or more strictly speaking, within 100m of intact, classified vegetation (50m in the case

of grassland) and requires a site-by-site (for Class 1, 2 and 3 buildings) assessment of the hazard at building works approval stage to be signed off by a building certifier.

AS3959-2018 divides bushfire prone areas into six bushfire attack levels (Figure 1), based on the severity of the building's potential exposure to ember attack, radiant heat, and direct flame contact:

- BAL-LOW - very low risk
- BAL-12.5 - low risk
- BAL-19 - moderate risk
- BAL-29 - high risk
- BAL-40 - very high risk
- BAL-FZ - extreme risk (Flame Zone)

A Bushfire Attack Level (BAL) assessment is a means of measuring the severity of a building's potential exposure to ember attack, radiant heat and direct flame contact in a bushfire event and thereby determining the construction measures required for the dwelling.

Because a BAL assessment is applicable, only for site-by-site circumstances (or in other words building-by-building) it is for this reason this assessment, prepared in the context of a development proposal, should not be used in support of obtaining future building permits on the site.

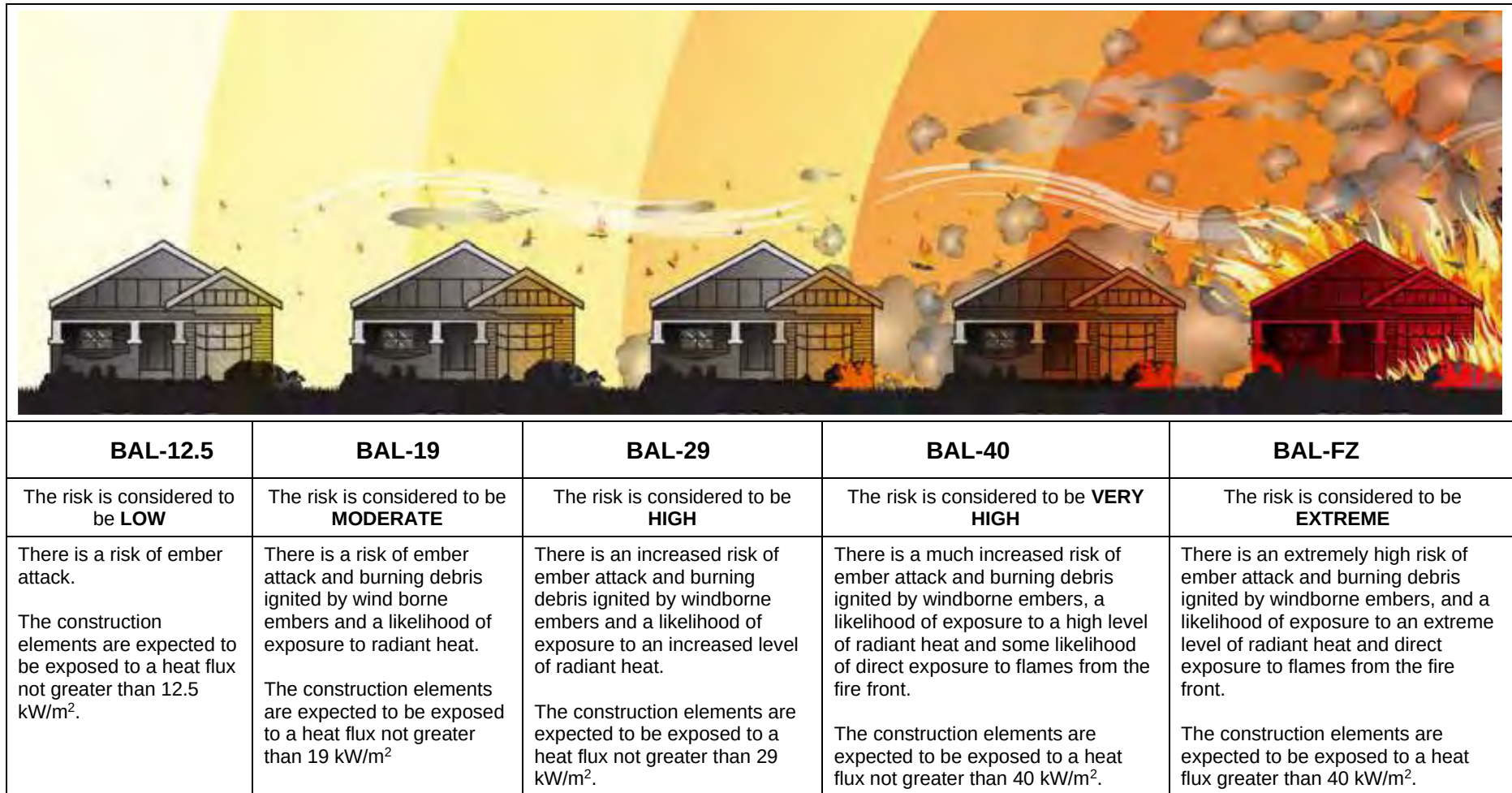


Figure 1: Explanation of Bushfire Attack Levels

Images sourced from Planning Practice Note 65 September 2014 Victoria State Government
BAL Descriptions - Australian Standard AS3959-2018 - Construction of buildings in bushfire-prone areas

2 Site Details & Development Description

2.1 Site Details & Location

The site is made up of one (1) irregularly shaped lot located at 185 Postle Street MOUNT RASCAL within the Toowoomba Regional Council's local government area, within the community of Mount Rascal and approximately 3.9km southwest of Toowoomba Plaza.

The site is zoned as Rural Residential (Precinct 1 - 4000 m² minimum) under the *Toowoomba Regional Planning Scheme 2024* (TRPS). The site locality is shown in Figure 2 on Page 10. Table 1 below provides a summary of the site details.

Table 1: Summary of Site Details

SITE ADDRESS:	185 Postle Street, MOUNT RASCAL
LOTS ON PLAN:	15SP295684
LOCAL GOVERNMENT:	Toowoomba Regional Council
TOTAL SITE AREA:	11480m ² (1.148 ha)
TENURE:	Freehold
ZONE:	Rural Residential (Precinct 1 - 4000 m ² minimum)
FIRE AUTHORITY:	DRAYTON FIRE STATION Drayton Fire & Rescue Station 32 Cambooya Street, Drayton, 4350
BUSHFIRE HAZARD:	Medium Fire Risk

2.2 Current Site Use

The subject land contains an existing dwelling and several outbuildings. The site is predominantly cleared and reflects characteristics typical of rural living, including established gardens. Many of the outbuildings function as greenhouses, with a well-maintained lawn extending along the western boundary of the property. Plate 1 (overleaf) illustrates the existing dwelling, while Plate 2 depicts the lawn area located at the rear of the dwelling.



Plate 1: View of existing dwelling on existing lot



Plate 2: View of lawn to the west of the existing dwelling and outbuildings

2.3 Topography & Drainage

The site exhibits a moderate slope, rising approximately 9m from the southern boundary to the northern boundary. There are no onsite drainage features, and the property does not contain a dam or watercourse. The nearest watercourse is located approximately 305m to the west, downslope from the subject land.

The site and its immediate surrounds are free draining. There are no vegetation management wetlands present on the site.

2.4 Surrounding Land Use

The site is bordered by a mix of current residential and future residential land uses, as outlined below:

- **North:** residences along Postle Street.
- **East:** Across Postle Street a residential development is being constructed with clearing of vegetation having recently commenced.
- **South:** Across Melroy Close, there is current intact vegetation consistent with RE 11.8.8.
- **West:** A residential subdivision currently undergoing variable stages of dwelling construction. The area is being marketed and sold as residential land packages.

More broadly, the site is located just outside the southern outskirts of Toowoomba in a semi-rural locality that is undergoing an increase in urbanisation over the last decade. The primary land use in the area is rural residential living with urbanisation generally in the form of small scale, small lot rural residential development of the same ilk as proposed.

In recent years, several small lot rural residential subdivisions have been established in the vicinity of the site, including along the adjacent Melroy Close. This trend reflects a shift away from larger rural living properties toward smaller residential lots, attracting new residents drawn to the amenity and natural features of the area.

2.5 Proposed Development

The applicant is seeking a Development Permit for Reconfiguring of a Lot to subdivide one (1) existing lot into a three (3) rural residential subdivision.

With reference to the proposal drawings prepared by Parkinson Surveyors, presented in Appendix A, proposed Lot 15 - containing the existing dwelling - and Lot 16 are each proposed to be 4,000m² in area, while Lot 17 is proposed to have an area of 3,484 m².

The new vacant lots can and will be compliantly connected to all available and nearby urban services and infrastructure - including reticulated water supply, stormwater, electricity, and telecommunications.

As the site is located within an unsewered area, vacant lots will require an onsite wastewater treatment system. System will be installed at the time of future dwelling construction, in accordance with relevant regulatory standards.

2.6 Bushfire Hazard Overlay Mapping

The *Toowoomba Regional Planning Scheme v28* which was adopted on 28 November 2012 shows bushfire prone areas on the site mapped as Medium Risk. The bushfire hazard mapping for the site and the surrounding area is shown in Figure 3.

2.7 Vegetation Hazard Classes

Vegetation is the primary source of fuel and combustion of fuel powers a bushfire. However, it is not just the quantity (load) of fuel that matters, but also the fuel arrangement and composition of fuel that contributes to the rate of fire spread and fire line intensity.

Only potential fuel load is used and here this refers to the possible total fuel load that a vegetation community would normally accumulate 10 years after a fire is used to estimate the fire line intensity and bushfire hazard. Not the actual fuel load on any particular day or year as measured in the field. This approach has been introduced by the State to ensure there is underlying consistency in bushfire planning and design across the State.

This potential total fuel load represents the ambient fuel load that is combustible under severe weather conditions. It is calculated as the sum of surface fuel load, near-surface fuel load, elevated fuel load and standing bark fuel and represents the 80th percentile fuel load for each fuel category based on the long-term unburnt condition.

Here fine fuel load, structure and composition, is described using a series of vegetation hazard classes (VHCs) which are in turn used to estimate potential fuel loads as outlined above. VHCs are based on the Queensland Herbarium's Regional Ecosystem mapping at the broad vegetation group level, and several other mapping data sets such as foliage projective cover mapping.

With reference to Figure 4, the site and immediate surrounds is mapped as containing three (3) areas of vegetation hazard class (VHC). These are as follows:

- *11.2 Moist to dry eucalypt woodlands on basalt areas*
- *40.4 Continuous low grass or tree cover*
- *42.6 Nil to very low vegetation cover*

For details of field confirmation and corresponding potential fuel loads refer to Sections 4.3 and 4.5 on Pages 17 and 21 respectively.

2.8 Proximity of Fire Brigade(s)

The site is within the Drayton Fire and Rescue Station district, and the brigade is located approximately 3.8km north of the site, and 7 minutes by road. It is situated at 32 Cambooya Street, DRAYTON. This Fire Brigade is operated by firefighters who are on call 24 hours of the day.

In the event of a natural disaster, emergency response teams are likely to be also drawn from the Toowoomba Fire Station, located at 11 Kitchener Street, East Toowoomba, as well as surrounding rural fire brigades operated by volunteers.

2.9 Specific Risk Factors Associated with the Proposed Development

2.9.1 Anticipated Onsite Activities

As noted above the proposed development is for a rural residential subdivision. No bulk storage or handling of hazardous materials in bulk is envisaged.

2.9.2 Numbers of People Likely to be Present

Under normal circumstances up to two adult persons and potentially children can be expected to be present on each lot depending on the time of day and day of the week.

Figure 2 Site Locality Plan

Legend

-  Locality Boundary
-  State Contolled Roads
-  Subject Site

Layer Sources: Qld GIS Layers (Qld Gov Information Service 2025)
Aerial - Google Earth 2025

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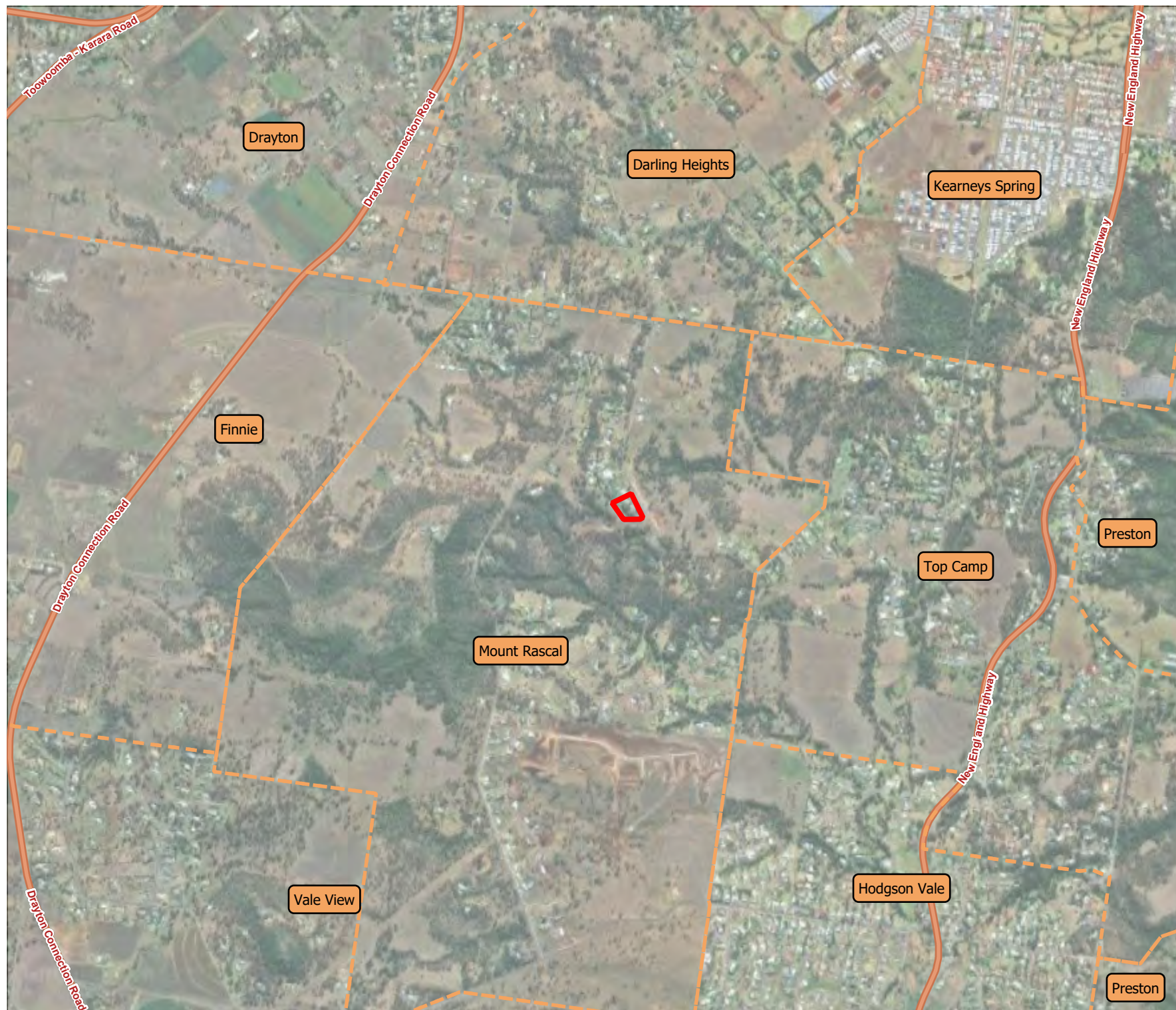


Figure 3
Bushfire Hazard Overlay

Legend

- 100m Buffer
- Existing Dwelling
- Proposed Lot Layout
- Subject Site
- Cadastre
- Bushfire Hazard Overlay : Risk
- High Risk
- Medium Risk

Layer Sources: Qld GIS Layers (Qld Gov Information Service 2025)
Aerial - Google Earth 2025

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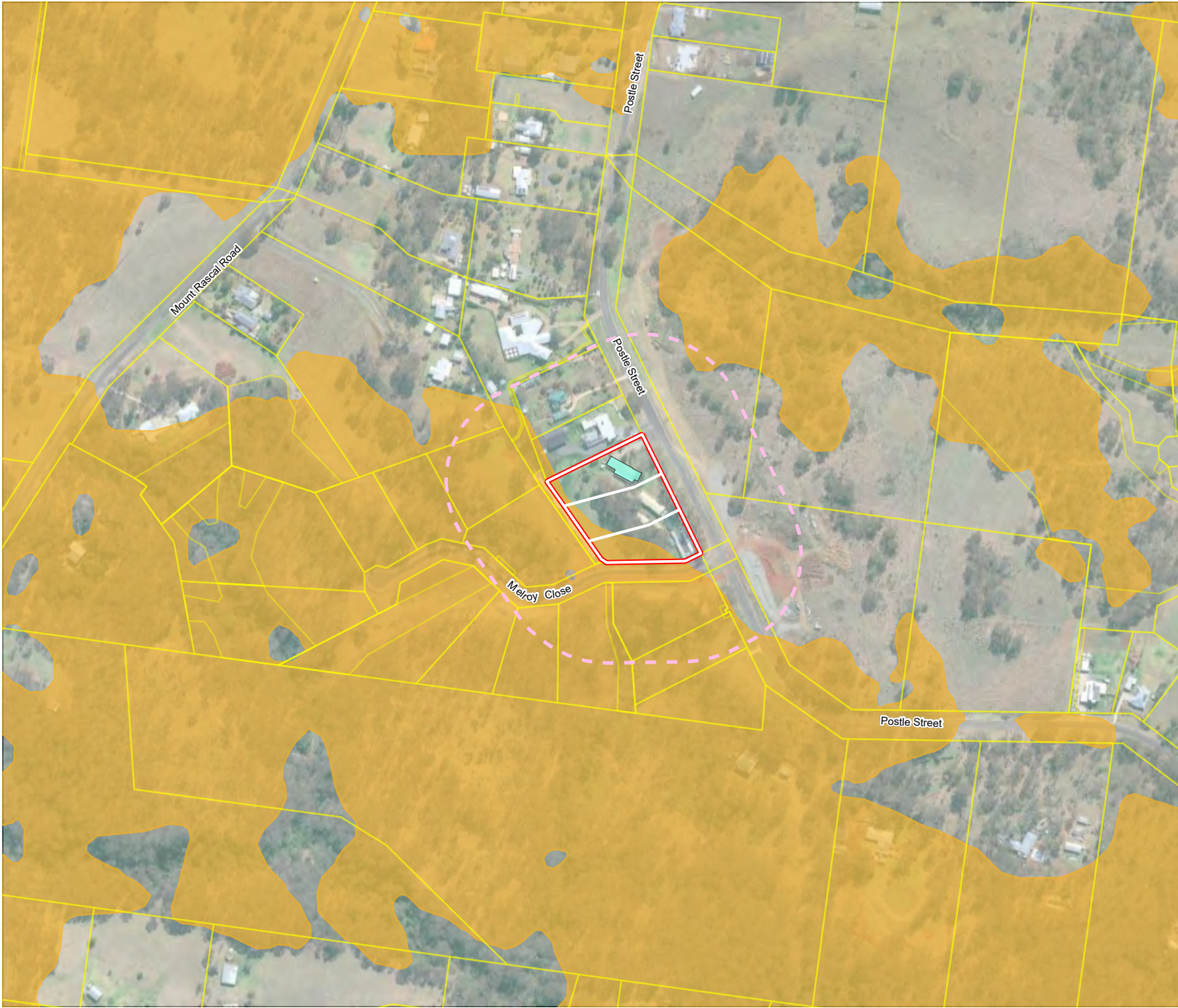


Figure 4
Vegetation Hazard
Classes

Legend

- 100m Buffer
- Existing Dwelling
- Proposed Lot Layout
- Subject Site
- Cadastre
- Vegetation Hazard Classes : VHC
- 11.2
- 39.2
- 40.4
- 41.4
- 42.6

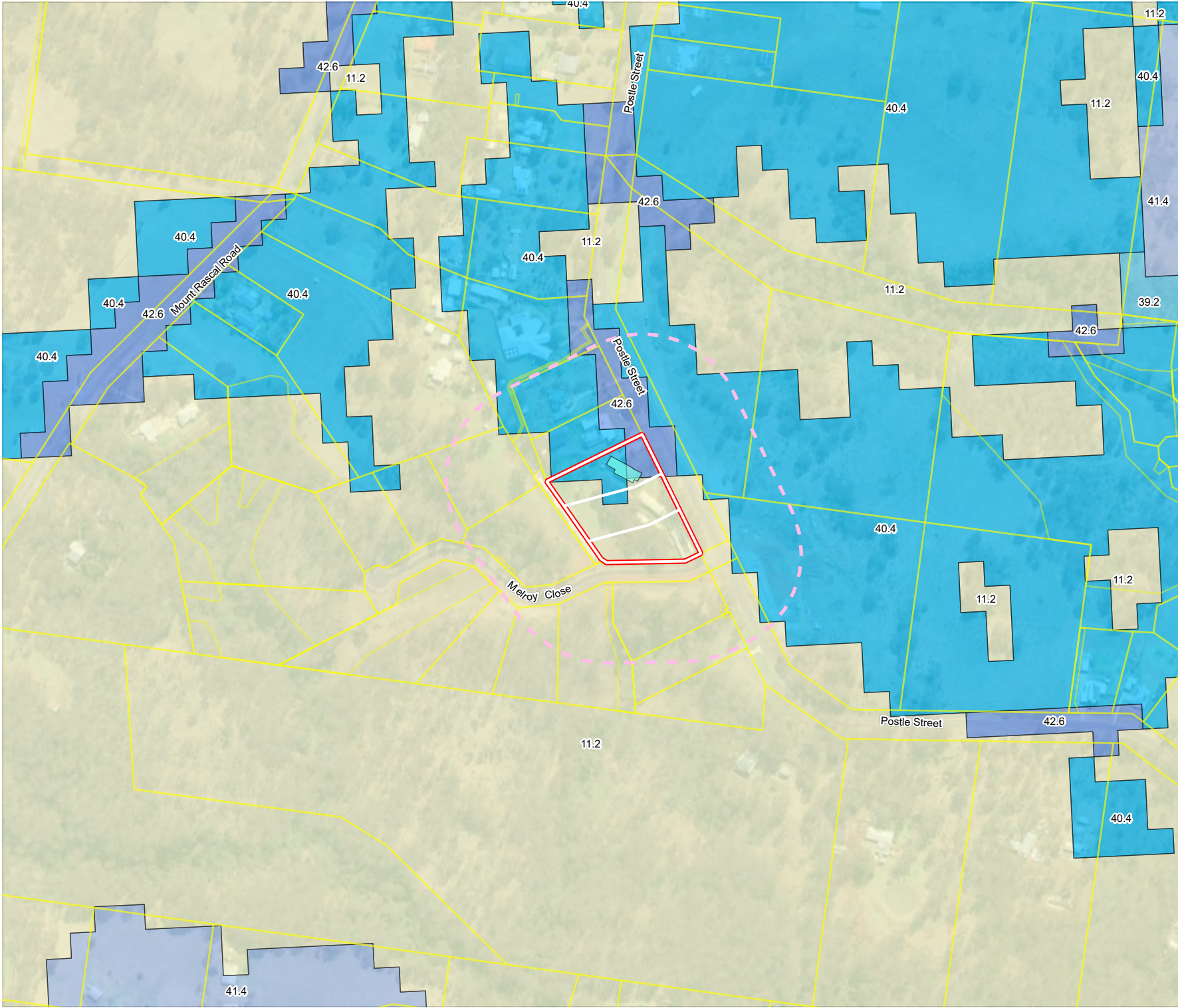
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3 Nature & Severity of Potential Bushfire Attack

By way of background, bushfire attack comes in a number of forms: direct flame, radiant heat, embers, smoke and wind (Figure 5), and that in most bushfires over 80% of housing loss and 80% of human life loss has occurred within 100m of bushland (Chen and McAneney 2004; Bianchi, Leonard et al. 2013).

Overall, the intention of bushfire mitigation measures should be to prevent flame contact to a structure, reduce radiant heat to below the ignition thresholds for various elements of a building, to minimise the potential for wind driven embers to cause ignition and reduce the effects of smoke on residents and firefighters.

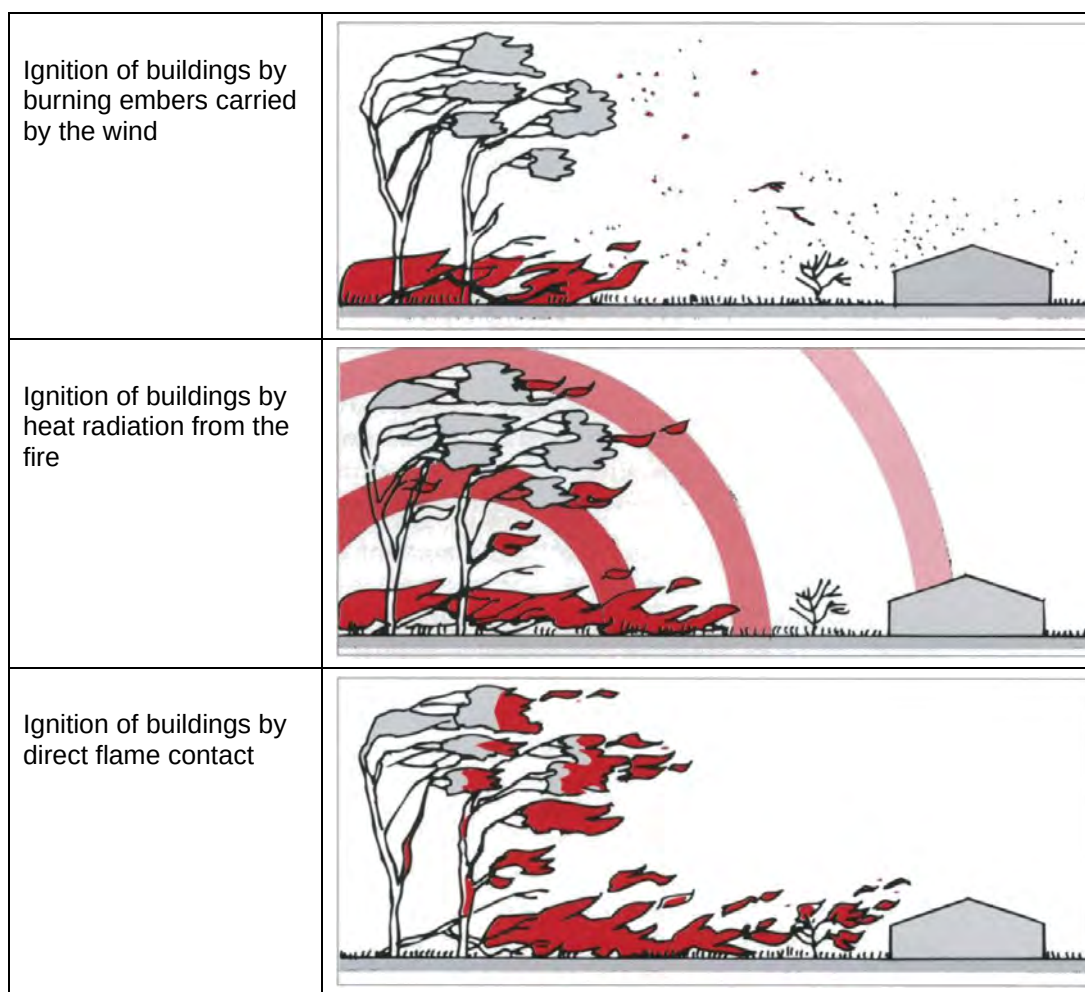


Figure 5: The Three Main Elements of Bushfire That Threaten Life and Property

Source: (Ramsay & Rudolf 2003)

3.1 Bushfire Season & Fire Weather

3.1.1 Bushfire Season

Varied fire seasons reflect different weather patterns. For most of southern Australia, the danger period is summer and autumn. For New South Wales and southern Queensland, the peak risk usually occurs in spring and early summer. Northern Australia experiences most of its fires in winter and spring (Figure 6).

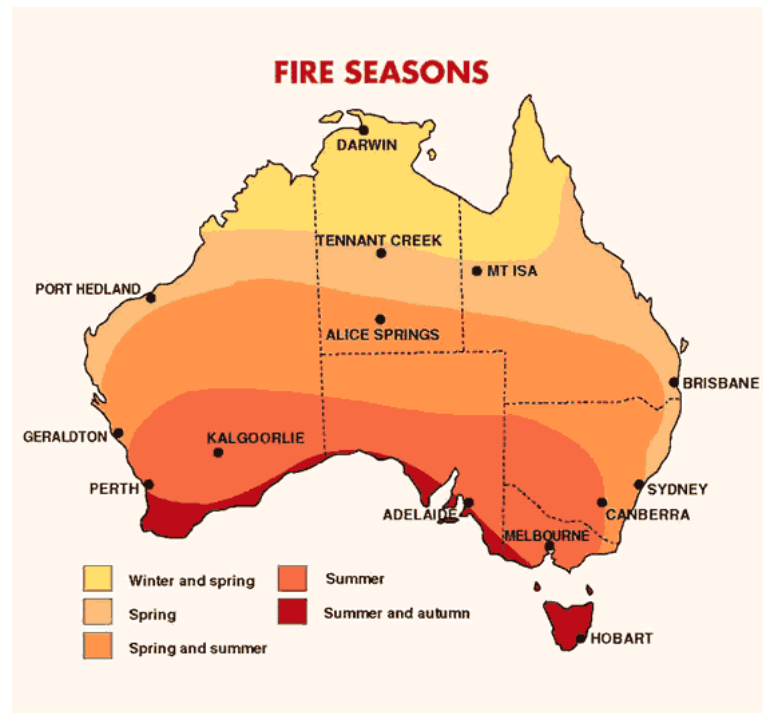


Figure 6: Australia's Fire Seasons

In Queensland, bushfires can occur at any time of the year, however the fire season usually coincides with progressive drying following the autumn rain season, peaking during the spring months of more severe fire weather, and concluding with the arrival of more regular storm events and rain in late spring and summer. On the east coast, this peak fire season is characterised by frequent dry westerly winds and lower humidity. In inland areas, wind direction is less significant, and the fire season can extend much longer into the summer months if rainfall is delayed.

The typical fire season in the Mount Rascal region peaks between September and November. The predominant winds in the area are south easterly, however during the fire season; hot gusty northerlies and westerlies of over 30 kph can be expected, with Relative Humidity falling to 10% and less.

Temperatures on these days can climb over 35°C, and for two or three days a year, fire weather conditions equivalent to FDI levels of around 70 can be anticipated. It should be noted that this is in contrast to the value of 40 which is the current FDI attributed to Queensland in AS3959-2018.

3.1.2 Anatomy of a Fire Danger Day

In terms of weather conditions, low relative humidity, high winds, and lack of rain all contribute to increased fire danger. Sunshine and high temperatures rapidly dry timber and grass (fuel) which burn very quickly. Hot air can lower the moisture content of forests and grasslands to around 5 per cent and in extreme cases to 2-3 per cent, greatly increasing the speed of the fire.

Humidity: Relative humidity is the most used measure of atmospheric moisture and is defined as the ratio of the amount of water vapour measured compared to that which air could hold at saturation. Very low relative humidity of, say, less than 20 per cent, causes fuels to dry out and become more flammable.

Wind: Air movement provides the oxygen the fire needs to keep burning. Higher winds mean more oxygen and more intense flames. Doubling the wind speed will quadruple the

rate of spread of the fire. However, above about 50 km an hour this relationship begins to break down, and above 80 km/h the rate of spread in grasslands reduces. This occurs because the head fire breaks up into narrow tongues, many of which become self-extinguishing. Winds also carry burning embers downwind, which can start new fires. This is known as spotting.

Rainfall: Dry grass, parched native shrubs, and dead leaves and twigs are fire's basic fuel. During droughts and in very hot, windy weather, even heavy fuels like large logs and the green leaves and smaller branches of large trees can become dry and flammable.

The worst weather conditions in southern Queensland occur when deep low-pressure systems near Tasmania bring strong, dry, westerly winds to the coast, as occurred in the major New South Wales fires in January 1994 (Figure 7).

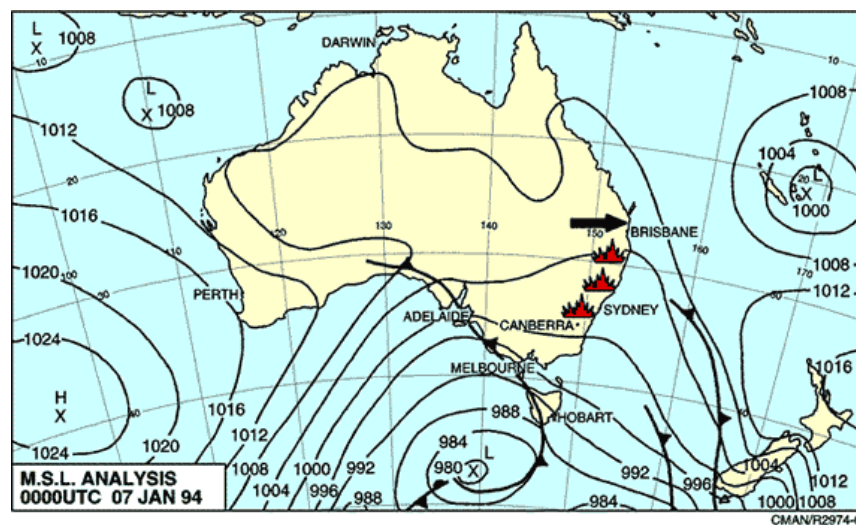


Figure 7: Historic Chart Analysis at 11am EDT on 7 January 1994, showing areas with extreme fire weather that resulted in serious bushfires in NSW and southern Queensland

Source: (Bureau of Meteorology)

3.2 Anticipated Direction of Bushfire Attack

The most likely direction for a major bushfire to approach the site is from the south or west through the unmanaged vegetation areas adjacent to the site. However, under adverse conditions, a bushfire could approach from virtually any direction.

As noted above, severe fire weather conditions are typically associated with hot strong westerly to northerly winds. Bushfires in the area have the potential to generate quantities of embers that could affect buildings even though the fire does not necessarily reach it.

3.3 Fire Run

The length of fire run influences the area in which a fire has to develop and reach its potential maximum intensity for the conditions prevailing at the time. It is important to assess the length of fire run to determine the potential scale and intensity of fires that may occur in the area.

Fire runs less than one (1) kilometre in length are generally considered to pose a lesser risk than those with a longer run. Fire runs may be modified by natural features such as creeks, rock formation and vegetation types and be influenced by weather and fuel conditions. Land management activities such as cultivation and cropping, roads and firebreaks can aid in limiting the potential of fire runs.

Fire runs in the locality of the site are relatively short and non-contiguous and consequently will limit the intensity and severity of bushfires in the area. The surrounding site areas have been largely modified due to rural residential activities including buildings, construction of roads, and landscaping.

The semi developed nature of the landscape acts to impede the development, intensity and progress of a bushfire should one occur. The most likely scenario is for a fire to be deliberately or accidentally lit which could approach from ignition of dry vegetation along the neighbouring lots on the eastern or western side of the site or further afield depending on wind direction.

4 Bushfire Attack Level (BAL) Assessment

A BAL rating is determined through identification and assessment of the following parameters:

- Fire Danger Index (FDI) rating; assumed to be FDI-40 for QLD.
- All classified vegetation within 100m of the subject building.
- Separation distance between the building and the classified vegetation source/s, and
- Slope of the land under the classified vegetation.

There are two separate methods in AS3959-2018 for determining the impact of bushfire on buildings and have been summarised below:

- **Method 1** (outlined in Section 2 of AS 3959-2018) allows for a basic assessment of radiant heat flux that calculates the required setback to achieve an acceptable level of radiant heat exposure (i.e., BAL-29) based on an assessment of classified vegetation within 100m of a site. This method uses the standard fuel loads outlined in AS3959 and considers the effective slope beneath vegetation. This method can only be used where the slope under classifiable vegetation is equal to or less than 20 degrees downslope.
- **Method 2** (outlined in Appendix B of AS3959-2018) provides a framework for a more rigorous and site-specific assessment of radiant heat flux exposure for a site, involving bushfire engineering analysis and modelling using site specific data (e.g., climate/weather conditions during fire season, actual onsite fuel loads associated with classified vegetation etc.).

4.1 Assessment Method

This assessment has been undertaken using Method 2 of AS 3959-2018 to determine the maximum heat flux. Method 2 of AS 3959 involves the evaluation of the site characteristics using site specific conditions (such as fuel accumulation though in this instance the assessment relies on VHC derived fuel loads) and FDI to determine fire behaviour and is a more detailed assessment than Method 1.

4.2 Fire Danger Index (FDI)

In accordance with Table 2.1 of AS3959-2018 the relevant Fire Danger Index (FDI) for a BAL assessment in Queensland is FDI 40, however in view of adopting a more cautious approach and in line with methodology requirements expected by TRC assessing officers, the assessment has adopted an FDI of 70.

4.3 Classified Vegetation Assessment

A site visit is necessary to inspect vegetation located on and around the site. An inspection for the purposes of confirming mapped vegetation hazard classes (VHCs) and classifying vegetation in accordance with AS 3959-2018 was carried out by Ashley Hall (Environmental Scientist) together with Nathan Mead (Environmental Scientist) on Friday 5 December 2025.

In the context of AS3959-2018, vegetation within and the surrounding 100m of the site was assessed in the field and then mapped. Vegetation beyond 100 metres and that which does not trigger a BAL assessment (i.e., low threat) according to Section 2.2.3.2 of AS3959-2018 was excluded from the assessment. This excluded low threat vegetation included the following:

- Vegetation of any type more than 100 m from the site.

- Single areas of vegetation less than 1 ha in area and not within 100 m of other areas of vegetation being classified.
- Multiple areas of vegetation less than 0.25 ha in area and not within 20 m of the site or each other.
- Strips of vegetation less than 20 m wide (measured perpendicular to the elevation exposed to the strip of vegetation) regardless of length and not within 20 m of the site or each other, or other areas of vegetation being classified.
- Non-vegetated areas, including waterways, roads, footpaths, buildings, and rocky outcrops.
- Low threat vegetation, including grassland managed in a minimal fuel condition, maintained lawns, golf courses, maintained public reserves and parkland, vineyards, orchards, cultivated gardens, commercial nurseries, nature strips and wind breaks.

In the context of AS3959-2018, two types of classified vegetation were encountered in the study area:

- **B – Woodland** – vegetation situated on adjoining land to the south of the site. This vegetation is mapped as remnant vegetation by the Queensland Government as comprising of regional ecosystem RE 11.8.8. – *Eucalyptus albens*, *E. crebra* woodland on Cainozoic igneous rocks. (Plate 3 & Plate 4).
- **Low Threat Vegetation** - areas of mown grass, driveways, roads, gardens, and house yards sometimes having occasional trees (Plate 5).

The location and extent of this classified vegetation is mapped on Figure 8. Several site photos are also provided in Appendix B.

The site visit undertaken also included field assessment to confirm the VHCs mapped across and surrounding the site. It is considered that one of the VHC is inaccurately mapped - specifically *11.2 Moist to dry eucalypt woodlands on basalt areas*, which is shown as extending throughout the south of the site.

Field observations confirm that all areas mapped as VHC 11.2 onsite are situated on cleared land currently used as a house yard with mown grasses. In addition, the site inspections undertaken showed that satellite imagery featuring established tree canopies have been cut down and mulched (Plate 6). Based on the site conditions, these areas would be more accurately described as *42.6 Nil to very low vegetation cover*. Site investigations of neighbouring properties showed that RE 11.8.8. is intact over the southern boundary of the site, across Melroy Close.



Plate 3: Photograph showing RE 11.8.8 vegetation situated to the south of the site, across Melroy Close



Plate 4: View looking up towards the site showing the closest unmanaged vegetation west of the site



Plate 5: View north looking upslope to the existing residence



Plate 6: Chopped down and mulched trees on site

4.4 Slope Assessment

From a bushfire hazard perspective, slope of the land under the bushfire prone vegetation can greatly influence fire behaviour. This slope is referred to as the effective slope. If the potentially hazardous vegetation is located upslope of the asset(s) the contribution that slope makes towards the intensity and rate of spread of the fire is negligible. Site slope is the gradient of the land between retained vegetation and adjoining assets. The site slope influences the 'view factor' of the flame geometries in BAL models.

Where potentially hazardous vegetation is located downslope of the asset(s) the effective slope gradient of the vegetated land will have significant influence on bushfire intensity and rate of spread.

Typically, for each 18-20% (or 10 degrees) increase in slope gradient the rate of forward spread and intensity of a bushfire will double for a fire moving up the slope towards an asset. Similarly, if the fire is moving down the slope the rate of spread will decrease by approximately double for each 18-20% (or 10 degrees) decrease in slope gradient. As the rate of spread of a bushfire increase so does its intensity.

A GIS and LIDAR data desktop assessment of has been conducted and found a maximum effective slope of approximately 18 degrees downslope in a southerly direction commencing from approximately the far side of the adjacent Melroy Close roadway to the edge of the 100m study area.

A summary of the results of the effective slope assessments performed is presented in Table 2 below. Figure 9 on Page 23 illustrates the maximum effective slope relevant to this assessment in both identified potential fire run directions.

Table 2: Effective Slope Assessment Results

RUN NUMBER	DIRECTION	EFFECTIVE SLOPE
Run 1	South	18° Downslope
Run 2	West	11° Downslope

4.5 Potential Fuel Loads

Table 3 below lists the potential fuel loads used in the assessment for the ground truthed VHCs encountered on and surrounding the site as detailed in the *Bushfire Resilient Communities Guidelines* (QFES 2019).

For the assessed directions, onsite classified vegetation equated with *VHC 11.2 Moist to dry eucalypt woodlands on basalt areas*.

Table 3: Ground-truthed Vegetation Hazard Classes & Potential Fuel Loads

DIRECTION	VEGETATION HAZARD CLASS (VHC)	SURFACE & NEAR SURFACE FUEL LOAD (ha)	TOTAL FIELD LOAD (ha)
South	VHC 11.2 Moist to dry eucalypt woodlands on basalt areas	11.5	13.0
West	VHC 11.2 Moist to dry eucalypt woodlands on basalt areas	11.5	13.0

Figure 8 AS3959 Vegetation Classification

Legend

- 100m Buffer
- Existing Dwelling
- Proposed Lot Layout
- Subject Site
- Cadastre
- AS3959 Vegetation Classification :
 - B Woodland
 - Low Threat Vegetation

Layer Sources: Qld GIS Layers (Qld Gov Information Service 2025)
Aerial - Google Earth 2025

Client:	Steinmuller Property Pty Ltd		
Project No:	YEP2025116		
Drawn:	ADH	Approved:	NPK
Revision:	A	Date:	12/12/2025



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Figure 9
Effective Slope
Assessment

Legend

- 100m Buffer
- Existing Dwelling
- Proposed Lot Layout
- Subject Site
- Cadastral
- Slope
- 1m Contours

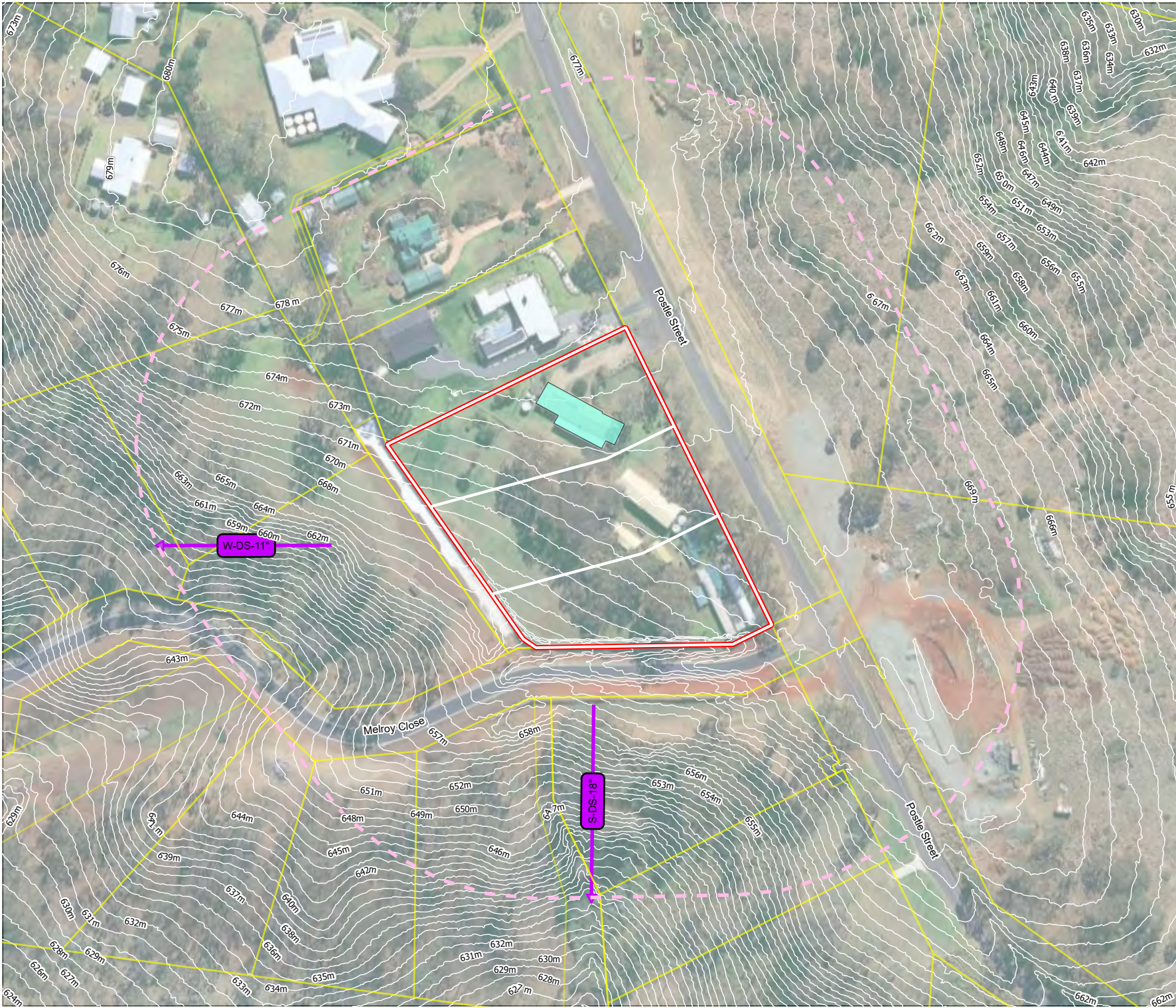
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5 Site Constraints Limiting Bushfire Mitigation Measures

5.1 Vegetation of Conservation Significance

The *Vegetation Management Act 1999* (VM Act) establishes the vegetation management framework for Queensland, which applies to all vegetation other than state forests, national parks, forest reserves, and certain other tenures defined under the *Forestry Act 1959* and the *Nature Conservation Act 1992*.

The purpose of the Act is to regulate the clearing of vegetation in a way that conserves remnant endangered, of concern and least concern regional ecosystems, vegetation in declared areas, ensures clearing does not cause land degradation, prevents the loss of biodiversity, and maintains ecological processes. It uses a series of maps to determine what vegetation is regulated and where clearing may not take place.

A review of state vegetation mapping indicates the site does not contain vegetation afforded protection under the VM Act and is entirely mapped as containing Category X vegetation category. The site is not mapped as containing High Risk Areas identified by the Queensland Government on its Protected Plant Flora Trigger Mapping or Koala Habitat Area.

As noted previously, the site is broadly designated on TRC's *Environmental Significance Overlay*, comprising areas mapped 'Areas of Ecological Significance' and 'Areas of Mapped Ecological Significance Buffer'. As such from TRC's perspective the site contains vegetation of conservation significance. There are no requirements of the Toowoomba Regional Planning Scheme that would preclude or require approval to clear or manage vegetation onsite for the purposes of establishing or maintaining an Asset Protection Zone (APZ).

The presence of vegetation of conservation significance may restrict the ease of implementation of some bushfire management measures, notably extensive vegetation clearing or structural management within an asset protection zone or to establish a firebreak. Site inspections concluded that there is no area of ecological significance present on site, as the site is maintained as a lawn in a low fuel state, as per Plate 5 on page 20.

5.2 Fire History & Frequency

No known fire history (planned or unplanned) for the site was able to be determined during the field assessment. An investigation of the Queensland Government's fire scar history database revealed recordings of fires occurring over Postle Street in the eastern corner of the site in 2002 but none since that time. Previously, fires occurred across the majority of the site during 1987.

No evidence of burned stumps, logs of fence posts were found during the site inspection or any other signs of recent fire activity on or surrounding the site. This result is not unusual however, with the most recent documented fire occurrence happening twenty-three (23) years ago.

6 Bushfire Mitigation Measures

In light of the established bushfire hazard and vegetation classification, a number of bushfire mitigation measures are discussed below, some of which will be needed to ensure the development proposal has appropriately responded to bushfire hazard.

6.1 Siting of Future Buildings

To assist in appropriately siting future buildings in locations where mitigation measures are achievable, development footprints, building footprints, building location envelopes or building exclusion zones are commonly recommended.

In this instance, the implementation of a building location envelope is considered the most appropriate siting tool to address bushfire risk. This requirement is particularly relevant to the proposed Lots 16 and 17, as no permanent dwellings currently exist on these lots. Lot 15 already contains an established dwelling and therefore does not require additional siting considerations.

6.2 Determination of Bushfire Attack Level

Future buildings situated on lots within 100m of bushfire prone land will need to be constructed to meet the requirements of the National Construction Code (NCC) and in turn AS3959-2018.

Table 4 provides a summary of the BAL assessment undertaken in accordance with Method 2 of AS3959-2018 for each lot proposed. The results obtained are based on the vegetation classification and slope analysis previously outlined, and is visually represented in Figure 8 and Figure 9.

From Table 4 it can be seen the maximum BAL rating for Lots 16 and 17 would be no more than BAL-19 for the most exposed direction assessed within the respective building location envelope.

Figure 11 on Page 28 shows the modelled BAL contours following development of the site using Method 2. Results are also summarised graphically in Figure 10 overleaf with detailed calculations also provided in Appendix C.

Table 4: Method 2 BAL Assessment Result

PROPOSED LOT	SEPARATION WITHOUT BLE	MAXIMUM LOT BAL RATING WITHOUT BLE	SEPARATION WITH BLE	MAXIMUM DWELLING BAL RATING WITH BLE
Lot 16	23m	BAL-29	56m	BAL-12.5
Lot 17	23m	BAL-40	31m	BAL-19

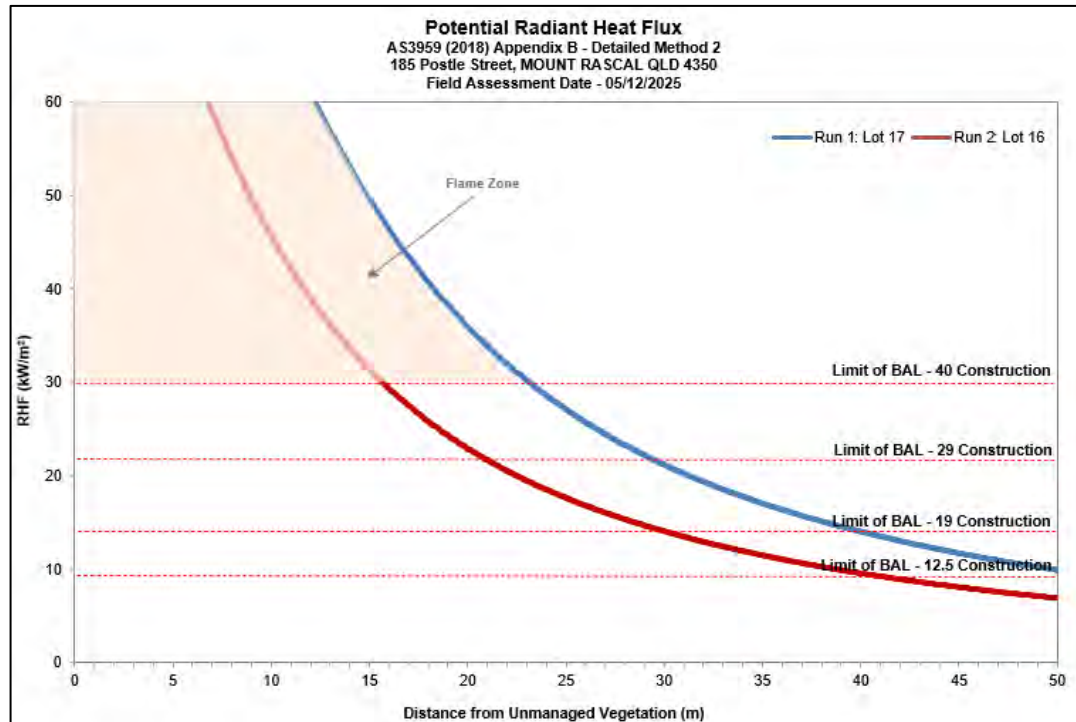


Figure 10: Modelled Potential Radiant Heat Flux Levels

Appendix D presents a summary of AS3959-2018 construction standards. For detailed construction standards, refer to Sections 3 and 5 of AS3959-2018.

It is worth noting too that in accordance with AS3959-2018 any structure (such as a shed or garage) built within 6m of the dwelling will also need to be constructed in accordance with the corresponding BAL rating attained ahead of obtaining building approval.

It is noted that TRC's *Bushfire Hazard Overlay Code* does not include a BAL 'cap' that limits the degree of bushfire mitigation able to be borne by the future building to be constructed and consequently placing emphasis on the provision of greater separation distances to unmanaged classified vegetation or any other mitigation measure. Nor does the Code identify a BAL rating (e.g., BAL-29) proportionate with an unacceptable level of risk.

However, it is understood TRC does have an informal position on this and that it seeks to ensure all future buildings are able to achieve a rating of BAL-29 or lower.

6.3 Fire Trails & Firebreaks

Fire trails are only effective in the context of a strategic advantage and access for hazard-reduction operations and are primarily used as access for firefighters. They can also double as firebreaks and maintenance of buffers protecting development, and in non-urban areas, may surround isolated dwellings or groups of dwellings. In urban areas, they may function as a strategic control line around the hazard side of the development, if they are connected to the public road system at frequent intervals.

Trails present difficulties and costs associated with maintenance on private land and generally are only suitable where a site backs onto public bushland reserves and can connect to an existing fire trail network and/or public road network.

No designated fire trail network is proposed given its relatively small sized subdivision and such a network would yield no strategic benefit to firefighters.

A fire trail constitutes a fire management line, examples including roads, fence line clearings, tracks used to access water for firefighting or dividing the property for fuel reduction burning or back-burning.

Firebreaks serve several functions. Generally, they are considered relatively linear man-made barriers of bare ground (a mineral earth firebreak), or low fuel (a grass only covered firebreak) intended to stop or slow the spread of bushfires. Under high fuel load conditions both mineral earth and grass covered firebreaks can only be of assistance in slowing down a bushfire rather than stopping it, because spotting will occur, and no direct fire suppression attack is possible. Some firebreaks are designed to prevent the fire escaping, and others are designed to restrict entry of a fire from outside the property or area.

No firebreaks are suggested for each new lot boundary or generally, given the location and layout of the new vacant allotment relative to the location of unmanaged classified vegetation.

6.4 Lot Access & Egress

In the event of a significant bushfire threat, it is critical that the proposed development provides sufficient ingress and egress for firefighting vehicles, along with defensible space to support emergency response efforts. Safe access and evacuation routes are also essential for resident safety.

Whilst the subdivision design does not include a through road, it is considered that the layout does not pose an entrapment risk. The most likely direction of bushfire impact is from the south or west, and the orientation of the site's street frontage ensures that residents evacuating by vehicle would be moving east onto Postle Street, then north - away from the advancing fire front.

In this instance, the current street frontage is considered to provide adequate lot access and egress for firefighting vehicles and the evacuation of people in the event of a serious bushfire.

6.5 Water Supplies & Utilities

The *Bushfire Hazard Overlay Code* requires that the development be provided with an adequate water supply for firefighting purposes that is safely located and freely accessible. This can be achieved by being connected to a reticulated water supply with a minimum *Bushfire Hazard Overlay Code* flow of 10 litres per seconds at 200kPa or alternatively with a dedicated onsite water storage system that permanently holds a minimum of 10,000 litres (e.g., dam, swimming pool or water tank).

The site is currently situated in a water supply area, and all lots will be compliantly connected to this water supply. As the building location envelopes recommended for the new proposed lots are within 40m of the Postle Street Road Reserve, these lots will not need to be provided with a tank or similar storage system that permanently holds a minimum of 10,000 litres for firefighting purposes in accordance with Acceptable Outcome 3.2 and 3.3 of the *Bushfire Hazard Overlay Code*.

Gas, if installed, shall be fully installed in accordance with *Australian Standard AS1596-2208 - The storage and handling of LP gas* including the use of metal piping, being kept clear of all flammable materials, and ensuring that any release valves are directed away from buildings, so that they do not act as catalysts to combustion.

Figure 11
Bushfire Attack Level
Contours (Method 2)

Legend

- 100m Buffer
- Existing Dwelling
- Proposed Lot Layout
- Subject Site
- Cadastre
- BAL Contours : Source
- BAL-12.5
- BAL-19
- BAL-29
- BAL-40
- BAL-FZ

Layer Sources: Qld GIS Layers (Qld Gov Information Service 2025)
Aerial - Google Earth 2025

Client:	Steinmuller Property Pty Ltd		
Project No:	YEP2025116		
Drawn:	ADH	Approved:	NPK
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Figure 12
Bushfire Mitigation
Measures

Legend

- Existing Dwelling
- Indicative Dwelling - 250m²
- Indicative Shed - 54m²
- Indicative Effluent Spray Out - 2 x 450m²
- Building Location Envelope
- Proposed Lot Layout
- Subject Site
- Cadastre

Layer Sources: Qld GIS Layers (Qld Gov Information Service 2025)
Aerial - Google Earth 2025

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7 Recommendations

In summary, following are several recommendations that should be undertaken to mitigate the potential impacts of bushfire for the subdivision proposal and reduce the risk to future life and property in the bushfire prone environment.

7.1 Siting of Future Buildings

For proposed Lots 16 and 17, future dwellings are to be located within the building location envelope shown on Figure 12.

7.2 Construction of Future Buildings

Future buildings are to be constructed to meet the requirements of the relevant building standards prevailing at the time to enable a building to be designed and constructed according to the site conditions. This includes *Australian Standard AS2959-2018 Construction of buildings in bushfire prone areas* as invoked by the National Construction Code (NCC).

Although a separate requirement independent of any subdivision approval process, it is worth reiterating that future dwellings, where located within 100m of classified vegetation, will be subject to the findings of a Bushfire Attack Level Assessment prepared for a Building Certifier immediately prior to obtaining a building permit.

7.3 Water Supply

The newly created lots be compliantly connected to Council's reticulated water supply system at the time of construction of a future dwelling.

8 Conclusion

Yarramine Environmental has prepared this Bushfire Assessment Report in support of a Reconfiguring a Lot application for a proposed 1 into 3 lot subdivision at 185 Postle Street, MOUNT RASCAL.

It is considered, subject to the recommendations outlined in Section 7, the subdivision proposal has been designed to account for and appropriately respond to bushfire hazard on and surrounding the subject site by:

- minimising the potential adverse impacts of bushfire on people, property, economic activity, and the environment.
- not resulting in a material increase in the extent or severity of bushfire hazard.
- being capable of accommodating future buildings that can comply with the requirements of AS3959-2018.
- minimising the loss of ecologically significant vegetation through inappropriately located development, and
- assists residents and emergency services in responding to any bushfire threat.

To this end TRC's favourable consideration of the subdivision proposal, subject to reasonable and relevant conditions in accordance with provisions of the *Planning Act 2016* is respectfully requested.

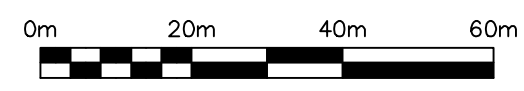
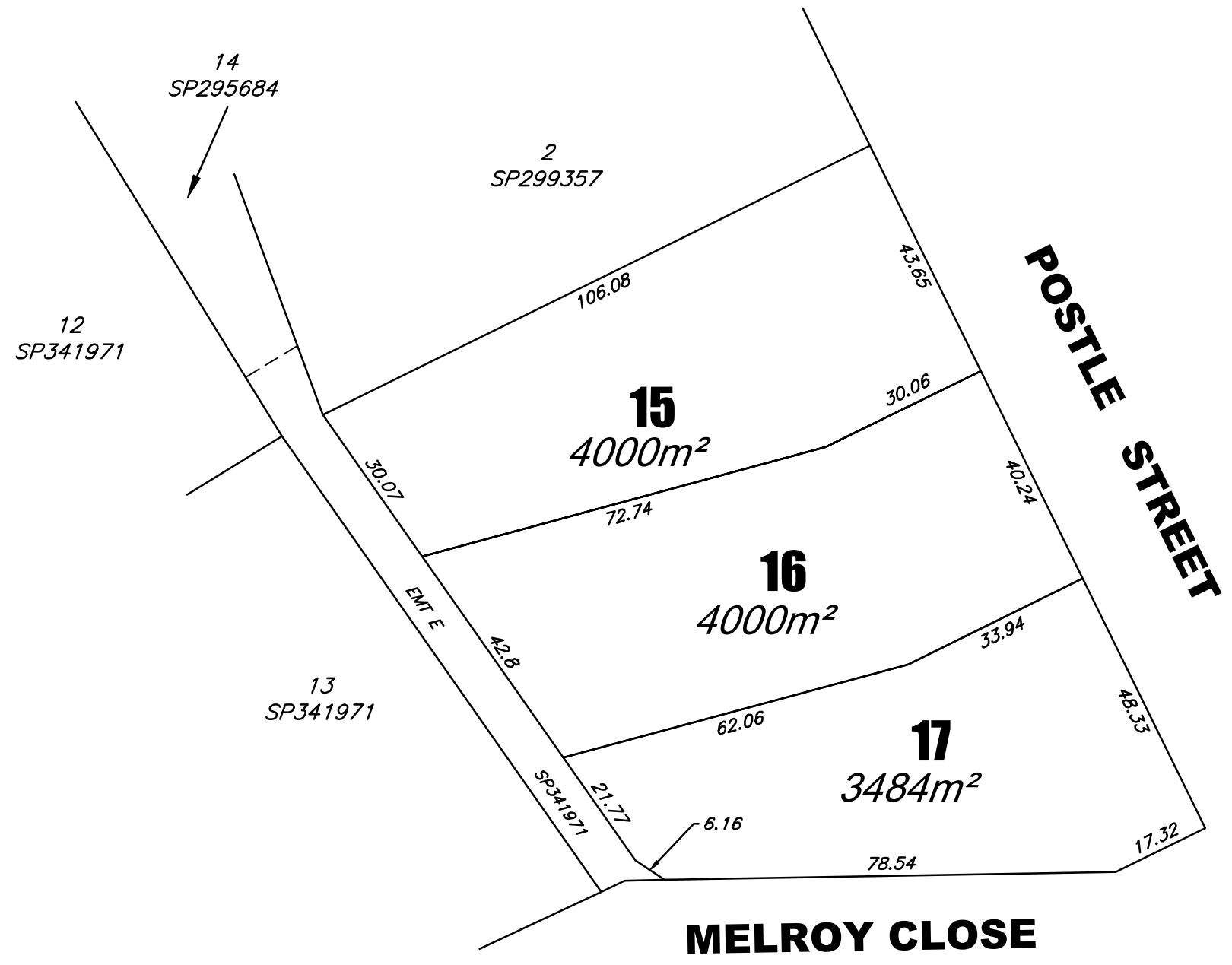
For a response to the *Bushfire Hazard Overlay Code*, refer to Appendix E of this report.

9 References

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- Standards Australia (2018) AS 3959 - 2018 *Construction of buildings in bushfire prone areas*, Standards Australia, North Sydney, New South Wales.
- Standards Australia (2021) AS2419.1 *Fire hydrant installations, Part 1: System design, installation and commissioning*, Standards Australia, North Sydney, New South Wales.

Appendix A

PROPOSED RECONFIGURATION DRAWINGS BY PARKINSON SURVEYS



PARKINSON
SURVEYS
Consulting Cadastral & Engineering Surveyors
185 Herries St, Toowoomba, QLD, 4350
Ph. 07 46323244
Email. mail@parkinsonsurveys.com.au

This plan was prepared for the purpose and exclusive use of the client to accompany an application to the Toowoomba Regional Council for approval to reconfigure the land described in the plan and is not to be used for any other purpose or by any other person or corporation. Parkinson Surveys Pty Ltd accepts no responsibility for any loss or damage suffered, howsoever arising, to any person or corporation who may use or rely on this plan in contravention of the terms of this clause. The dimensions, area, size of lots shown on this plan are approximate only and may vary. This plan may not be reproduced unless this note is included.

Client MICK STEINMULLER	RPD LOT 15 ON SP295684	Address 185 POSTLE ST	Project PROPOSED RECONFIGURATION (1 INTO 3)			
Scale 1 : 1000 @ A3			Title SITE LAYOUT & DIMENSIONS			
Surveyed N/A	Drawn SCM	Locality MOUNT RASCAL				
Date N/A	Date 25/03/2025	Local Authority TOOWOOMBA RC	Surveyor Ref. 15390	Drawing No. 15390 Proposal	Revision A	

Appendix B

SITE PHOTOS













Appendix C

AS3959-2018 METHOD 2 BAL ASSESSMENT CALCULATION

Bushfire Attack Assessment Calculation Summary



AS3959 (2018) Appendix B - Detailed Method 2

Site Street Address: 185 Postle Street, MOUNT RASCAL, QLD, 4350
Assessor: Ashley Hall
Local Government Area: Toowoomba Regional Council

Assessment Date: 2025/12/10
Field Visit Date: 2025/12/05
Onsite Fuel Assessment: No (VHCs)

Run 1: Lot 17

Vegetation Information

Vegetation Type:	Woodland	Vegetation Group:	Woodland
Vegetation Slope:	18 Degrees	Vegetation Slope Type:	Downslope
Surface Fuel Load:	11.5 t/ha	Overall Fuel Load:	13 t/ha

Site Information

Site Slope:	4 Degrees	Site Slope Type:	Downslope
Elevation of Receiver:	6.76 m	APZ/Separation:	31 m

Fire Inputs

Flame Width:	100 m	Flame Temp:	1090 K
--------------	-------	-------------	--------

Calculation Parameters

Flame Emissivity:	0.95	ε	Relative Humidity:	0.25	%
Heat of Combustion:	18600	kJ/kg	Ambient Temp:	308	K
Moisture Factor:	5	%	FDI:	70	

Outputs

Category of Attack:	VERY HIGH	Peak Elevation of Receiver:	6.76	m	
Level of Construction:	BAL-29	Fire Intensity:	22466	I	
Radiant Heat:	20.24	kW/m ²	Flame Angle:	50	Degrees
Flame Length:	23.30	m	Maximum View Factor:	0.3242	Φ
Rate of Spread:	3.34	km/hr	Inner Protection Area:		m
Transmissivity:	0.821	τ	Outer Protection Area		m

Run 2: Lot 16

Vegetation Information

Vegetation Type:	Woodland	Vegetation Group:	Woodland
Vegetation Slope:	11 Degrees	Vegetation Slope Type:	Downslope
Surface Fuel Load:	11.5 t/ha	Overall Fuel Load:	13 t/ha

Site Information

Site Slope:	4 Degrees	Site Slope Type:	Downslope
Elevation of Receiver:	2.98 m	APZ/Separation:	56 m

Fire Inputs

Flame Width:	100 m	Flame Temp:	1090 K
--------------	-------	-------------	--------

Calculation Parameters

Flame Emissivity:	0.95	ε	Relative Humidity:	25%	%
Heat of Combustion:	18600	kJ/kg	Ambient Temp:	308	K
Moisture Factor:	5	%	FDI:	70	

Outputs

Category of Attack:	LOW	Peak Elevation of Receiver:	2.98	m	
Level of Construction:	BAL-12.5	Fire Intensity:	13860	I	
Radiant Heat:	5.79	kW/m ²	Flame Angle:	67	Degrees
Flame Length:	14.97	m	Maximum View Factor:	0.0997	Φ
Rate of Spread:	2.06	km/hr	Inner Protection Area:		m
Transmissivity:	0.764	τ	Outer Protection Area		m

Equations Used

Transmissivity:	Fuss & Hammins, 2002
Flame Length:	RFS PBP, 2001
Radiant Heat:	Drysdale, 1985, Sullivan et al., 2003, Tan et al., 2005

Peak Elevation of Receiver:	Tan et al., 2005
Peak Flame Angle:	Tan et al., 2005
Rate of Fire Spread:	Noble et al., 1980

Appendix D

SUMMARY OF AS3959-2018 CONSTRUCTION REQUIREMENTS

Summary of AS3959-2018 Construction Requirements

Note: The information in the table below is summary of the construction requirements in the April 2018 Australian Standard and is not intended as a design or construction guide. One should consult the standard for the full technical details and amendments issued from time to time.

BUILDING ELEMENT	BAL-LOW	BAL-12.5	BAL-19	BAL-29	BAL-40	BAL-FZ
SUB FLOOR SUPPORTS	No special construction requirements	No special construction requirements	No special construction requirements	Enclosure by external wall or by steel, bronze or aluminium mesh, non-combustible supports where the subfloor is unenclosed or naturally fire resistant timber	If enclosed by external wall refer below 'External Walls' section in table or non-combustible subfloor supports or tested for bushfire resistance to AS 1530.8.1	Subfloor supports – enclosure by external wall or non-combustible with an FRL of 30/- or be tested for bushfire resistance to AS 1530.8.2
FLOORS	No special construction requirements	No special construction requirements	No special construction requirements	Concrete slab on ground or enclosure by external wall, metal mesh as above or flooring less than 400 mm above ground level to be non-combustible, naturally fire resistant timber or protected on the underside w	Concrete slab on ground or enclosure by external wall or protection of underside with a non-combustible material such as fibre cement sheet or be non-combustible or be tested for bushfire resistance to AS 1530.8.1	Concrete slab on ground or enclosure by external wall o ran FRL of 30/30/30 or protection of underside with 30 minute incipient spread of fire system or be tested for bushfire resistance to AS 1530.8.2
EXTERNAL WALLS	No special construction requirements	As per BAL-19	External walls – Parts less than 400 mm above ground or decks etc. to be of non-combustible material, 6 mm fibre cement clad, or bushfire resistant/naturally fire resistant timber	Non-combustible material (masonry, brick veneer, mud brick, aerated concrete, concrete), timber framed, steel framed walls sarked on the outside and clad with 6 mm fibre cement sheeting or steel sheeting or bushfire resistant timber	Non-combustible material (masonry, brick veneer, mud brick, aerated concrete, concrete) or timber framed, or steel framed walls sarked on the outside and clad with 9 mm fibre cement sheeting or steel sheeting or be tested for bushfire resistance to AS 1530.8.1	Non-combustible material (masonry, brick veneer, mud brick, aerated concrete, concrete) with minimum thickness of 90 mm or an FRL of -/30/30 when tested from outside or be tested for bushfire resistance to AS 1530.8.2
EXTERNAL WINDOWS	No special construction requirements	4mm Grade A Safety Glass or glass blocks within 400 mm of ground, deck etc. with Openable portion metal screened with frame of meteor metal reinforced PVC-U or bushfire resisting timber	5mm toughened glass or glass blocks within 400 mm of ground, deck etc. with Openable portion metal screened with frame of metal or metal reinforced PVC-U or bushfire resisting timber. Above 400mm annealed glass can be used with all glass screened	5 mm toughened glass with openable portion screened and frame foetal or metal reinforced PVC-U, or bushfire resisting timber and portion within 400 mm of ground, deck etc. screened	6 mm toughened glass. Fixed and Openable portion screened with steel or bronze mesh	Protected by bushfire shutter or FRL of -/30/- and openable portion screened with steel or bronze mesh or be tested for bushfire resistance to AS 1530.8.2

BUILDING ELEMENT	BAL-LOW	BAL-12.5	BAL-19	BAL-29	BAL-40	BAL-FZ
EXTERNAL DOORS	No special construction requirements	As for BAL-19 except that door framing can be naturally fire resistant (high density) timber	Screened with steel, bronze or aluminium mesh or glazed with 5 mm toughened glass, non-combustible or 35 mm solid timber for 400 mm above threshold, metal or bushfire resisting timber framed for 400 mm above ground, decking, etc., tight-fitting with weather strips at base	Screened with steel, bronze or aluminium mesh or non-combustible, or 35 mm solid timber for 400 mm above threshold. Metal or bushfire resisting timber framed tight-fitting with weather strips at base	Non-combustible or 35 mm solid timber, screened with steel or bronze mesh, metal framed, tight-fitting with weather strips at base	Protected by bushfire shutter or tight-fitting with weather strips at base and an FRL of -/30/-
ROOFS	No special construction requirements	As for BAL-19 (including roof to be fully sarked)	Non-combustible covering. Roof/wall junction sealed. Openings fitted with non-combustible ember guard	Non-combustible covering. Roof/wall junction sealed. Openings fitted with non-combustible ember guards. Roof to be fully sarked	Non-combustible covering. Roof/wall junction sealed. Openings fitted with non-combustible ember guards. Roof to be fully sarked and no roof mounted evaporative coolers	Roof with FRL of 30/30/30 or tested for bushfire resistance to AS 1530.8.2. Roof/wall junction sealed. Openings fitted with non-combustible ember guards. No roof mounted evaporative coolers
VERANDAHS DECKS ETC	No special construction requirements	As per BAL-19	Enclosed sub-floor space – no special requirement for materials except within 400 mm of ground. No special requirements for supports or framing. Decking to be non-combustible or bushfire resistant within 300 mm horizontally and 400 mm vertically from a glazed element	Enclosed sub-floor space or non-combustible or bushfire resistant timber supports. Decking to be non-combustible or bushfire-resisting timber	Enclosed sub-floor space or non-combustible supports. Decking to be non-combustible	Enclosed sub-floor space or non-combustible supports. Decking to have no gaps and be non-combustible
WATER AND GAS SUPPLY PIPES	Aboveground, exposed water and gas supply pipes are to be metal.	Aboveground, exposed water and gas supply pipes are to be metal.	Aboveground, exposed water and gas supply pipes are to be metal.	Aboveground, exposed water and gas supply pipes are to be metal.	Above-ground, exposed water and gas supply pipes are to be metal	Aboveground, exposed water and gas supply pipes are to be metal.

Appendix E

BUSHFIRE HAZARD OVERLAY CODE RESPONSE

Bushfire Hazard Overlay Code Response

PERFORMANCE OUTCOME	ACCEPTABLE OUTCOME	RESPONSE
FOR ACCEPTED DEVELOPMENT AND ASSESSMENT BENCHMARKS FOR ASSESSABLE DEVELOPMENT		
PO ₁ Development is provided with an adequate water supply for firefighting purposes that is safely located and freely accessible.	AO_{1.1} Development within a water supply area involving the creation of a new lot/s or involving proposed and existing buildings with a combined gross floor area greater than 50m², is connected to Council's reticulated water supply system It will be readily available at all time for firefighting vehicles and a water supply outlet located within the road reserve is within 40m of the following: (a) all of the land; or (b) a building envelope designated on each lot; or (c) the centre of each lot, excluding access handles (where no building envelope is designated); and (d) all existing and proposed buildings AND Fire hydrants are designed and installed in accordance with Queensland Fire and Emergency Services' Fire Hydrant and Vehicle Access Guidelines, unless otherwise specified by the relevant water entity. AO_{1.2} Development outside a water supply area involving proposed or existing buildings with a combined gross floor area greater than 50m², are provided with a dedicated on site water storage system that permanently holds a minimum of 10,000 litres (e.g., dam, swimming pool or water tank) for firefighting purposes. AO_{1.3} A water tank is provided within 10m of each building (other than a class 10 building) which: (a) is either below ground level or of non-flammable construction; (b) has a take-off connection at a level that allows the following dedicated, static water supply to be left available for access by fire fighters: (i) 10,000 litres for residential buildings; (ii) For industrial, commercial; and other buildings, a volume specified in AS2304-2011. (c) includes shielding of tanks and pumps in accordance with AS2304-2011; (d) includes a hardstand area allowing medium rigid vehicle (15 tonne fire appliance) access within 6m of the tank; (e) is provided with rural fire brigade tank fittings if serviced by a rural fire brigade (i.e., 50mm ball valve and male camlock coupling and, if underground, an access hole of 200mm (minimum) to accommodate suction lines); and (f) is clearly identified by directional signage at the street frontage.	COMPLIES The existing lot is connected to Council's reticulated water supply system, and all lots will be compliantly connected to this water supply, including for firefighting purposes as the building location envelopes on each lot are within 40m of the road reserve. Fire hydrants will be designed and installed in accordance with Queensland Fire and Emergency Services' Fire Hydrant and Vehicle Access Guidelines, unless otherwise specified by the relevant water entity.
PO ₂ Development provides for the safety of people and property by avoiding areas of High or Medium bushfire risk.	AO_{2.1} Development is not located on land that is subject to High or Medium bushfire risk. OR AO_{2.2} Where development is located in a High or Medium bushfire risk area (except for single dwellings on existing lots), it complies with a Bushfire Management Plan for the premises.	COMPLIES Although the subdivision is located on land subject to medium bushfire hazard area, the subdivision complies and can be conditioned to comply with the recommendations of a Bushfire Assessment Report (this report).

PERFORMANCE OUTCOME	ACCEPTABLE OUTCOME	RESPONSE
		This assessment identified mitigation measures that if implemented during construction of the subdivision and at the time future buildings are constructed will manage bushfire hazard. It is worth noting new dwellings to be constructed within 100m of areas of identified bushfire hazard (bushfire prone areas) are to be constructed in compliance with current relevant building standards. This includes requirements relating to <i>Australian Standard AS3959-2018 Building in Bushfire Prone Areas</i>.
PO₃ Development provides for safety of people and property by mitigating the risk through the siting of buildings.	AO_{3.1} Buildings and structures: (a) are sited in locations of lowest hazard within the lot; and (b) achieve setbacks from hazardous vegetation of 1.5 times the predominant mature canopy tree height or 10 metres, whichever is the greater; and (c) are 10 metres from any retained vegetation strips or small areas of vegetation; and (d) are sited so that elements of the development least susceptible to fire are sited closest to the bushfire hazard.	PERFORMANCE SOLUTION The proposed subdivision is of a design that enables future buildings and structures to achieve adequate separation from hazardous vegetation, where such buildings are located within the building location envelope for Lots 16 & 17.
ASSESSMENT BENCHMARKS FOR ASSESSABLE DEVELOPMENT		
FOR ALL DEVELOPMENT		
PO₁ Community infrastructure is only located in a bushfire medium and high-risk area where the function and role of the infrastructure necessitates its location in the area and there are no suitable alternative sites in a low bushfire hazard area.	No acceptable outcome is nominated.	NOT APPLICABLE The subdivision is rural residential in nature and does not involve the establishment or future establishment of community infrastructure.
PO₂ Community infrastructure is able to function effectively during and immediately after bushfire events.	AO_{2.1} The community infrastructure is located on land that is not subject to High or Medium bushfire hazard; or <i>Note for AO2.1: A site-specific bushfire hazard assessment is necessary to demonstrate that although the proposed development site is within bushfire hazard area, the bushfire hazard is low on that site.</i> AO_{2.2} The community infrastructure will not involve any new building work other than a minor extension (<20 m² gross floor area) to an existing building; or AO_{2.3} The community infrastructure development is located within a bushfire hazard area (as identified in the Bushfire Hazard Overlay Maps) but is designed to function effectively during and immediately after bushfire events. <i>Note for AO2.3: The development application must include and comply with a comprehensive Bushfire Management Plan.</i>	NOT APPLICABLE The subdivision is rural residential in nature and does not involve the establishment or future establishment of community infrastructure.

PERFORMANCE OUTCOMES	ACCEPTABLE OUTCOMES	COMMENTS
WATER SUPPLY		
PO₃ Development is provided with an adequate water supply for firefighting purposes that is safely located and freely accessible.	AO_{3.1} Development within a water supply area involving the creation of a new lot/s or involving proposed and existing buildings with a combined gross floor area greater than 50m², is connected to Council's reticulated water supply system It will be readily available at all time for firefighting vehicles and a water supply outlet located within the road reserve is within 40m of the following: (a) all of the land; or (b) a building envelope designated on each lot; or (c) the centre of each lot, excluding access handles (where no building envelope is designated); and (d) all existing and proposed buildings AND Fire hydrants are designed and installed in accordance with Queensland Fire and Emergency Services' Fire Hydrant and Vehicle Access Guidelines, unless otherwise specified by the relevant water entity. AO_{3.2} Development outside a water supply area involving proposed or existing buildings with a combined gross floor area greater than 50m², are provided with a dedicated on site water storage system that permanently holds a minimum of 10,000 litres (e.g., dam, swimming pool or water tank) for firefighting purposes. AO_{3.3} A water tank is provided within 10m of each building (other than a class 10 building) which: (a) is either below ground level or of non-flammable construction; (b) has a take-off connection at a level that allows the following dedicated, static water supply to be left available for access by fire fighters: (i) 10,000 litres for residential buildings; (ii) For industrial, commercial; and other buildings, a volume specified in AS2304- 2011. (c) includes shielding of tanks and pumps in accordance with AS2304- 2011; (d) includes a hardstand area allowing medium rigid vehicle (15 tonne fire appliance) access within 6m of the tank; (e) is provided with rural fire brigade tank fittings if serviced by a rural fire brigade (i.e., 50mm ball valve and male camlock coupling and, if underground, an access hole of 200mm (minimum) to accommodate suction lines); and (f) is clearly identified by directional signage at the street frontage.	COMPLIES The existing lot is connected to Council's reticulated water supply system, and all lots will be compliantly connected to this water supply, including for firefighting purposes as the building location envelopes on each lot are within 40m of the road reserve. Fire hydrants will be designed and installed in accordance with Queensland Fire and Emergency Services' Fire Hydrant and Vehicle Access Guidelines, unless otherwise specified by the relevant water entity.

PERFORMANCE OUTCOMES		ACCEPTABLE OUTCOMES	COMMENTS
HAZARDOUS MATERIALS			
PO ₄	Public safety and the environment are not adversely affected by the detrimental impacts of bushfire on the manufacture or storage of hazardous materials in bulk.	AO _{4.1} Development complies with a Bushfire Management Plan for the premises. <i>Note: 'Hazardous materials in bulk' is defined in Section 9, Glossary of the SPP Guideline. Where the assessment manager has not previously approved a Bushfire Management Plan (see Note 1.7 above), the development proponent will be expected to prepare such a plan to the satisfaction of the assessment manager. See Appendix 8 for more information on bushfire management plans.</i>	NOT APPLICABLE The subdivision is rural residential in nature. The manufacture or storage of hazardous materials in bulk is not proposed as a component of this development.
RECONFIGURING A LOT AND MATERIAL CHANGE OF USE			
PO ₅	Lot design and the siting of buildings provide safe sites for habitable and non-habitable buildings.	AO5.1 All development enables buildings and structures to achieve setbacks from hazardous vegetation that are: (a) sited within the area of lowest hazard within the lot; and (b) provide for adequate setbacks from hazardous vegetation; and (c) 1.5 times the predominant mature canopy tree height or 10m, whichever is the greater; and (d) 10m from any retained vegetation strips or small areas of vegetation; and (e) sited so that elements of the development least susceptible to fire are sited closest to the bushfire hazard.	PERFORMANCE SOLUTION The proposed subdivision is of a design that enables future buildings and structures to achieve adequate separation from hazardous vegetation, where such buildings are located within the building location envelope for Lot 16 & 17.
PO ₆	For development that will result in multiple buildings or lots, roads and access are designed to mitigate against bushfire hazard by ensuring adequate access for: (a) firefighting and other emergency vehicles; and (b) the evacuation of people in the event of an emergency	AO _{6.1} The road design is capable of providing access for firefighting and other emergency vehicles, in accordance with the standards identified in SC4.2 PSP No. 2 – Engineering Standards – Roads and Drainage Infrastructure. AO _{6.2} The lot layout ensures that all roads are through roads. AO _{6.3} The lot layout does not include long narrow lots, long access ways or rear lots. AO _{6.4} The road has a maximum gradient of 1 in 8 (12.5%).	NOT APPLICABLE The proposed development does not require a new road to be constructed. The subdivision has been designed in a way that allows symmetrical lot frontage to Postle Street.
PO ₇	For development that will result in multiple buildings or lots, fire breaks are provided to: (a) adequately and effectively separate the development site from surrounding vegetation to mitigate against bushfire hazard; (b) have sufficient width to enable continuous access for firefighting and other emergency vehicles, residents, and equipment; and (c) are in secure tenure and are maintained.	AO _{7.1} The development incorporates a fire break provided by a perimeter road that: (a) separates the boundary of the lots and the adjacent bushland; (b) has a minimum cleared width of 20m; (c) has a formed road width of 6m; and (d) is constructed to an all-weather standard. AO _{7.2} The development includes fire breaks which are located as close as possible to the boundaries of the lot(s) and the adjoining bushfire hazard, and the fire breaks have: (a) a minimum cleared width of 6m;	PERFORMANCE SOLUTION The subdivision proposal does not include the provision of a fire maintenance trail or firebreak(s). Based on factors including the location of unmanaged classified vegetation, length of this interface to areas of managed vegetation, topography, lack of connection points to an existing maintenance trail, and surrounding land tenure there are no compelling reasons for a fire maintenance trail, which should be locally strategic, to be required.

PERFORMANCE OUTCOMES	ACCEPTABLE OUTCOMES	COMMENTS
	(b) a minimum formed width of 4m; (c) a maximum gradient of 1 in 8 (12.5%); (d) are constructed and maintained to prevent erosion, provide adequate drainage, and provide continuous access for firefighting vehicles; (e) provide passing bays and turning areas for fire-fighting appliances; and (f) are either located on public land, or within an access easement that is granted in favour of the Toowoomba Regional Council and the Queensland Fire and Rescue Service. AO_{7.3} Vehicular access is provided along and at each end of the firebreak to existing fire maintenance trails or roads. AO_{7.4} The development includes sufficient cleared breaks of 6m minimum width in retained bushland within the development (e.g. creek corridors and retained vegetation) to allow burning of sections and access for bushfire response.	No firebreaks are suggested for each new lot boundary given these would not achieve any meaningful difference in the reduction of bushfire risk.



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