BLACKASH
BUSHFIRE CONSULTING

Strategic Bushfire Study

Rural Residential Subdivision

292 Rosemont Rd, Boxers creek

Prepared for

John Taylor C/O MMJ Real Estate

23 February 2024

Document Tracking

Project Name:	Strategic Bushfire Study – 292 Rosemont Rd, Boxers Creek
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Project Number	J2601

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Version	Primary Author(s)	Description	Date Completed
0.1	David Lemcke	DRAFT	5 August 2021
1.0	Corey Shackleton	Final draft for client	16 August 2021
1.1	Corey Shackleton	Final (updated plans)	24 February 2022
2.0	Corey Shackleton	Draft (updated layout)	21 November 2023
2.1	Corey Shackleton	Final	23 February 2024

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Disclaimer

Contents

1. Introduction and proposed development

Blackash Bushfire Consulting has been engaged by MMJ Real Estate, to provide a Strategic Bushfire Study (SBS) to support the rezoning of 292 Rosemont Rd, Boxers Creek from RU6 Investigation Zone to permit rural residential development. The land is legally known as Lots 117 & 118 DP 126140.

Rosemont Road forms the north boundary and Barretts Lane is at the south-west boundary corner. Both are two-lane sealed public roads ultimately. Barretts Lane for the first 1.2 km from the property boundary is two-lane gravel road.

The site is approximately 6km south-east of Goulburn town centre, and 6km north-east of the Goulburn Airport. The site and adjoining land have been historically used for rural purposes, with the site containing an existing dwelling (see Figure 1 for location).

The application seeks ultimate approval for the subdivision of land for rural residential purposes. The subdivision of Lots 117 & 118 will result in 4 rural residential lots (see Figure 2). The allotments created will be 2 -25.12 Ha in size.

Proposed Lots 1 & 2 will have frontage to Rosemont Road, while Lots 3 & 4 will gain access via an internal road.

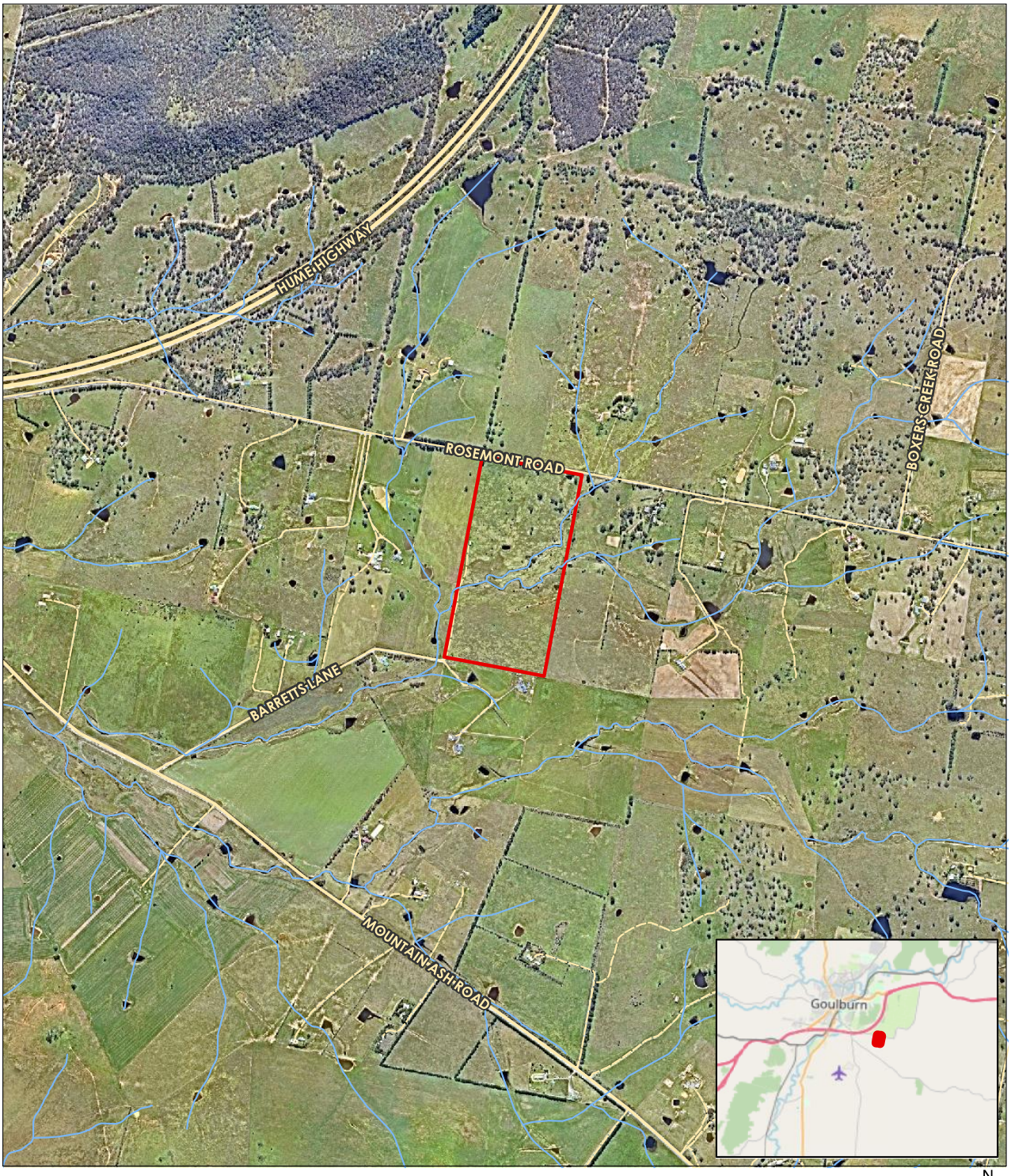

Figure 1: Location

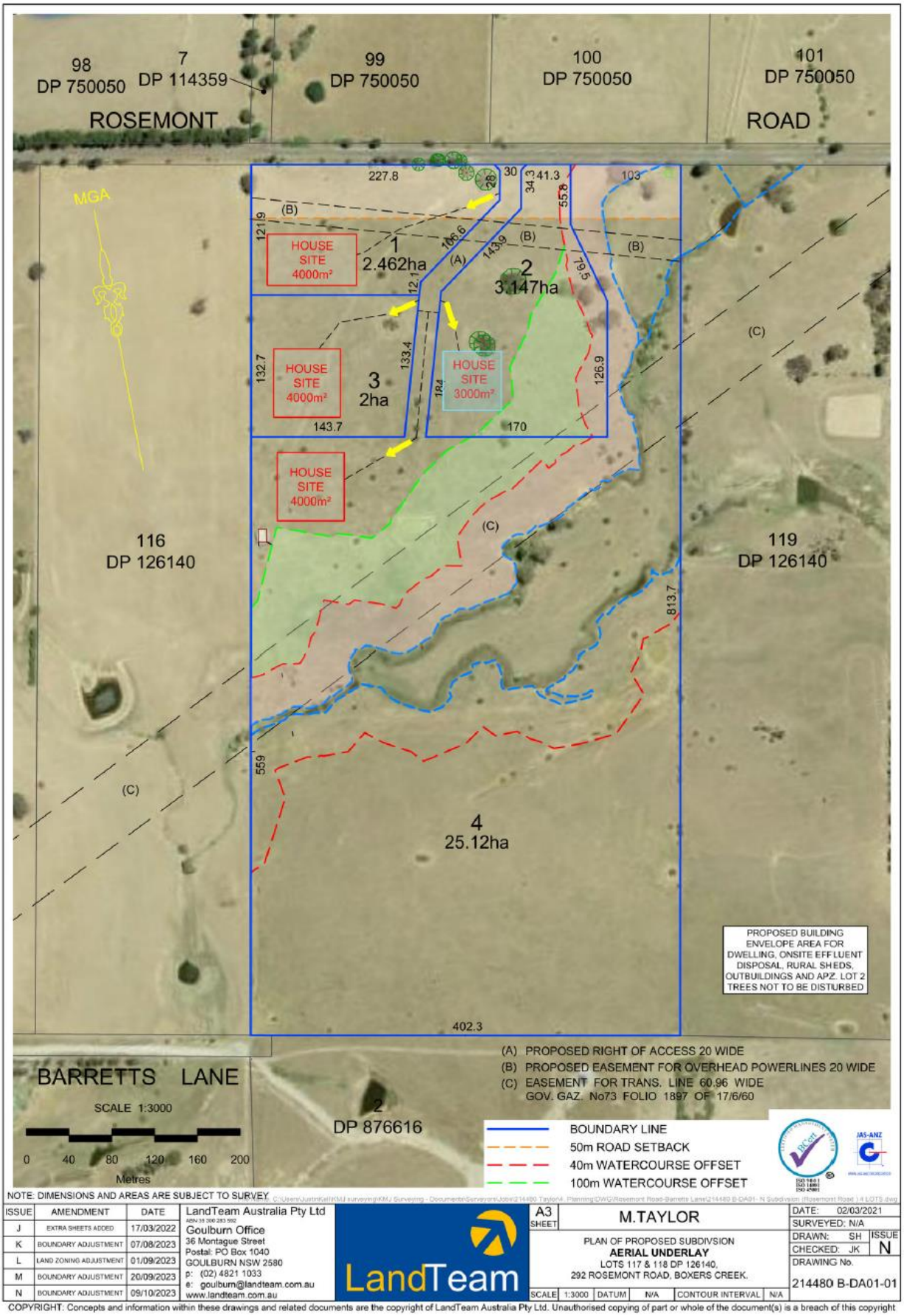

Figure 2: Site and proposed subdivision

2. Strategic planning for bushfires

The National Strategy for Disaster Resilience (2011)[1] recognises that strategic planning is essential in creating safer and sustainable communities, in keeping with the policy and intent of government at all levels. Priority outcomes of Section 3.6 include:

- *All levels of decision making in land use planning and building control systems take into account information on risks to the social, built, economic and natural environments.*

Comprehensive consideration of bushfires and risks in the planning system needs sound understanding of the landscape context and risks, as well as clarity on risk management principles and on the approach to strategic planning and development controls that will adequately mitigate identified risks. Where there are competing policy objectives, such as biodiversity conservation and fuel reduction, an agreed methodology or guidance is critical.

As such, planning decisions must be based on the best available evidence and rigorous merits-based assessment to ensure that new development - people, homes and businesses are not exposed to unacceptable risk from bushfire.

Improved land use planning decisions and building controls for developments in bushfire prone areas are intrinsic to an integrated approach to the fire management. The application of legislation, policy, and guidelines provides one of the most effective means of bushfire planning to ensure future developments are resilient and capable of protecting life.

The importance of sound land use planning has been recognised in most significant bushfire inquiries, including Natural Disasters in Australia which noted that land use planning that considers natural hazard risks is the single most important mitigation measure in preventing future disaster losses in areas of new development, and that planning, and development controls must be effective, to ensure that inappropriate developments do not occur[2].

A balanced approach to new development in Bush Fire Prone Areas that recognises the need to protect human life, provide safe operating environment for fire and emergency services while having due regard to the environmental impacts, development potential of land and the need to cater for growing populations is provided in this assessment.

[1] NSDR https://www.homeaffairs.gov.au/emergency/files/national-strategy-disaster-resilience.pdf

[2] Ellis, S et al (2004) National Inquiry on Bushfire Mitigation and Management (p.92)

3. Legislative Framework

The landuse planning framework as it relates to landuse planning and bushfire in NSW is embedded in the *Environmental Planning & Assessment Act 1979* (EP&A ACT), the *Rural Fires Act 1997* (RFA), *Rural Fires Regulation* 2013 (RFR) and *Planning for Bushfire Protection 2019* (PBP) and includes:

Strategic Planning Phase

The EP&A Act sets out the laws under which planning in NSW takes place. The main parts of the EP&A Act that relate to development assessment and approval are Part 3 (Planning Instruments) and Part 4 (Development Assessment).

EP&A Act Section 9.1 provides for the Planning Minister to direct councils to apply certain standards (detailed in the Direction) when preparing planning proposals for consideration. These Directions cover a range of practice areas and carry legislative weight.

Planning Direction 4.4 *Planning for Bush Fire Protection* (Appendix 2) requires Council to consult with the Commissioner of the NSW Rural Fire Service when preparing a planning proposal and consider any comments made. Importantly, a planning proposal must:

(a) have regard to Planning for Bush Fire Protection 2019
(b) introduce controls that avoid placing inappropriate developments in hazardous areas, and
(c) ensure that bushfire hazard reduction is not prohibited within the APZ.

Chapter 4 of PBP controls Strategic Planning, and details what must be included in a Strategic Bushfire Study (SBS). The SBS must be considered by Council, before any Planning Proposal to amend an LEP can be submitted to the Department of Planning, Industry & Environment (DPIE). The SBS will be considered by DPIE as part of the Gateway Determination. This determines whether the planning proposal should proceed further, or not, towards becoming an Environmental Planning Instrument (EPI).

EPIs are statutory plans made under Part 3 of the EP&A Act that guide development and land use. These plans include State Environmental Planning Policies (SEPPs) and Local Environmental Plans (LEPs). LEPs zone land and provide controls for a suitable range of permissible uses to be considered in more detail at the development assessment stage.

Development Assessment

Bush Fire Prone Land is designated in accordance with s.10.3 of the EP&A Act. Bush Fire Prone land (BFPL) is land which can support a bushfire or is subject to bushfire attack, that has been identified and mapped by the local council and certified by the Commissioner of the RFS. The BFPL provide a trigger for formal assessment of new development and compliance with PBP.

Integrated development, under Division 4.8 of the EP&A Act, is development requiring consent and one or more additional approvals. Section 4.46 of the EP&A Act requires a Bush Fire Safety Authority (BFSA) from the RFS under Section 100B of the RFA for residential and rural residential subdivision, or development of land for a Special Fire Protection Purpose (SFPP) on BFPL. An application for a BFSA must address the extent to which the development complies with PBP.

A BFSA authorises development to the extent that it complies with PBP including requirements for Asset Protection Zones (APZ), construction standards, landscaping, provision of water supply & utilities, access, and emergency management arrangements in combination considered by the Commissioner necessary to protect persons, property or the environment from danger that may arise from a bushfire.

New residential or rural residential subdivision or SFPP development needs to justify that the planning proposal results in development that can achieve a worst-case Bushfire Attack Level (BAL) of a maximum of BAL-29.

Building work on BFPL must comply with the requirements of the *National Construction Code* (NCC). Under the Deemed to Satisfy provisions of the NCC, building work on BFPL must comply with Australian Standard 3959 *Construction of buildings in bushfire-prone areas* (*AS 3959*) or the National Association of Steel Framed Housing (2014) *Steel Framed Construction in Bushfire Areas* (NASH Standard).

General Obligations

All owners and land managers (both public and private) have a duty to prevent the occurrence and spread of bushfires on or from their land. This duty is legislated under Section 63 of the *RFA*.

Local risk mitigation is coordinated through Bushfire Risk Management Plans (BRMP). These guide programs to implement specific treatments. Treatments may include such things as hazard reduction burning, establishing and maintaining APZ, grazing, preparing pre-incident plans, establishing and maintaining fire trails and community engagement. These may be applied to public and private landowners.

4. Planning for Bushfire Protection 2019

4.1. PBP - Strategic Planning Context

The specific objective of this Strategic Bushfire Study (SBS) is to assess the proposed development with the strategic assessment considerations in Chapter 4 of PBP. The SBS provides the opportunity to assess whether new development is appropriate in the bushfire hazard context at a strategic or landscape scale. It also provides the ability to assess the strategic implications of future development for bushfire mitigation and management. The SBS must first demonstrate the proposal complies with the overall Aim and Objectives of the document.

All new development on bushfire prone land must comply with PBP.
The **aim** of PBP (p. 10) is:

- *to provide for the protection of human life and minimise impacts on property from the threat of bushfire, while having due regard to development potential, site characteristics and protection of the environment*.

The **objectives** (PBP p. 10) are to:

- *Afford buildings and their occupants protection from exposure to a bushfire*
- *Provide for a defendable space to be located around buildings*
- *Provide appropriate separation between a hazard and buildings which, in combination with other measures, prevent the likely fire spread to buildings*
- *Ensure that appropriate operational access and egress for emergency service personnel and occupants is available*
- *Provide for ongoing management and maintenance of Bushfire Protection Measures; and*
- *Ensure that utility services are adequate to meet the* needs of firefighters

Chapter 4 of PBP articulates the regulatory framework for new development in NSW, along with a series of assessment considerations that are required before a determination can be made regarding a planning proposal.

PBP Section 4.2 (in part, emphasis added):

> *A Strategic Bush Fire Study must include, as a minimum, the components in Table 4.2.1.*
>
> *Once these strategic issues have been addressed, an assessment of whether the proposal can comply with this document should be carried out.* ***If the strategic issues cannot be resolved, then the proposal cannot comply with PBP and will not be supported by the NSW RFS****.*

Where the NSW RFS do not support a planning proposal it is highly unlikely to progress further because of the Ministerial Direction 4.4 discussed previously.

Strategic planning will need to take account of the next level of detail required at Development Application (DA), but without needing to provide complete final project plans, or full assessments for each lot or development proposed. This is designed to provide flexibility for later project stages while progressing the rezoning to permit the new uses.

To achieve compliance with PBP at DA stage, proposals must comply with either the acceptable solutions or the performance criteria, or a combination of both. The RFS currently assess all performance-based applications against PBP. While PBP is a performance-based document, the RFS have determined minimum standards for new development (PBP p. 26 and within each performance criteria – p. 43-48 for residential subdivision and p. 55 -61 for SFPP development).

- *For new residential development, potential building footprints must not be exposed to radiant heat levels exceeding 29 kW/m^2 on each proposed lot (calculated on a flame temperature of 1090 Kelvin); and*
- *SFPP developments, radiant heat levels of greater than 10kW/m^2 (calculated at flame temperature of 1200K) will not be experienced on any part of the building.*

Some dispensations are provided for specific types of SFPP development such as camping, bed and breakfast/ farm stay, ecotourism and manufactured home estates (PBP p. 55). Commercial, industrial and "other" development must meet the aim and objectives of PBP.

4.2. PBP - Strategic Planning compliance process using a Strategic Bushfire Study

A new requirement of the current version of PBP is that planning proposals in bushfire prone areas require the preparation of a Strategic Bushfire Study (SBS) (this document).

The SBS is a strategic level assessment, requiring a balance between providing sufficient information to determine the suitability of the site, without overly burdening proponents with detail to be managed / finalised at DA stage. The first principles are very clearly laid out though and the need for the link between stages is explicit. PBP Section 2.3 (p. 19) notes that:

> *The most important objective for strategic planning is to identify whether new development is appropriate subject to the identified bushfire risk on a landscape scale. An assessment of proposed land uses and potential for development to impact on existing infrastructure is also a key element of the strategic planning process in bushfire prone areas. Land use planning policies can be introduced to limit the number of people exposed to unacceptable risk.*
>
> *Once development has been assessed as being appropriate in its bush fire prone context, it will need to be capable of complying with PBP. The ability of proposed land uses and associated future developments to comply with PBP will be assessed at the strategic planning stage. The expectation will be that the development will be able to comply with PBP at the DA stage.*

Chapter 4 of PBP (p. 34) identifies the broad principles for strategic planning which apply to the risk assessment of an area which includes:

- *ensuring land is suitable for development in the context of bushfire risk;*
- *ensuring new development on BFPL will comply with PBP;*
- *minimising reliance on performance-based solutions;*
- *providing adequate infrastructure associated with emergency evacuation and firefighting operations; and*
- *facilitating appropriate ongoing land management practices.*

The document continues by articulating the strategic planning principles that should provide for the exclusion of inappropriate development in bushfire prone areas and that must be considered as part of the SBS as follows:

- *the development area is exposed to a high bushfire risk and should be avoided;*
- *the development is likely to be difficult to evacuate during a bushfire due to its siting in the landscape, access limitations, fire history and/or size and scale;*
- *the development will adversely effect other bushfire protection strategies or place existing development at increased risk;*
- *the development is within an area of high bushfire risk where density of existing development may cause evacuation issues for both existing and new occupants; and*
- *the development has environmental constraints to the area which cannot be overcome.*

PBP requires that the SBS must include, as a minimum, the components identified in Table 4.2.1 of PBP – Bush Fire Strategic Study (p.35) that will be discussed in detail.

This is shown as Figure 3 below.

ISSUE	DETAIL	ASSESSMENT CONSIDERATIONS

Bush fire landscape assessment	A bush fire landscape assessment considers the likelihood of a bush fire, its potential severity and intensity and the potential impact on life and property in the context of the broader surrounding landscape.	› The bush fire hazard in the surrounding area, including:
		  › Vegetation
		  › Topography
		  › Weather
		› The potential fire behaviour that might be generated based on the above;
		› Any history of bush fire in the area;
		› Potential fire runs into the site and the intensity of such fire runs; and
		› The difficulty in accessing and suppressing a fire, the continuity of bush fire hazards or the fragmentation of landscape fuels and the complexity of the associated terrain.

Land use assessment	The land use assessment will identify the most appropriate locations within the masterplan area or site layout for the proposed land uses.	› The risk profile of different areas of the development layout based on the above landscape study; › The proposed land use zones and permitted uses; › The most appropriate siting of different land uses based on risk profiles within the site (i.e. not locating development on ridge tops, SFPP development to be located in lower risk areas of the site); and › The impact of the siting of these uses on APZ provision.
Access and egress	A study of the existing and proposed road networks both within and external to the masterplan area or site layout.	› The capacity for the proposed road network to deal with evacuating residents and responding emergency services, based on the existing and proposed community profile; › The location of key access routes and direction of travel; and › The potential for development to be isolated in the event of a bush fire.
Emergency services	An assessment of the future impact of new development on emergency services.	› Consideration of the increase in demand for emergency services responding to a bush fire emergency including the need for new stations/ brigades; and › Impact on the ability of emergency services to carry out fire suppression in a bush fire emergency.
Infrastructure	An assessment of the issues associated with infrastructure and utilities.	› The ability of the reticulated water system to deal with a major bush fire event in terms of pressures, flows, and spacing of hydrants; and › Life safety issues associated with fire and proximity to high voltage power lines, natural gas supply lines etc.
Adjoining land	The impact of new development on adjoining landowners and their ability to undertake bush fire management.	› Consideration of the implications of a change in land use on adjoining land including increased pressure on BPMs through the implementation of Bush Fire Management Plans.

Figure 3: Requirements of a Bushfire Strategic Study (PBP p. 35)

Section 4.4.1 of PBP reiterates and reinforces Section 2.3 of PBP in more detail the requirement for planning proposals at Gateway stage to effectively masterplan the site at this stage (p.36):

> *Where an application for rezoning is for residential or SFPP development on BFPL, it shall include an indicative development layout. This enables an assessment of the suitability of the land for the proposed development given the bush fire risk and existing land uses.*
>
> *The proposal must demonstrate that the required APZs can be met on the development site and that the road network can support evacuation demands numbers in the event of an emergency. It is important that new development does not increase the level of bush fire risk to the existing community. A traffic report prepared by a suitably qualified traffic consultant may be required in circumstances where issues relating to access/egress are identified.*
>
> *In addition to the review of any layout designs, consideration must also be given to the LEP provisions relating to minimum lot sizes to ensure appropriate APZs can be accommodated within future subdivisions.*
>
> *Careful consideration should be given to other critical infrastructure development, that may impact on or be effected by bush fire events.*

This will drive the level of detail required to achieve a supported Gateway determination. In some cases, relatively small rezonings will benefit from undertaking a complete subdivision/development design at this stage, allowing the DA to effectively proceed in parallel to the Gateway.

When the LEP amendment is Gazetted, the DA should be well known by the local authority and the RFS and this should speed development consent approval.

To manage this overall process Blackash uses three techniques to assess and cross-check assessments of strategic bushfire risk, at multiple scales. These include a Landscape Strategic Assessment Tool (LSAT); review of the local Bush Fire Risk Management Plan; and a detailed site assessment demonstrating the site is suitable for the proposed future use.

Finally, this analysis is summarised against the requirements of Table 4.2.1 of PBP to demonstrate the planning proposal complies with PBP.

5. Bushfire Landscape Assessment

Blackash has developed a Landscape Scale Assessment Tool (LSAT) that combines quantitative and qualitative techniques. The approach used brings in elements of both the Bayesian decision making model, and Expert Judgment techniques. Bayesian decision making can be used where there is both objective and subjective data to analyse, and decisions need to be made on the probability of successful outcomes where there are high levels of uncertainty. Expert Judgement is a technique in which judgment is provided based upon a specific set of criteria and expertise that has been acquired in a particular discipline or industry. Blackash has over 70 years combined experience at all levels in government and private sector emergency management organisations, and over 40 years combined experience in operational firefighting.

Blackash Expert Judgement is applied consistent with the criteria used in the *National Construction Code* (NCC)[3] Assessment Methods and NSW Land & Environment Court practice that calls up *Schedule 7 – Expert Witness Code of Conduct* in the *Uniform Civil Procedure Rules 2005*.[4]

To use current best practice techniques, the Victorian *Planning Permit Applications Bushfire Management Overlay – Landscape Scale Threat Assessment* has been used as the base to assess the broader landscape scale potential of bushfire affecting the site [5]. Blackash has expanded and modified the criteria to emphasise the priority of life safety, and the criticality of bushfire Emergency Management & Evacuation Planning as part of the risk assessment process.

The LSAT provides information on the bushfire hazard more than 150 metres away from the site. The broader landscape and the potential size or scale of a bushfire is an important consideration in the assessment of bushfire risk and the potential consequences of a bushfire should it spread and impact the site. The likelihood of a bushfire, its severity and intensity, and the potential impact on life and property varies depending on where a site is located in the broader landscape. Landscape scale fires will place greater pressure on emergency response capability and will have a wider impact on roads and the length of time roads cannot be safely used. This will affect the likelihood of successful evacuations taking place across larger areas.

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3 https://www.abcb.gov.au/sites/default/files/resources/2021/UTNCC_Using_assessment_methods%20%281%29.pdf

4 https://legislation.nsw.gov.au/view/html/inforce/current/sl-2005-0418#sch.7

5 Victoria Department of Environment, Land, Water and Planning, Technical Guide – Planning permit applications bushfire management overlay, 2017

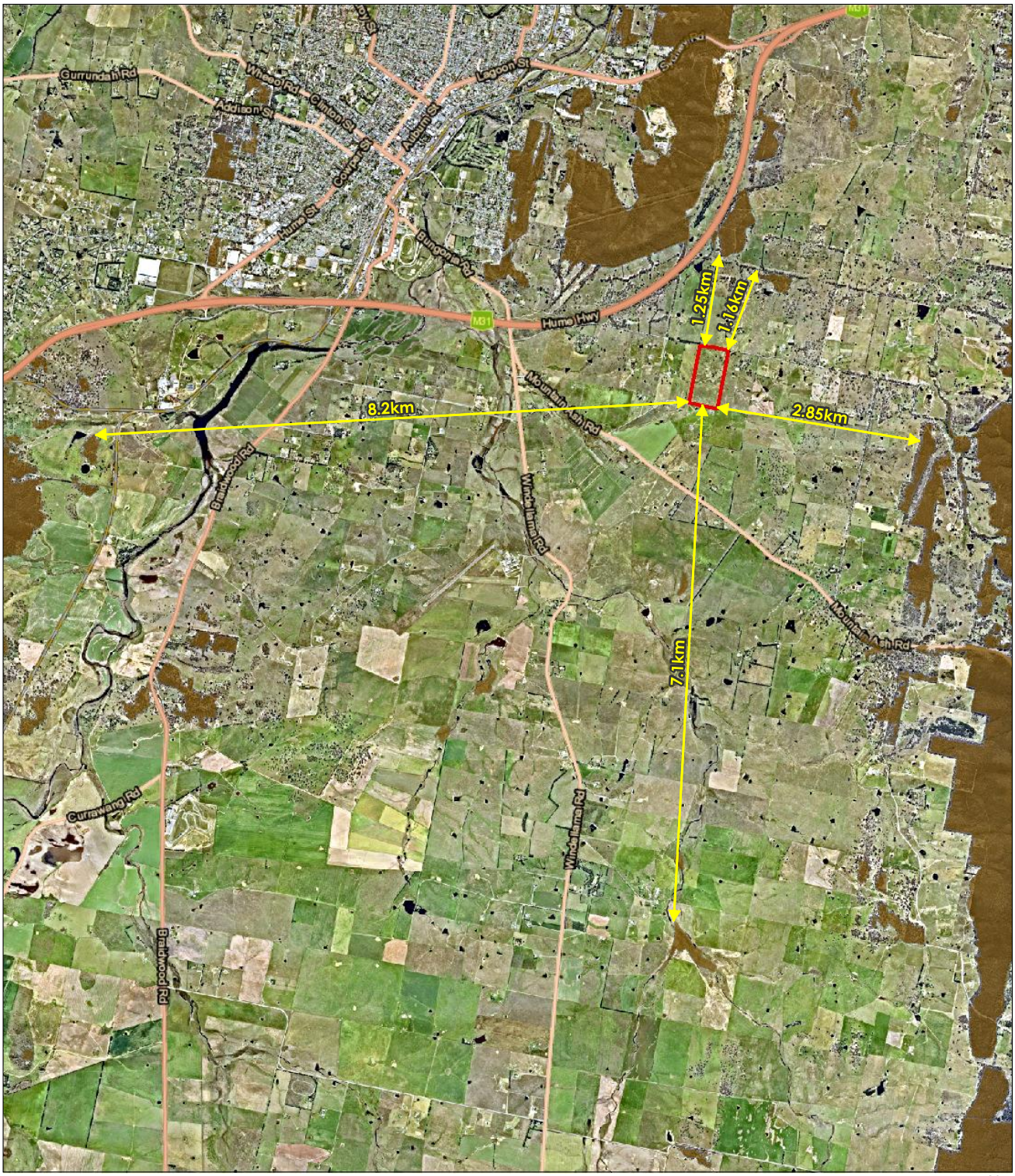

Figure 4: Landscape context

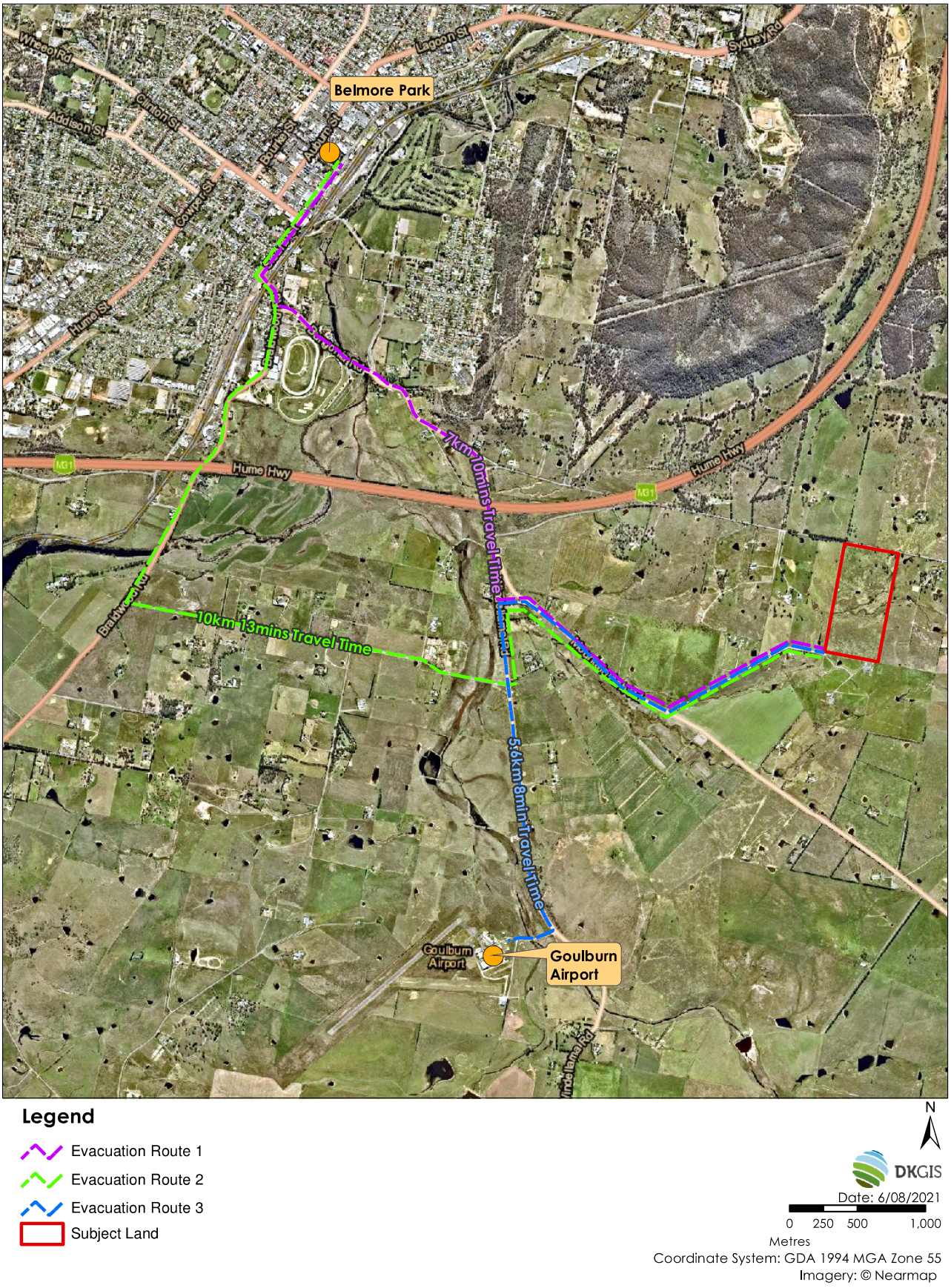

Figure 5: Evacuation route to Goulburn urban area

Multiple factors influence the potential bushfire behaviour at a landscape scale and the impacts this may have at site scale:

- extent and continuity of vegetation
- topography
- prevailing winds
- the potential fire run and area that is likely to be impacted by the fire, for example a fire in a grassland may only impact one or two streets into a residential area however a large bushfire may impact many kilometers in front of the main fire
- the impact on evacuation routes to safer places considering road networks, distances and landscape factors
- the location and exposure of the development to bushfire
- the ability to seek bushfire shelter on site or at alternative locations
- the extent of neighbourhood-scale damage the bushfire may produce.

The landscape scale context is shown at Figure 4. The planning proposal site is clearly within a grassland setting. This will be further detailed in discussion of the Goulburn Mulwaree Bush Fire Prone Lands Map in Section 7 below.

The topography can be described as flat to gently undulating for at least 2km in each direction with slopes no greater than 0-5^0.

There are three (3) main evacuation routes, and the routes are largely on two-lane sealed roads.

- The distance to the urban area of Goulburn is approximately 7km for evacuation to the north via Windellama Road and Bungonia Roadd.
- The alternative route to Goulburn is 10km via Windellama Road, Brisbane Grove Road and Braidwood Road.
- The distance to Goulburn Airport is approximately 6km for evacuation to the south via Windellama Road.

All routes are free of significant areas of bushland and the few pinch points are unlikely to have a significant impact on evacuation.

The landscape scale assessment provides a rating of Low, Moderate, High, or Extreme and is shown in Table 1.

Overall Landscape Scale Assessment Tool threat rating:

When the individual factors are scored and considered overall, the Landscape Scale Threat for the site is assessed as **Low**.

Table 1: Blackash Landscape Scale Assessment Tool – 292 Rosemont Road, Boxer Creek

Parameter	Low Landscape Scale Threat		Moderate Landscape Scale Threat		High Landscape Scale Threat		Extreme Landscape Scale Threat	
Landscape Vegetation Threat	There is little vegetation beyond 150 metres of the site (except grasslands and low-threat vegetation) and will not result in neighbourhood scale destruction of property.	✓	The type and extent of vegetation beyond 150m from the site may result in neighbourhood-scale destruction as it interacts with the bushfire hazard on and close to a site.		The type and extent of vegetation beyond 150m is likely to result in neighbourhood-scale destruction as it interacts with the bushfire hazard on and close to a site.		The type and extent of vegetation beyond 150m will result in neighbourhood-scale destruction as it interacts with the bushfire hazard on and close to a site.	
Vegetation Location	Bushfire can only approach from one aspect and the vegetation is surrounded by a suburban, township or urban area managed in a minimum fuel condition.		Bushfire can only approach from one aspect and the site is within a suburban, township or urban area managed in a minimum fuel condition.		Bushfire can approach from more than one aspect and site is on the interface with a developed area managed in a minimum fuel condition.	✓	Bushfire can approach from more than one aspect and fires have hours or days to grow and develop before impacting and/or site is surrounded by unmanaged vegetation.	
Bushfire Behaviour	Extreme bushfire behaviour at the site is not possible given the broader landscape.	✓	Extreme bushfire behaviour at the site is unlikely in this broader landscape.		Extreme bushfire behaviour at the site is likely due to the broader landscape.		Extreme bushfire behaviour is very likely due to the broader landscape.	
Separation	Hazard separation between extreme bushfire hazard and buildings of greater than 100m.	✓	Hazard separation between extreme bushfire hazard and buildings of 50-100m.		Hazard separation between extreme bushfire hazard and buildings of 20-50m.		Hazard separation between extreme bushfire hazard and buildings of <20m.	
Shelter	Immediate access is available to a place that provides shelter from bushfire.	✓	Access is readily available to a place that provides shelter from bushfire. This will often be the surrounding developed area.		Access to an appropriate place that provides shelter from bushfire is not certain.		Access to an appropriate place that provides shelter from bushfire is not possible unless there is a public bushfire refuge or private shelter.	
Vegetation Corridors	Vegetation corridors within the site do not enable fire to enter and move through the site by a continuous fire path from the primary fire source feature.		Vegetation corridors within the site are unlikely to enable fire to enter and move through the site by a continuous fire path from the primary fire source feature.	✓	Vegetation corridors within the site may enable fire to enter and move through the site by a continuous fire path from the primary fire source feature.		Vegetation corridors provide for passage of fire to enter and move through the site.	
Evacuation	Good, multiple route evacuation is possible and connects with the public road network.		Evacuation to alternate location that provides life safety refuge is <200m.		Evacuation to alternate location that provides life safety refuge is 200m – 10km.	✓	Evacuation to alternate location that provides life safety refuge is >10km.	
Isolation	Seamless integration with existing settlement – no effect on evacuation.		Short bushland pinch points that may restrict access temporarily or carry fire across roads. Unlikely impact on evacuation.	✓	Pinch points that are likely to restrict access along evacuation routes for short periods (15-30 minutes) and carry fire across roads.		Large areas of bushland or multiple pinch points along evacuation routes that could block evacuation routes for extended time.	
Access	Site is within urban area. public road network with multiple access / egress routes.		Access to public road network with multiple access / egress routes.	✓	More than one access / egress routes.		Only one access / egress route.	
TOTAL		**4**		**3**		**2**		**0**

Overall Threat Rating: LOW Landscape Scale Threat

Assessment Notes:

Assessed at Forest Fire Danger Index of 100 as the design fire, using Method 1 in accordance with PBP 2019.

The scoring system uses a multiplier for each Threat level based on a conservative life safety approach.

The scaled scores for each Threat assessment are totalled and final scores are placed within a range for the final score

6. Bush Fire Risk Management Plan Assessment

The Southern Tablelands Bush Fire Management Committee (BFMC) produces the *Bush Fire Risk Management Plan* (BRMP) that is a strategic document that identifies community assets at risk and sets out a five-year program of coordinated multi-agency treatments to reduce the risk of bush fire to the assets. Treatments may include such things as mechanical hazard reduction (e.g., slashing, mowing), hazard reduction burning, grazing, community education and fire trail maintenance. The BRMP was last updated in 2019.

The BRMP uses a state-wide methodology to compare all assets across the state in a consistent way. [6]

It is noted that that the Southern Tablelands BFMC covers 14,551 square kilometres. Land tenure and land use are critical for context, with only 5% of the BFMC area being National Park or Forest NSW, and 91.50% of land privately owned and predominantly used for extensive agriculture.

The number of fires and impacts need to be placed in context of this very large area.

The BRMP (p.9) identifies the following:

> *Climate and bush fire season*
>
> *The typical / average climate in the Southern Tablelands BFMC area is temperate to cool characterised by warm to hot summers and cool winters, with peak rainfall generally occurring during winter and spring. The area experiences yearly temperatures from about -5 degrees Celsius (in the winter months of June, July and August) to 35-37 degrees Celsius in the summer months (December, January and February) although colder and higher temperatures are not uncommon.*
>
> *As the area is both large and diverse, rainfall varies considerably. Some areas experience average rainfall of approximately 800mm to 1000mm per year, whereas some areas experience a lower average annual rainfall (e.g. 600mm in the north of the Upper Lachlan Shire towards the Abercrombie River). Generally, it can be stated that rainfall is both unreliable and at its lowest during summer months, resulting in substantial curing of pastoral and grazing land which covers a large proportion of the area.*

[6] https://www.rfs.nsw.gov.au/__data/assets/pdf_file/0012/2631/Southern-Tablelands-BFRMP.PDF

Prevailing weather conditions associated with the bush fire season in the Southern Tablelands BFMC area are north/north westerly winds, although in late afternoons southerly and easterly winds may occur for short periods. Lightning strikes during storms occur frequently in the bush fire season.

The bush fire season generally runs from October to March/April.

History of bushfire frequency and ignition cause

The Southern Tablelands BFMC area has on average 265 bush fires per year, of which 5 could be considered to be large fires. Major fires occur sporadically with about 3 in a 5 year period. The frequency of significant or major fires has varied between the districts comprising the Southern Tablelands area. Generally, Goulburn/Mulwaree has a history of major fires occurring in a cycle of 5 to 7 years, whereas Upper Lachlan has an approximately 7 to 10 year cycle and Yass Valley has a 2.5 year cycle of major fires.

The main sources of ignition in the Southern Tablelands BFMC area are:

- *Lightning*
- *Escapes from legal burning off*
- *Illegal burning off*
- *Human error*
- *Arson*

Lightning is the greatest source of ignition within the area, and is mainly associated with late spring and summer thunderstorm activity which is normally (but not always) accompanied by some rainfall.

Escapes from legal burning are mainly in rural areas, and can occur in any part of the area. These activities are mainly but not exclusively in autumn through to spring. These comments apply equally to illegal burning off.

Ignition caused by human error covers the use of farm machinery (e.g. during slashing), use of motor mowers, welding, and large numbers of tourists increasing the risk of careless lighting of fires and disposal of ignition sources (e.g. cigarette butts on major highways).

BRMP references to the planning proposal site

The BRMP considers Human Settlement Assets at a broad scale of localities or villages. The planning proposal site is not specifically identified within the plan. The area appears to be considered as part of the Goulburn City Development area – Asset 53 and is located on Map 1 of the BRMP.

The BRMP rates the site as **4 - Medium Risk** only, arriving at the rating by considering the Likelihood of Bushfire spreading and impacting on assets as "unlikely" and the consequence as "major".

All but six Human Settlement Assets are rated as Medium, and the planning proposal site was not identified as one of these higher risk sites.

No specific treatments are identified for the sites rated as Medium Risk.

Analysis of the Southern Tablelands BRMP results in the conclusion that the bushfire risk at the planning proposal site is **Medium** risk only.

7. Bushfire Attack Level (BAL) modelling

7.1. Methodology

PBP provides a methodology to determine the bushfire threat and commensurate size of any Asset Protection Zone (APZ) that may be required to offset possible bushfire attack. These elements include the potential hazardous landscape that may affect the site and the effective slope within that hazardous vegetation. For new residential or rural residential subdivision, APZ requirements are based on keeping radiant heat levels at new buildings below 29kW/m^2.

The following assessment is prepared in accordance with Section 100B of the RFA, Section 44 of the *Rural Fires Regulation 2013* (RFR) and PBP. This assessment is based on the following resources:

- Planning for Bush Fire Protection (NSW RFS, 2019);
- Goulburn Mulwaree Council Bush Fire Prone Land Map;
- Aerial mapping; and
- Detailed GIS and Site analysis.

The methodology used in this assessment is in accordance with PBP (p.80) and is outlined in the following sections.

7.2. Bush Fire Prone Land Mapping

The site is identified as 'bush fire prone land' (see Figure 6) for the purposes of Section 10.3 of the EP&A ACT and the legislative requirements for building on bush fire prone lands are applicable.

Bush fire prone land maps provide a trigger for the development assessment provisions and consideration of sites that are bushfire prone. Bush Fire Prone land (BFPL) is land that has been identified by council, which can support a bushfire or is subject to bushfire attack. Bush fire prone land maps are prepared by local council and certified by the Commissioner of the NSW RFS.

7.3. Fire Danger Weather District

The Goulburn Mulwaree Council is in the Southern Ranges region in NSW and has a FFDI set at 100.

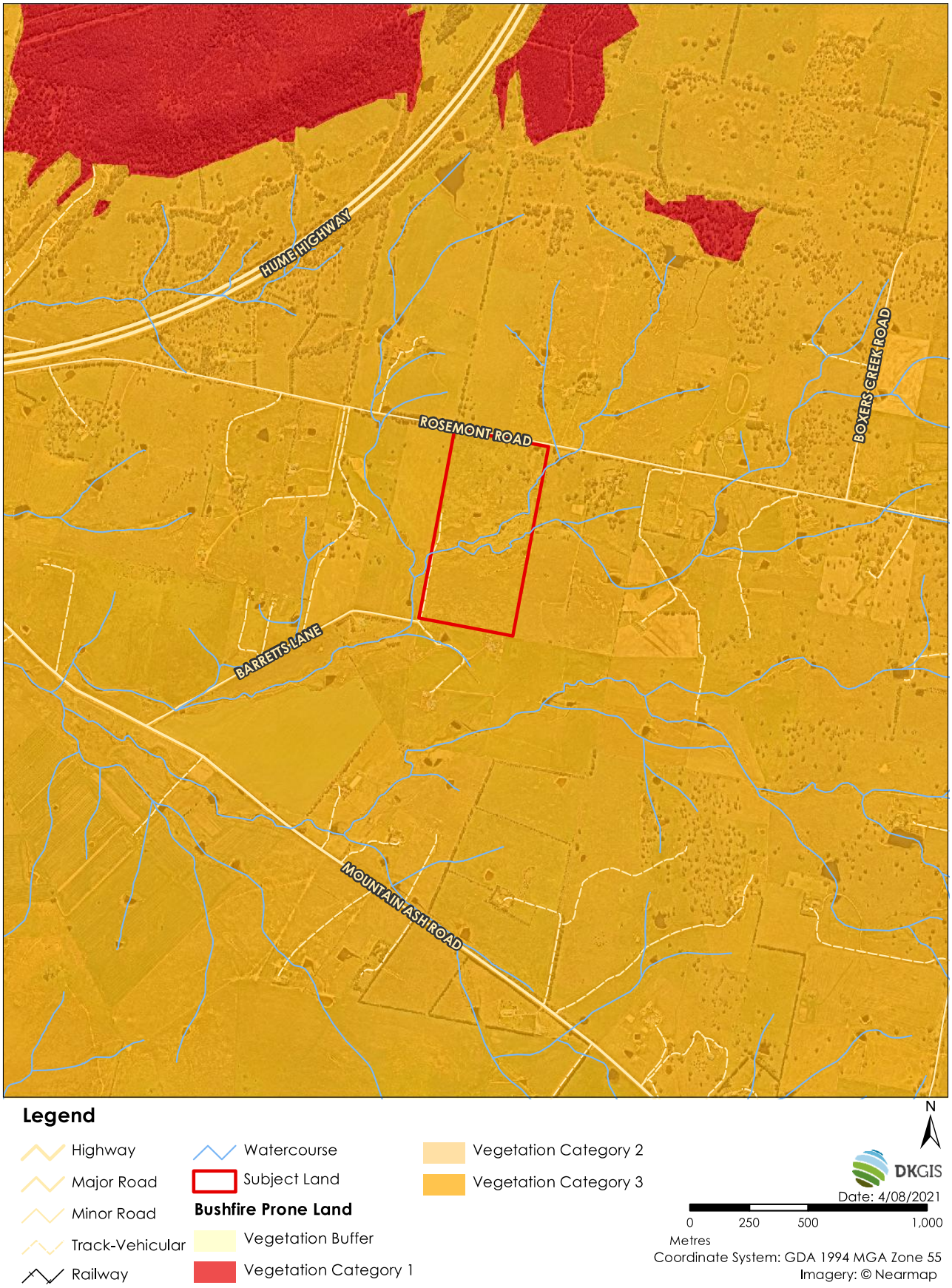

Figure 6: Extract from Goulburn Mulwaree Bush Fire Prone Lands Map

7.4.Vegetation Assessment

The Section 44 of the RFR requires a classification of the vegetation on and surrounding the property (out to 140 metres from the boundaries of the property) in accordance with the system for classification of vegetation contained in PBP.

Predominant Vegetation is classified by structure or formation using the system adopted by Keith (2004) and by the general description using PBP.

The site and surrounding areas are Grassland including the drainage corridors running through the site.

See Figure 7.

7.5. Slopes Influencing Bushfire Behavior

The RF Reg requires an assessment of the slope of the land on and surrounding the property (out to 100 metres from the boundaries of the property or from the proposed development footprint.

The effective slope influencing fire behaviour approaching the sites has been assessed in accordance with the methodology specified within PBP. The effective slope is the slope of the ground under the hazard (vegetation). It is not the slope between the vegetation and the building (slope located between the asset and vegetation is the site slope).

The site and surrounds are gently undulating, with multiple drainage lines in the area and across the site. The effective slopes for bushfire consideration are in the 0-5 degrees downslope range and some upslope areas. The actual slopes are relatively short and related to the local drainage lines.

See Figure 7.

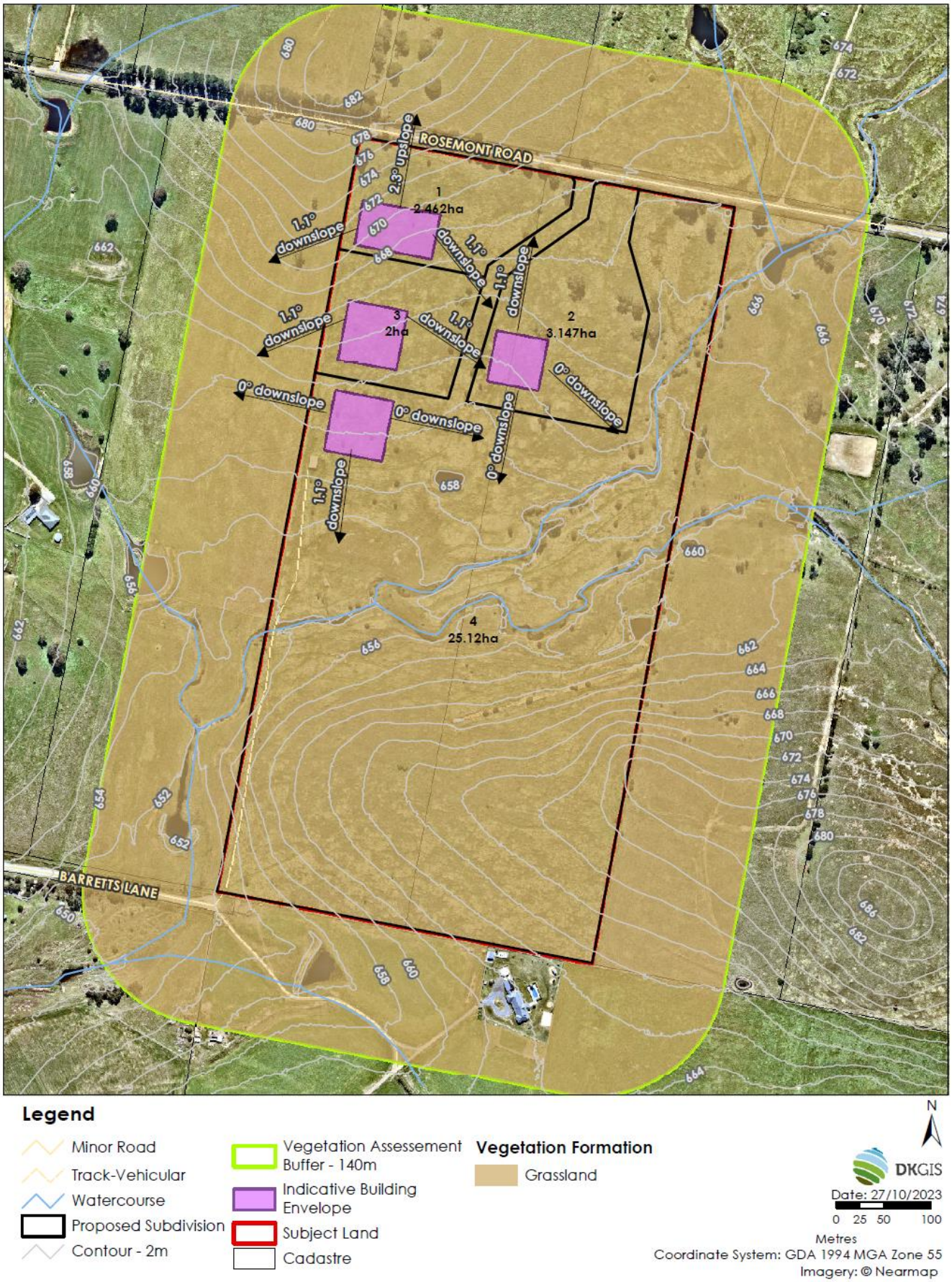

Figure 7: Vegetation and Slope Map

8. Bushfire Protection Measures

Chapter 5 of PBP:

> *Where a new dwelling entitlement is created, it is important to ensure that appropriate BPMs are provided within the new allotment. This allows for protection measures to be fully incorporated at the design stage of the development (p.39).*

Detailed site analysis and the application of a combination of bushfire protection measures (BPMs) is required to achieve an acceptable development outcome. The SBS needs to demonstrate that a suitable combination of BPMs can be provided if a new zone is approved, and to ensure these will be provided at DA stage.

The BPMs work in combination to provide a suite of measures that meet the specific objectives outlined in Section 5.2 (p.42). The BPMs are shown in Figure 8.

Appropriate combinations depend upon geographic location and site circumstances.

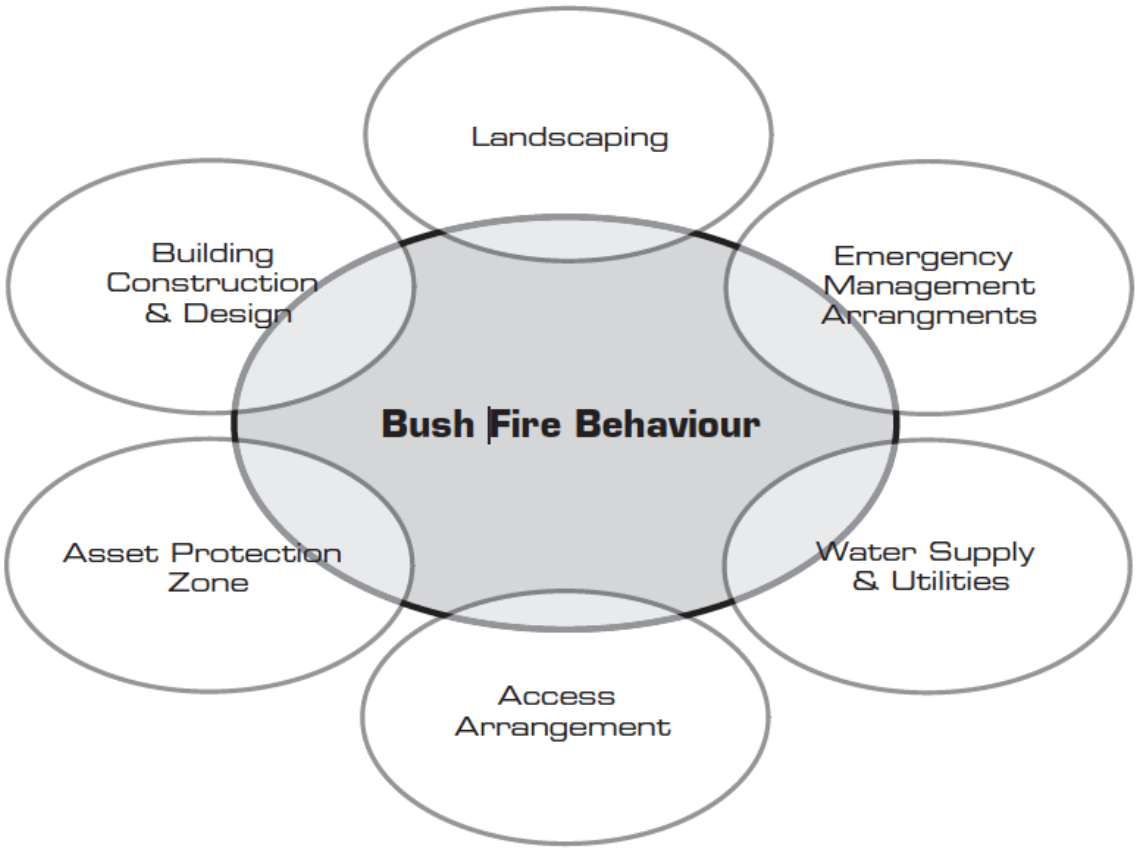

Figure 8: Bushfire Protection Measures in Combination (source PBP p. 26).

8.1. Asset Protection Zones

For proposed new residential subdivision, PBP requires that a minimum separation is provided in the form of Asset Protection Zones (APZ). The APZ is a fuel-reduced, physical separation between buildings and bushfire hazards. For residential developments, APZ requirements are based on keeping radiant heat levels at buildings below 29kW/m^2 as the maximum exposure on all sides of the building.

The proposed development location consists of, and is surrounded by, grassland on all sides. Grasslands are mapped as Category 3 medium risk bushfire vegetation under the RFS *Guide for Bush Fire Prone Land Mapping* (November 2015).[7]

In this proposal for rural residential subdivision all the lots are larger than 2 Ha and each can locate a substantial building envelope (30m x 30m) surrounded by 20m wide APZ on multiple locations on the proposed block. This is depicted in Figure 9.

Table 2: APZ Assessment – indicative slopes to demonstrate compliance in various locations.

Direction	Slope	Vegetation	Minimum Required APZ	Minimum APZ provided
North	0-5° Upslope	Grassland	10 metres	20 metres
East	>0-5° Downslope	Grassland	12 metres	20 metres
South	>0-5° Downslope	Grassland	12 metres	20 metres
West	>0-5° Downslope	Grassland	12 metres	20 metres

The 20m wide APZs shown demonstrate that there is certainty that each lot can provide suitable APZ and minimum defendable space. These APZs exceed all the required standards detailed in Table A1.12.2 on p.90 of PBP and support the minimum APZ requirements for 29kW/m^2.

The combination building envelope and APZ have been depicted in this way to allow for flexibility at subdivision and later dwelling construction stages. This allows greater choice for future owners to manage other issues such as flooding, views and setbacks from neighbours.

This complies with PBP.

[7] https://www.rfs.nsw.gov.au/__data/assets/pdf_file/0011/4412/Guideline-for-Councils-to-Bushfire-Prone-Area-Land-Mapping.pdf

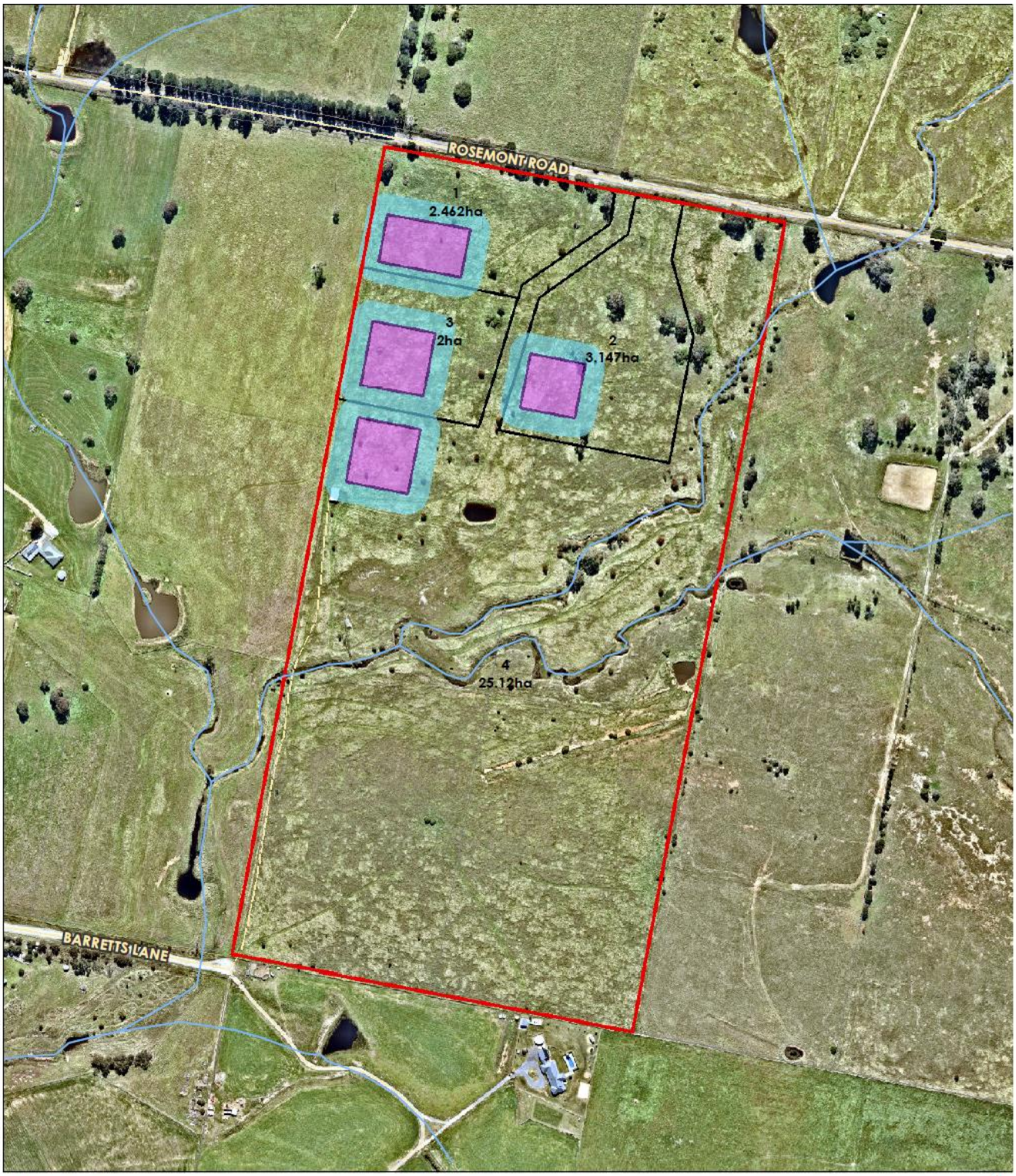

Figure 9: Depiction in context of combined building envelope and APZ (50m x 50m)

8.2. Bushfire Attack Levels

The Bushfire Attack Levels (BAL) is a means of measuring the ability of a building to withstand attack from bushfire. The form of bushfire attack and the severity will vary according to the conditions (FDI, vegetation, slope and setback) on the site.

The BAL assesses the severity of a building's potential exposure to ember attack, radiant heat and direct flame contact, using increments of radiant heat expressed in kilowatts per square metre, which is the basis for establishing the requirements for construction to improve protection of a building from potential attack by a bushfire, as defined in *Australian Standard AS 3959-2009 Construction of buildings in bushfire-prone areas* (AS 3959-2018).

The BAL ratings are used as the basis for establishing the requirements for construction to improve protection of a (proposed) building from potential bushfire attack. The specific BAL requirements will be determined at the Development Application stage for each dwelling, but all lots can achieve BAL-29 or less.

This complies with PBP.

8.3. Access

The proposed development fronts Rosemont Road to the north which provides direct access to proposed Lots 1 & 2 and access to Lots 3 & 4 via an internal access driveway. New access construction is limited to suitable access to the public road network, and internal property access. This can all be provided in a straightforward manner and will have no significant impact on the local road network.

The local road network to the Goulburn urban area is typical two-lane sealed rural roads with a 7-10m wide carriageway set within an overall 20m wide road reserve. Goulburn Mulwaree Council is the local road authority and undertakes maintenance including periodic vegetation slashing of the road verges.

As outlined above in Section 5, there are multiple evacuation routes to safer places including the urban area of Goulburn and the Goulburn Airport.

The proposed new roads can meet the standards detailed in the provisions of 5.3.2 of PBP.

This complies with PBP.

8.4. Water Supplies

The Site will not be serviced by reticulated water. There will be ample space for the 10,000L per lot firefighting water tank requirement in Table 5.3d to be suitably located. Individual dwelling DAs will ultimately be conditioned to require metal tanks, pipes and Storz fittings consistent with Table 5.3c.

This complies with PBP.

8.5. Gas and electrical supplies

Electricity supply for the new development will comply with PBP. Any gas services are to be installed and maintained in accordance with *Australian Standard AS/NZS 1596 'The storage and handling of LP Gas'* (Standards Australia 2008).

This complies with PBP.

9. Analysis of the three risk assessment methods

The Landscape Scale Assessment Tool (LSAT) rates the planning proposal site as **Low Threat**.

The Goulburn Mulwaree BRMP rates the site as **4 – Medium Risk**.

The Bushfire Attack Level modelling rates the site as being capable of providing building footprints for multiple lots that are exposed to radiant heat of **<29 kW/m²**. The site has been shown to comply with the Aim and Objectives of PBP, and the specific requirements for rural residential subdivision detailed in Chapter 5.

The three Bushfire Risk Assessment methodologies are broadly consistent near the bottom of their respective scales and consistent with PBP.

Conclusion:
The planning proposal has been analysed using multiple methods and geographic scales, and assessed against both the Aim and Objectives of PBP and the performance criteria for rural residential subdivision outlined in Chapter 5. The land is **suitable** for rural residential development with respect to bushfire protection.

This planning proposal demonstrates it is consistent with Section 2.3 Strategic Planning (p. 19):

> *Strategic bush fire planning and studies are needed to avoid high risk areas, ensure that zoning is appropriate to allow for adequate emergency access, egress, and water supplies, and to ensure that future compliance with this document is achievable.*
>
> *The most important objective for strategic planning is to identify whether new development is appropriate subject to the identified bush fire risk on a landscape scale. An assessment of proposed land uses and potential for development to impact on existing infrastructure is also a key element of the strategic planning process in bush fire prone areas.*
>
> *Once development has been assessed as being appropriate in its bush fire prone context, it will need to be capable of complying with PBP. The ability of proposed land uses and associated future developments to comply with PBP will be assessed at the strategic planning stage. The expectation will be that the development will be able to comply with PBP at the DA stage.*

10. Assessment of PBP Chapter 4 Strategic Planning - Table 4.2.1

Chapter 4 of PBP (p. 34) identifies the broad principles for strategic planning which apply to the risk assessment of an area which includes:

- *ensuring land is suitable for development in the context of bushfire risk;*
- *ensuring new development on BFPL will comply with PBP;*
- *minimising reliance on performance-based solutions;*
- *providing adequate infrastructure associated with emergency evacuation and firefighting operations; and*
- *facilitating appropriate ongoing land management practices*.

The document continues by articulating the strategic planning principles that should provide for the exclusion of inappropriate development in bushfire prone areas and that must be considered as part of the SBS as follows:

- *the development area is exposed to a high bushfire risk and should be avoided;*
- *the development is likely to be difficult to evacuate during a bushfire due to its siting in the landscape, access limitations, fire history and/or size and scale;*
- *the development will adversely effect other bushfire protection strategies or place existing development at increased risk;*
- *the development is within an area of high bushfire risk where density of existing development may cause evacuation issues for both existing and new occupants; and*
- *the development has environmental constraints to the area which cannot be overcome.*

PBP requires that the SBS must include, as a minimum, the components identified in Table 4.2.1 of PBP – Bush Fire Strategic Study (p.35) that will be discussed in detail.

Each individual assessment consideration specified in Table 4.2.1 will be separately considered below, and a summary table demonstrating compliance and linking to the evidence of that compliance is included as Table 3.

Chapter 4 requires consideration of the planning proposal within a wider landscape or sub-regional scale; and looking at matters that are likely to arise when there is a significant wildfire incident. This chapter is seeking to demonstrate that credible significant wildfire scenarios and

the resulting firefighting operations are understood, and that the planning proposal will avoid or minimise impacts from such fires.

This Chapter requires a deep understanding of emergency management and incident operations to assess the proposal against common problem scenarios, particularly for large scale fires where infrastructure is impacted, emergency resources may be stretched, human behaviour may be unpredictable or changed by the actual impact of a wildfire, and where levels of maintenance, both on and off site may not be ideal.

In short, it needs to be demonstrated that the proposed development will be able to work under real world conditions, where there may be no emergency services resources available to assist, where conditions may be chaotic, and where infrastructure outside the development may be impacted. Under these circumstances, has the development been designed and constructed to avoid or minimise risks to life, property, and the environment?

10.1. Bush fire landscape assessment

The bushfire landscape assessment section is designed to ensure that consideration of the location and type of development looks at the wider perspective involving more than just lot scale considerations (although including these in the consideration). This means looking at development within its broader landscape scale setting. This will vary for each site and need to also consider factors such as land tenure and formal management arrangements in some cases.

The bush fire hazard in the surrounding area, including:

- *Vegetation*
- *Topography*
- *Weather*

As outlined in Sections 5, 6 and 7 above, and consistent with Table A1.12.2, the bushfire hazard is of Low to Moderate risk. All proposed Lots can contain a large building envelope (30m x 30m) with a surrounding 20 metre APZ, which would exceed the Grassland requirements and in fact meet the Grassland Deeming Provisions (p. 71).

The potential fire behaviour that might be generated based on the above;

The maximum potential fire behaviour would be at the upper level of Grassland fires and can be managed onsite and with local resources.

Any history of bush fire in the area;

No fire history maps are publicly available, but the history of grassland fires would be typical of many areas and can be managed onsite and with local resources.

Potential fire runs into the site and the intensity of such fire runs;

Potential fire runs could be from any direction and would need to be strongly wind driven to reach upper intensity levels. The proposal can manage such fires onsite using the suite of BPM.

The difficulty in accessing and suppressing a fire, the continuity of bush fire hazards or the fragmentation of landscape fuels and the complexity of the associated terrain.

There are no identified difficulties in accessing and suppressing the fires that could occur here. The proposal would in fact provide improved access and water supplies in the local area.

The overall area is characterised by gently undulating grasslands and rural residential development. The city of Goulburn is the urban development to the north, and this provides a significant break in the landscape. The grasslands are further broken up by more intensively farmed areas, roads, drainage lines, powerline easements and other small breaks providing a range of suppression options based on specific conditions during an incident.

Access is excellent with the urban area of Goulburn providing several routes to the site, Hume Highway access is within 6km of the site, and there is an airport 6km south of the site. The local road network is two-lane sealed generally and the terrain is not considered complex.

10.2. Land use assessment

The risk profile of different areas of the development layout based on the above landscape study;

As shown in the planning proposal plans and analysed in Sections 5, 6 & 7 above, the risk profile of the development areas is broadly the same, with no areas being proposed that would generate excessive risk. The land is suitable for the proposed rural residential subdivision purpose.

The proposed land use zones and permitted uses;

The planning proposal responds to the site and considers constraints of bushfire and flooding. The proposed layout can readily accommodate rural residential development lots.

The most appropriate siting of different land uses based on risk profiles within the site (i.e. not locating development on ridge tops, SFPP development to be located in lower risk areas of the site);

The planning proposal responds to the site and considers constraints of bushfire and flooding. The proposed layout can readily accommodate rural residential development lots, and there is significant flexibility even where larger than required 20 metre wide APZs are provided, and which exceed the standards detailed in Table A1.12.2.

The impact of the siting of these uses on APZ provision.

The proposed layout can readily accommodate rural residential development lots, and there is significant flexibility even where 20 metre wide APZs are provided, and which exceed the standards detailed in Table A1.12.2.

10.3. Access and egress

The capacity for the proposed road network to deal with evacuating residents and responding emergency services, based on the existing and proposed community profile;

As detailed in Section 5, the proposed and existing local road networks have capacity to manage evacuating residents and responding emergency services.

The location of key access routes and direction of travel;

As detailed in Section 5, there are multiple evacuation routes to the north and south, and all are relatively short and unlikely to be impacted by fire for any extended period of time. There are very few pinch points and no extensive areas of forest or woodland likely to result in road closure for more than 0.5-1 hours at most.

The potential for development to be isolated in the event of a bush fire.

There is always some chance of the development becoming isolated, but this would be for a very short time during a grass fire. There are very few pinch points and no extensive areas of forest or woodland likely to result in road closure for more than 0.5-1 hours at most. The future subdivision will have BPMs in place to manage the impact of a fire front passing through the site.

10.4. Emergency services

Consideration of the increase in demand for emergency services responding to a bush fire emergency including the need for new stations/brigades;

The scale of the proposal, being only 4 lots, will have insignificant impact on the demand for emergency services overall. The very minor impact will be offset by the suite of BPM making the development site relatively self-sufficient. The additional Static Water Supplies may in fact assist other local fire activity.

Impact on the ability of emergency services to carry out fire suppression in a bush fire emergency.

The development is situated in a Low to Medium risk area and will comply with all aspects of PBP. There will be no significant negative impact on fire suppression. The location of additional firefighting water supplies may be a positive impact where owners are part of the RFS Static Water Supply (SWS) program.

10.5. Infrastructure

The ability of the reticulated water system to deal with a major bush fire event in terms of pressures, flows, and spacing of hydrants;

N/A

The subdivision and individual DAs will be required to provide a minimum of 10,000 L of dedicated firefighting water supply, metal pipes and fittings, RFS Storz fittings on each development lot. All static water supplies can be conditioned to ensure adequate access by fire tankers.

Life safety issues associated with fire and proximity to high voltage power lines, natural gas supply lines etc.

There are existing high voltage supply lines crossing proposed Lot 4. There are no life safety issues related to these and the infrastructure provider will retain an easement to maintain the vegetation underneath the lines. The size of the lots and the general lack of constraints to locating a building envelope well away from the lines will eliminate any life safety issues related to the lines.

10.6. Adjoining land

Consideration of the implications of a change in land use on adjoining land including increased pressure on BPMs through the implementation of Bush Fire Management Plans.

The creation of another 5 rural residential lots could possibly increase the chance of a wildfire ignition, but this is considered a minor increase of risk to the adjoining landowners. The proposal is like the existing development pattern in the area, and has the potential to improve overall neighbourhood readiness, water supplies and active land management.

10.7. Summary Table for Strategic Bushfire Study

Table 3: Strategic bushfire study - compliance with PBP Table 4.2.1.

Issue	Detail	Assessment considerations	Evidence	Suitable site
Bush fire landscape assessment	A bush fire landscape assessment considers the likelihood of a bush fire, its potential severity and intensity and the potential impact on life and property in the context of the broader surrounding landscape.	The bushfire hazard in the surrounding area including: • Vegetation • Topography • Weather	Landscape Scale Assessment Tool, Bush Fire Risk Management Plan review, Bushfire Attack Level modelling and consideration of BPMs. Sections 5-10 above.	**YES**
		The potential fire behaviour that might be generated based on the above	Potential is limited to grassland fires which can be managed on site. Sections 5-10 above.	**YES**
		Any history of bush fire in the area.	Potential is limited to grassland fires which can be managed on site. Sections 5-10 above.	**YES**
		Potential fire runs into the site and the intensity of such fire runs; and	Potential is limited to grassland fires which can be managed on site. Sections 5-10 above.	**YES**
		The difficulty in accessing and suppressing a fire, the continuity of bush fire hazards or the fragmentation of landscape fuels and the complexity of the associated terrain.	No identified difficulties for accessing and suppressing the type of fires that may occur here. Gently undulating terrain, good local road network, close to major urban development etc. Sections 5-10 above.	**YES**
Land use assessment	The land use assessment will identify the most appropriate locations within the masterplan area or site layout for the proposed land uses.	The risk profile of different areas of the development layout based on the above landscape study	The risk profile of the whole site is essentially the same, with no areas of extreme risk. Rural residential development is a suitable and practical use of the land. Sections 5-10 above.	**YES**

Issue	Detail	Assessment considerations	Evidence	Suitable site
		The proposed land use zones and permitted uses	Rural residential development is a suitable and practical use of the land.	YES
		The most appropriate siting of different land uses based on risk profiles within the site (i.e. not locating development on ridge tops, SFPP development to be located in lower risk areas of the site); and	The proposed layout can readily accommodate rural residential development lots, and there is significant flexibility even when 20m APZs are provided, which exceed the standards detailed in Table A1.12.2. Sections 5-10 above.	YES
Access and egress	A study of the existing and proposed road networks both within and external to the masterplan area or site layout.	The capacity for the proposed road network to deal with evacuating residents and responding emergency services, based on the existing and proposed community profile;	Minor population increase in comparison with broader area; two lane-sealed road network is adequate; good access to Hume Highway. Sections 5-10 above.	YES
		The location of key access routes and direction of travel; and	Multiple key access routes to the City of Goulburn to north, and the Goulburn Airport to south. Sections 5-10 above.	YES
		The potential for development to be isolated in the event of a bush fire.	Possible for very short time. There are very few pinch points and no extensive areas of forest or woodland likely to result in road closure for more than 0.5-1 hours at most.	YES
Emergency services	An assessment of the future impact of new development on emergency services.	Consideration of the increase in demand for emergency services responding to a bush fire emergency including the need for new stations/ brigades; and	Insignificant impact as only 5 Lots in suitable site and close to urban centre and major road access. Sections 5-10 above.	YES
		Impact on the ability of emergency services to carry out fire suppression in a bush fire emergency.	Insignificant negative impact. May have positive impact with more water supplies, and active land management.	YES
Infrastructure	An assessment of the issues associated with infrastructure and utilities.	The ability of the reticulated water system to deal with a major bush fire event in terms of pressures, flows, and spacing of hydrants; and	N/A Subdivision and dwelling DAs will be conditioned for minimum 10,000 L of firefighting water per Lot. Sections 5-10 above.	YES

Issue	Detail	Assessment considerations	Evidence	Suitable site
		Life safety issues associated with fire and proximity to high voltage power lines, natural gas supply lines etc.	No life safety issues identified.	YES
Adjoining land	The impact of new development on adjoining landowners and their ability to undertake bush fire management.	Consideration of the implications of a change in land use on adjoining land including increased pressure on BPMs through the implementation of Bush Fire Management Plans.	No significant negative impact identified. Potential positive impact related to additional people, active land management and investment locally.	YES

11. Conclusion

This report is a Strategic Bushfire Study which considers the suitability of the planning proposal site with respect to bushfire risk.

This Strategic Bushfire Study has followed the Aim and Objectives of *Planning for Bushfire Protection 2019*, Section 2.3 Strategic Planning, and specifically addressed the requirements of Chapter 4 – Strategic Planning. Three methods have been used to consider the bushfire risk at both landscape scale and subdivision scale. All three methodologies support the conclusion that the land is suitable for rural residential development.

The proposed subdivision has been assessed against PBP Chapter 5 – Residential and Rural Residential Subdivisions to satisfy the requirements of Section 4.4.1 regarding indicative development layout. The proposed subdivision can satisfy all the detailed criteria to be assessed at the next stage of the process. All proposed lots are large enough to support the minimum APZ requirements for 29kW/m^2 and the specific APZ and BAL detail will be determined at the subdivision and subsequent individual dwelling applications.

The conclusion after this extensive analysis and assessment process is that, with respect to bushfire planning, the planning proposal should receive a positive Gateway Determination and may proceed to the next stages of LEP plan making.

In the authors professional opinion, the planning proposal is a suitable use of the land, and the bushfire protection measures demonstrated in this report comply with the Aim and Objectives of *Planning for Bush Fire Protection 2019,* the Ministerial Direction *4.4 Planning for Bushfire Protection*, and allow for the issue of a Gateway Determination supporting the proposal.

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Blackash Bushfire Consulting
B.Sc., Grad. Dip. (Design for Bushfire Prone Areas)
Fire Protection Association of Australia BPAD Level 3 - 34603

BPAD Bushfire Planning & Design Accredited Practitioner Level 3

Appendix 1: References

Councils of Standards Australia AS3959 (2009) – *Australian Standard Construction of buildings in bushfire-prone areas*

Councils of Standards Australia AS2419 (200) – *Fire Hydrant Installations*

Keith, David (2004) – *Ocean Shores to Desert Dunes – The Native Vegetation of New South Wales and the ACT*. The Department of Environment and Climate Change

NSW Rural Fire Service (2015) *Guide for Bushfire Prone Land Mapping*

NSW Rural Fire Service (2019). *Planning for Bushfire Protection: A Guide for Councils, Planners, Fire Authorities, Developers and Home Owners.* Draft for Public Exhibition

NSW Government (1979) *Environmental Planning and Assessment Act 1979*. NSW Government Printer.

Appendix 2: EP&A Act 1979 – Section 9.1 Ministerial Direction - 4.4 Planning for Bushfire Protection

LOCAL PLANNING DIRECTIONS

Section 9.1(2) of the *Environmental Planning and Assessment Act 1979*

4.4 Planning for Bushfire Protection

Objectives

(1) The objectives of this direction are:

(a) to protect life, property and the environment from bush fire hazards, by discouraging the establishment of incompatible land uses in bush fire prone areas, and

(b) to encourage sound management of bush fire prone areas.

Where this direction applies

(2) This direction applies to all local government areas in which the responsible Council is required to prepare a bush fire prone land map under section 10.3 of the *Environmental Planning and Assessment Act 1979* (the EP&A Act), or, until such a map has been certified by the Commissioner of the NSW Rural Fire Service, a map referred to in Schedule 6 of that Act.

When this direction applies

(3) This direction applies when a relevant planning authority prepares a planning proposal that will affect, or is in proximity to land mapped as bushfire prone land.

What a relevant planning authority must do if this direction applies

(4) In the preparation of a planning proposal the relevant planning authority must consult with the Commissioner of the NSW Rural Fire Service following receipt of a gateway determination under section 3.34 of the Act, and prior to undertaking community consultation in satisfaction of Schedule 1, clause 4 of the Act, and take into account any comments so made,

(5) A planning proposal must:

(a) have regard to *Planning for Bushfire Protection 2019*,

(b) introduce controls that avoid placing inappropriate developments in hazardous areas, and

(c) ensure that bushfire hazard reduction is not prohibited within the APZ.

(6) A planning proposal must, where development is proposed, comply with the following provisions, as appropriate:

(a) provide an Asset Protection Zone (APZ) incorporating at a minimum:

(i) an Inner Protection Area bounded by a perimeter road or reserve which circumscribes the hazard side of the land intended for development and has a building line consistent with the incorporation of an APZ, within the property, and

(ii) an Outer Protection Area managed for hazard reduction and located on the bushland side of the perimeter road,

(b) for infill development (that is development within an already subdivided area), where an appropriate APZ cannot be achieved, provide for an appropriate performance standard, in consultation with the NSW Rural Fire Service. If the provisions of the planning proposal permit Special Fire Protection Purposes (as defined under section 100B of the *Rural Fires Act 1997*), the APZ provisions must be complied with,

(c) contain provisions for two-way access roads which links to perimeter roads and/or to fire trail networks,

(d) contain provisions for adequate water supply for firefighting purposes,

(e) minimise the perimeter of the area of land interfacing the hazard which may be developed,

(f) introduce controls on the placement of combustible materials in the Inner Protection Area.

Consistency

(7) A planning proposal may be inconsistent with the terms of this direction only if the relevant planning authority can satisfy the Director-General of the Department of Planning (or an officer of the Department nominated by the Director-General) that the council has obtained written advice from the Commissioner of the NSW Rural Fire Service, to the effect that, notwithstanding the non-compliance, the NSW Rural Fire Service does not object to the progression of the planning proposal.

Direction 4.4 – issued 20 February 2020